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"Post-Covid Economy in Africa and emerging countries"

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Ahmed Maghni

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LEVELS OF SOME HEAVY METALS IN BOREHOLES WATER IN GAJIRAM, NGANZAI LOCAL GOVERNMENT AREA OF BORNO STATE, NIGERIA

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ABSTRACT

Levels of some heavy metals (As, Mn, Co, Cr, Cd, Fe, Zn and Pb) were investigated in seven boreholes in Gajiram, Nganzai local government area of Borno state, Nigeria. Water samples from Bololo Borehole (B1), Gajiram II Primary School Borehole (B2), Secretariat Borehole (B3), Senior Staff Borehole (B4), General Hospital Borehole (B5), Forestry Borehole (B6) and Ka'ala Borehole (B7) were collected during the dry season (January, February and March, 2019) and rainy season (June, July and August 2019) for the experiment. The heavy metals were determined using Atomic absorption spectrophotometer (Buck scientific model 210VGP AAS, USA). The result revealed that concentration of heavy metals differ with sample locations, B2< B7 < B3< B5 < B6 < B4 < B1 in the dry season. The highest concentration was shown by iron which is 0.511 ± 0.173 mg/l at location B1 and the least concentration was shown by Cobalt 0 ± 0 at all location. The concentration of heavy metals in the dry season are in the order Fe > Zn > Mn > Br > Pb > Cr > As > Cd > CO. In the rainy season, the concentration of heavy metals also differ with sample location B2 < B5 < B1< B7 < B9 < B3< B4. Iron showed the highest concentration in sample location B4. The highest concentration of iron was 0.67 ± 0.09mg/l, and also the least concentration was showed by Cobalt 0 ± 0 at all locations. The concentration of heavy metals in the rainy season are in the order Fe > Zn > Pb > Cr > As > Mn > Cd > Br > Co. The results obtained from the study showed that the concentration of some heavy metals were found to be below the permissible limit of drinking water by WHO and NESREA. Hence the study shows that the quality of groundwater in the study area were not statistical significant difference between seasons.

Keywords: *Heavy metals, boreholes, water, gajiram*

1. INTRODUCTION

According to WHO (2006), about 1.1 billion people lack access to improve drinking water supply. In most cities, towns and villages in Nigeria, valuable man-hours are spent on seeking and fetching water, often of doubt quality from distant sources (Efe, 2005). Groundwater quality has become an important water resources issue due to rapid increase of population, rapid industrialization, unplanned urbanization and too much use of fertilizers and pesticides in

agriculture (Joarder *et al.,* 2008). Pollutant's in groundwater can be from various sources mainly municipal (i.e. leakages from liquid waste and solid waste from land fill), industrial (i.e. liquid waste tanks and pipeline leakages, oil field and brines) and agricultural sources (i.e. irrigation return flow which are sometimes saline). These problems of acute water supply have resulted in the rapid increase or hand dug wells and boreholes with some located within the proximity of soak away and pit latrines (Ukpong, E. C. *et al*., 2015). The quality of groundwater resource depends on the management of human waste as well as the natural physic-chemical characteristics of' the catchments areas (Efe *et al*, 2005; Saha and Baba, 2004). Also, depending on the geology of an area. Underground waters are typically rich in dissolved solids especially carbonates and sulphates of' calcium and magnesium. Other ions may also be present including chlorides and bicarbonate (Wikipedia, 2010). Hence, it is necessary to obtain physic-chemical characteristics of the groundwater so as to compare and monitor water quality and to determine the type of treatment that may be required before use. Usually, water from the boreholes may be free from danger pathogens for humans like cholera, typhoid, dysentery guinea worm and many others. Borehole water is groundwater available in an aquifer obtained by installing a pump to draw the water to the consumers. Any contaminated surface water with pathogen that infiltrates into the soil and become groundwater would be filtered by the soil profile before reaching the depth of aquifer. An aquifer is saturated water bearing stratum that is capable of holding, transmitting and yield sufficient water in underground to well. The major problem of boreholes is chemical content of the ground water, which must be analyzed to ascertain if these dissolved products are within the permissible limits for consumption propose by the authorities, in this case the World Health Organization (WHO, 2006). Heavy metal pollution is one of the major environmental problems today. Most of heavy metal ions are toxic to living organisms (Wang and Chen, 2009). Heavy metals are roughly defined as elements having a density over $6g/cm^3$. Among these elements Co, Cu, Ni, Se and Zn are important in small amounts (Bruines *et al.*, 2000). Of the important metals, Hg, Pb, Cd, As and Cr (VI) are regarded as toxic while Lead, Platinum, Argon, Aurum etc, are referred to as precious metals. Uranium and Titanium are known as radionuclide (Wang and Chen, 2009). Some metals, such as, Cu, Fe and Zn are essential at low concentrations and are toxic at higher levels (Hare, 1992; Tiina, 2001). Prakash and Somashekar (2006) assessed the groundwater quality of Anekal Taluk, Bangalore, India and the results were interpreted by statistical analysis. Out of 1026 bore well and hand pump water samples, 836 samples were not suitable for domestic purpose. About 42% samples showed iron concentration beyond permissible limits which may be due to processes involved during rock formation. About 31% of water samples showed *E.Coli* exceeding beyond acceptable limits of BIS, indicating faecal contamination of water. Impacts on groundwater quality associated with the disposal of electronic wastes in municipal solid waste landfills were discussed by Lee *et al.,* (2004). Lee, (2004) studied the heavy metals concentrations released from a municipal solid waste and reported that concentrations of heavy metals in MSW leachate are sufficient to cause significant adverse effects. A study by Eric *et al.,* (2008) and Spalvins *et al.,* (2008) concluded that E-waste disposal in modern landfills is not resulting in lead leachate conditions at regular levels.

2. METHODOLOGY

2.1. The Study Area

Nganzai is a local government area in Borno State, Nigeria. Nganzai is located in the northern senatorial district of Borno State. It lies on the coordinates of Latitude 12.2910N and Longitude 13.1233E. It has an area of about 2467km and a population of 99799 census 2006. The raining season's starts from April to November. Rainfall is between 1500mm – 2000mm with July – September as the wettest months and December as the driest.

Nganzai has temperature of moderately high throughout the year with a low range. The mean annual maximum and minimum temperature are 47ºC and 25ºC respectively.

Figure 1: Map of Borno state showing the study sites

Figure 2: Map showing Nganzai Local Gov't Area showing the study points

2.2. Materials

2.2.1. Sample collection

Seven (7) boreholes were selected at different locations of the study area. The water samples were collected from the sampling points in precleaned plastic containers and labelled appropriately. The collected borehole water samples were aseptically transferred into sterile containers and brought to chemistry research laboratory, Yobe State University Damaturu for preparation and analysis.

2.2.2. Sample Preparation and Sample Analysis

The samples were digested according to the method described by Clesceri *et al.*, (1989). Standard Solutions of each element were prepared according to manufacturer procedure for Atomic Absorption Spectroscopy used. The concentrations of the standards were within anticipated range of the unknown sample. Absorbances of these standards were measured at the maximum wavelength of the analytes. A plot of the absorbance against the standard concentration gives a straight line graph passing through the origin according to Bear's law is obey. The digested samples were used to determine the concentration of the heavy metals using Atomic Absorption Spectrophotometer (Buck scientific model 210GP). Absorbances of these samples were measured at their specific wavelengths. From the standard calibration curve (Beer Lambert's law), absorbances of the unknown were measured at their specific wavelength of their absorption and read out from the graph. Data collected were subjected to one way analysis of variance (ANOVA) to assess whether heavy metals varied significantly between dry and rainy season samples. Probability less than 0.05 ($p<0.05$) were considered statistically significant. All statistical calculations were performed using graph pad instant (2003) for windows. Results were presented in mean ± standard deviation.

3. RESULTS AND DISCUSSION

Table 1: Mean concentration of some heavy parameters in groundwater of Gajiram location for dry seasons (January, February and March 2019)

Location	Parameters for Dry Season (mg/l)							
	CO	Cd	Fe	Cr	Pb	As	Zn	Mn
B1	ND	ND	0.511a±0.173	ND	0.007a±0.002	ND	0.456a±0.628	0.083a±0.080
B2	ND	ND	0.135a±0.136	ND	0.008a±0.002	ND	0.347a±0.437	0.064a±0.031
B3	ND	ND	0.344a±0.222	ND	0.006a±0.004	ND	0.324a±0.356	0.067a±0.015
B4	ND	0.001±0.001	0.499a±0.175	ND	0.008a±0.003	ND	0.415a±0.479	0.121a±0.063
B5	ND	ND	0.433a±0.208	0.005a±0.015	0.006a±0.002	ND	0.437a±0.481	0.076a±0.063
B6	ND	ND	0.497a±0.256	0.011a±0.003	0.006a±0.004	ND	0.359a±0.354	0.076a±0.015
B7	ND	ND	0.149a±0.126	ND	0.004a±0.010	ND	0.320a±0.364	0.095a±0.061
WHO	1.0	0.5	0.5	0.05	0.05	0.1	5	0.02

Key:
B1- Bololo Borehole
B2- Gajiram II Primary School Borehole
B3 – Secretariat Borehole
B4 – Senior Staff Borehole
B5- General Hospital Borehole
B6- Forestry Borehole
B7- Ka'ala Borehole
ND: Not detected

The values given in the table above are means of 6 replicate values, n=6. Within the columns, means with different alphabets are statistically different ($p<0.05$).

Table 2: mean concentration of some heavy metal parameters in groundwater of Gajiram location for raining season (June, July and August 2019)

Location	Parameters for Raining Season (mg/l)							
	CO	Cd	Fe	Cr	Pb	As	Zn	Mn
B1	ND	ND	0.100a±0.068	0.001±0	0.006±0.001	0.002±0	ND	0±0.001
B2	ND	0±0.001	0.088a±0.067	0±0.001	0.006±0.001	0.001±0.001	ND	0±0.001
B3	ND	ND	0.291a±0.054	ND	0±0.001	0.006±0.001	ND	ND
B4	ND	0±0.001	0.666a±0.089	ND	0.001±0	0.013±0.002	0.002±0.001	0.259a±0.020
B5	ND	ND	0.098a±0.073	ND	ND	ND	ND	ND
B6	ND	ND	0.296a±0.054	ND	0.003±0.002	0.006±0.001	0.001±0	0.095a±0.117
B7	ND	ND	0.110a±0.072	ND	ND	0.009±0.001	ND	0.004a±0.005
WHO	1.0	0.5	0.5	0.05	0.05	0.1	5	0.02

Key:
B1- Bololo Borehole
B2- Gajiram II Primary School Borehole
B3 – Secretariat Borehole
B4 – Senior Staff Borehole
B5- General Hospital Borehole
B6- Forestry Borehole
B7- Ka'ala Borehole
ND: Not detected

The values given in the table above are means of 6 replicate values, n=6. Within the columns, means with different alphabets are statistically different ($p<0.05$).

Table 1 present mean concentration of heavy metal in ground water sample of Gajiram Nganzai local Government area of Borno state in dry season. The highest concentration was shown by iron which is 0.511 ± 0.173mg/l at location B1 and the least concentration was shown by Cobalt, 0 ± 0 at all locations. The concentration of the heavy metals in B1 are in the order Fe > Zn > Mn > Pb > Cr > As > Cd > CO. The result revealed that concentration of iron with sample locations, B2 < B7 < B3 < B5 < B6 < B4 < B1. Table 2 present mean concentration of heavy metals in groundwater sample at Gajiram Nganzai Local government area of Borno state in raining season. Iron showed the highest concentration in sample location B4. The highest concentration of iron was 0.67 ± 0.09mg/l, and also the least concentration was shown by Cobalt (0 ± 0) at all locations. The concentration of heavy metals in B4 are in the order Fe > Mn > As > Zn > Pb > Cd > Cr= Co. The result revealed that the concentration of iron differ with sample location B2 < B5 < B1 < B7 < B6 < B3 < B4. Heavy metals are potential environmental contaminants with the capacity of causing Truman health problems when consumes in excess through food or drink. They are givens special attention throughout the world due to their toxic effects even at very low concentration. Several cases of human disease, disorders, malfunction and malformation of organs due to metal toxicity had been reported (Jarup L., 2003). Several reports have also confirmed that heavy metal can adversely affect metal and neurological functions as well as induced impairment in endocrine and immune system. Metal bioaccumulation is a major route through which increase level of the pollutants are transferred

across food churn or web creating public health concerns wherever men is involved in the food chain (Ambedker *et al.*, 2011). Presence of heavy metals such as Pb and Cd in the environment has Been a source of worry to environmentalists, government agencies and health practitioners due to their health implications and begins non-essential element of no benefit to human (Adebayo *et al.*, 2011). The observed mean iron of the samples from the boreholes could be arranged in the following order for dry season, B2 < B7 < B3 < B5 < B6 < B4 < B1 while B2 < B5 < B1 < B7 < B6 < B3 < B4 for rainy season. The average level of iron in all the samples of dry and rainy season fall below the recommended limits of NESREA (1.0). Also the average level of iron in all the samples with exception of B1 in dry and B4 in rainy, fall above the recommended standard limits of regulating bodies WHO (0.5). The high value of iron might be due to the fact that the chemicals used in the process contain iron as at the time of the sampling. The results was found not statistically significant differences ($p<0.05$) among the boreholes, there were significant difference between the season. Prakash and Somashekar (2006) assessed the groundwater quality of Anekal Taluk, Bangalore, India and the results were interpreted by statistical analysis. Out of 1026 bore well and hand pump water samples, 836 samples were not suitable for domestic purpose. About 42% samples showed iron concentration beyond permissible limits which may be due to processes involved during rock formation. About 31% of water samples showed *E.Coli* exceeding beyond acceptable limits of BIS, indicating faecal contamination of water. The observed mean of manganese in the sample from the boreholes could be arranged in the following order for dry season, B4>B7>B1>B6=B5>B3>B2 while samples in rainy season in the order B4>B6>B7>B1=B2. The average level of manganese in all the samples (with the exception in B1, B2 and B7 in rainy season) were higher than the recommended limits of NESREA (0.01) and WHO (0.02). Results found not statistically difference ($p<0.05$) among the boreholes. But there are significant differences between the seasons. This may be due to the different season variation during sampling. Dietvorst (2013) carried out a water quality study in rural Cambodia which showed that a shallow aquifer was chemically less of a health risk than a deep aquifer; however, microbial contamination was considerable for both open and rope-pump shallow wells. The presence of iron and manganese may lead to the formation of incrustations of pipe mains by the deposition of ferric hydroxide and manganese oxide. The observed mean lead of the sample from the boreholes could be arranged in the following order for dry season, B2> B4> B1> B5> B3> B6> B7 and B1>=B2> B6> B4> B3 for rainy season. The average level of lead in all the samples fall below the recommended limits of NESREA (0.1) and WHO (0.05). Results were found statistically significant difference ($p <0.05$) among the boreholes as well as between season. This might be due to the nature of seasonal variation at the time of sample collection. Excess quantities of leads many impact human health, especially effecting small children (Orisikwe 2009). In excess concentration, the negative effect of lead is considering the number one health threat to children, and the effects of lead poisoning can last a life time. Not only does lead poisoning stunt a Childs growth, lead affect central nervous system, particularly in children and also damages kidneys and the immune system. The observed mean Zinc of the sample from the borehole could be arranged in the following order for dry season, B1> B5>B4>B6>B2>B3>B7 and B4>B6 for raining seasons. The average level of zinc in all the samples in rainy season fall below the limits while all that of dry season were above the NESREA standard limit (0.2mg/l). This might be due to nature of chemical used in the season when the sampling was taken. Zinc occurs naturally in air, water and soil but zinc concentration is rising unnaturally, due to addition of zinc through human activities. It is a trace element that is essential for human health, the danger of which can be to unborn child when mothers absorbed large concentration of zinc and other health problem such as stomach cramps, skin irritation, vomiting and anaemia (WHO, 2006). The observed mean cadmium of the samples from the boreholes could be arranged in the following order for rainy season B2=B4. Cadmium were below the detection limit in dry season.

The average level observed in the entire sample in dry and rainy seasons were fall below the recommended standard limit by NASREA (0.01mg/l) and WHO (0.5mg/l). Results were found statistically significant difference (P<0.05) among the boreholes but no difference between the season. The observed mean chromium of the samples from the boreholes could be arranged in the following order for dry season B6>B5 and in rainy season, B1>B2. The level of chromium in the entire samples were found below the recommended limit of NESREA (0.5mg/l) and WHO (0.05mg/l). Results were found statistically significant difference (P<0.05) among the boreholes but no difference between the seasons. Chromium can cause allergic reaction in the skin damage the lungs, and asthma attacks maximum concentration of 0.1mg/l was set up (ATSDR 2005). The observed mean Arsenic of the samples from the boreholes could be arranged in the following order for rainy season B4>B7> B3=B6>B1>B2. The results were found statistically significant difference (p<0.05) among the boreholes and also between the season in dry season. Arsenic was found below the detection limit in dry season. The average level of Arsenic in all the samples were found below the recommended standard limit of WHO (0.1mg/l). High exposure or arsenic could cause diseases such as cardiovascular, hematological, and neurological respiratory, gastrointestinal and birth disorders, dermatitis and cancer.
Cobalt was not detected in all the samples.

4. CONCLUSION

The samples contained variable levels of the heavy metals. The highest concentration was shown by iron while Cobalt was not detected in all the samples. The results obtained from the study showed that the concentration of some heavy metals were found to be below the permissible limit of drinking water by WHO and NESREA. Hence the study shows that the quality of groundwater in the study area were not statistical significant difference between seasons.

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EXAMINING THE IMPACT OF FOREIGN CAPITAL FLOWS ON DIFFERENT TYPES OF UNEMPLOYMENT IN SMALL OPEN ECONOMIES: A REGRESSION ANALYSIS OF CROATIA AND THE CZECH REPUBLIC

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ABSTRACT

There is a significant volume of research studying the impact of foreign capital flows on unemployment. The investigated variables in this paper include remittance inflows, FDI, as well as tourism spending, while additional variables that may have an impact on the unemployment rate have also been included to minimize the risk of omitted variable bias. The paper investigates the impact of foreign capital inflows on three different types of unemployment: youth unemployment, unemployment of those without college degrees, and unemployment of those with degrees. The paper implements an OLS regression to analyse the impact of these variables in Croatia and the Czech Republic between 1997 and 2020. The paper concludes that remittance inflows have the most prominent role in decreasing the unemployment rate in Croatia. It further concludes that domestic factors and the growth of the aggregate economy, rather than foreign capital factors, are key determinants of the unemployment rate in the Czech Republic. The paper highlights the lacking contribution of educational spending on minimizing the unemployment rate and proposes that educational spending needs to reconsider the real-world demands of the labour market.

Keywords: *Unemployment rate, foreign capital flows, dependency theory, OLS regression, youth unemployment*

1. INTRODUCTION

The impact of foreign capital flows is often contested in the modern literature per Nwaogu and Ryan (2015) and this is particularly true for small and open economies such as Croatia. Tourism spending accounts for a significant part of the Gros Domestic Product (GDP) of the country and contributes to as much as 18% of its GDP according to data from the World Bank (2022). Remittance inflows contribute to another 7% of GDP, highlighting the dependence of Croatia on international capital inflows (World Bank, 2022). Similarly, this highlights the confusing dynamic of priorities that countries need to be focused on in order to ensure that they have the preconditions for sustainable economic growth. One problem is that there are lacking funds and capacity to even achieve development, while some of the foreign capital inflows could potentially result in unintended adverse impacts. The potential negative impact of financial remittances on economic growth has been documented in the existing literature as it is plausible that remittances can either increase the real exchange rate or cause labour shortages (Acosta et al., 2009). The notion of focusing on tourism as the main generator of economic growth also have risks associated with them described in Šergo et al. (2017). Much of the analysis in the present literature is focused around whether foreign capital flows encourage economic growth (Fayissa and Nsiah, 2010; Pradhan, 2016; Anetor, 2019). The approach of the paper is slightly different as it conducts an analysis of whether these foreign capital flows help mitigate three distinct types of unemployment: the unemployment rate of those with basic education, the

unemployment rate of those with advanced education, as well as the youth unemployment rate. In doing so, the paper applies an approach more resembling that of León-Ledesma and Piracha (2004). The analysis will focus on two open economies – the Czech Republic and Croatia. Unlike Croatia that has struggled to gain competitive advantages as a result of EU membership, the Czech Republic faced significant benefits in the internationalization of its economy and the growth of its export sector as a result of EU membership (Kubíčková et al., 2016). For this reason, this paper contrasts how the international flows of capital have impacted the Czech Republic compared to Croatia as both countries are highly dependent on certain foreign capital inflows. Following a brief literature review, the paper will present a more detailed elaboration of the methodological approach including the specification of the regression model and a more detailed rationale for the variable selection. After explaining the methodological approach of the paper, the results of the regression models will be examined and contextualized within the existing literature. The final section will propose policy recommendations and highlight further research opportunities.

2. LITERATURE REVIEW

The existing literature has reached different conclusions as to the relationship between different types of foreign capital inflows and economic growth as well as the unemployment rate. Šergo et al. (2017) have utilized an approach centred around the generalised linear mixed-effect (GLMM) structure modelling and concluded that countries that are highly dependent on tourism as a revenue stream are more likely to experience a recession event. The conclusion of the authors is significant as it establishes a link between the country's dependency on a tourism and adverse economic risks (Šergo et al, 2017). Banday and Ismail (2017) examined the impact of tourism revenue on the BRICS countries in the period between 1995 and 2013. Utilizing a co-integration model, the authors have established that the general impact of tourism on economic growth is positive (Banday and Ismail, 2017). Banday and Ismail (2017) also emphasize that tourism revenue may have unintended negative consequences by contributing to negative externalities such as pollution. Sahli and Nowak (2005) point out a similar perspective in that tourism can lead to unintended social and environmental damages, but also point out that in certain conditions it can have an adverse impact on economic growth. The authors argue that in countries that still have a strong agrarian sector, when tourism becomes more labour-intensive than the agricultural sector, this can have adverse economic impacts as well that lead to an overall welfare loss for society (Sahli and Nowak, 2005: 25). León-Ledesma and Piracha (2004) examined the impact of remittances on a panel of transitioning countries in Eastern Europe. The authors applied a fixed estimator panel approach that considered the following countries: Bulgaria, Croatia, the Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine (León-Ledesma and Piracha, 2004). The authors concluded that the investment activity was significantly increased in the observed countries as a result of remittances (León-Ledesma and Piracha, 2004). León-Ledesma and Piracha (2004: 74) hypothesize that the statistically significant link between remittances and the unemployment rate could be a result of the following:

1) Individuals leaving for abroad allow for more working opportunities for those choosing not to migrate;
2) Remittance flows can contribute to investment activities that then, in turn, generate new job opportunities including self-employment options for those receiving remittances.

Pradhan (2016) utilized a panel VECM approach and determined that remittances can be a factor contributing to economic growth and investment opportunities. Hansen and Rand (2006) highlight that there is no consensus on how specifically FDI impacts growth in the long-run, but in their analysis the authors found that it tends to encourage economic growth in the long-

run. Bhattarai (2016) also supports such an approach as most transnational corporations invest money in such a manner and this can, in turn, contribute to economic growth. Acosta et al. (2009) examine the potential way how remittance inflows can impact the aggregate economy and the authors conclude that even if it does impact the economy in a manner that simulates economic growth, it could still enable the Dutch Disease to develop. It can be possible to summarize that the existing literature does not have a clear consensus on how certain types of foreign capital inflows impact the aggregate economy or the unemployment rate.

3. METHODOLOGY AND DATA

The methodology of the paper is based on a standard Ordinary Least Squares (OLS) regression examining data for both the Czech Republic and Croatia in the period of 1997 – 2020. The justification for the observation of different forms of unemployment is based on theoretical understanding of the topic and in the need to study unemployment in its different aspects. Most modern economists agree that there is no need to focus on frictional unemployment and that structural unemployment is one of the key problems hindering development. Studying youth unemployment is a significant aspect given the high unemployment rate that is present particularly in countries that have been adversely impacted by macroeconomic imbalances (Kokotović, 2016). As has already been established in Kokotović (2016), certain variables may impact the total unemployment rate and the youth unemployment rate in entirely divergent manners. The reason for separating out unemployed individuals with a tertiary degree compared to those without a tertiary degree is to investigate what type of jobs foreign capital flows are developing, if any. If any of these variables is associated with decreasing the unemployment of those with a college degree, this would indicate that any of these forms of capital have an investment capacity rather than just creating seasonal or low-paying jobs. The data used for the regressions has been acquired from Eurostat (2022) and the World Bank (2022) and additional information about the variables is provided in Table 1, while the summary statistics can be found in the Appendix.

Table 1: Description of variables

Name of the variable	Abbreviated form	Unit of measurement	Relevance to the regression models
Unemployed individuals with advanced education	uned	Percentage of people unemployed	Dependent variables
Unemployed individuals with basic education	unbe	Percentage of people unemployed	
Youth unemployment rate	yur	Percentage of people unemployed	
Inflation	I	Percentage change in GDP deflator	Independent variables
Remittance inflows	RMT	Percentage of remittance inflows as GDP	
Foreign domestic investment	FDI	Inflows in real 2016 dollars	
Tourism revenue	TR	Spending in real 2016 dollars	
GDP per capita	GDPpc	Spending in real 2016 dollars	
Education spending	ES	Percentage of GDP spent on education	

(Source: Authors' summary of variables from World Bank (2022) and Eurostat (2022) data

The logarithmic transformation of the variables FDI, RMT, GDPpc, and TR was necessary in order to ensure to reduce the asymmetric nature of these variables.

By performing a logarithmic transformation, the paper has mitigated the problems that the skewness and kurtosis of these variables might have otherwise caused. In order to ensure that the robustness and validity of the results, necessary checks for autocorrelation, heteroskedasticity, and the normality of distribution of the residuals will be performed on the final regression models. The empirical focus of the paper can be summarized in the three following equations:

(1) $ytur = \alpha + \beta_{1,t}\log(FDI) + \beta_{2,tlog(}RMT) + \beta_{3,tlog(}GDPpc) + \beta_{4,tlog(}TR) + \beta_{5,t}ES + \beta_{6,t}I +_{\epsilon}$

(2) $uned = \alpha + \beta_{1,t}\log(FDI) + \beta_{2,tlog(}RMT) + \beta_{3,tlog(}GDPpc) + \beta_{4,tlog(}TR) + \beta_{5,t}ES + \beta_{6,t}I +_{\epsilon}$

(3) $unbe = \alpha + \beta_{1,t}\log(FDI) + \beta_{2,tlog(}RMT) + \beta_{3,tlog(}GDPpc) + \beta_{4,tlog(}TR) + \beta_{5,t}ES + +\beta_{6,t}I +_{\epsilon}$

In the equations above, all of the independent and dependent variables are abbreviated in a manner consistent with the details provided in Table 1. The model further includes a constant, error term, as well as the coefficients that will be determined through the OLS regression. As recognized by Nwaogu and Ryan (2015), a significant problem presents in much of the existing literature studying foreign capital flows is omitted variable bias so the paper includes several relevant forms of internal and external factors that can have a statistically significant impact on the unemployment rate. The link between inflation and the unemployment rate has been long established, even though it may be slightly more complicated in the case of the Czech Republic as the inflation rate may be beneficial for its exporting sector (Rocheteau et al., 2007; Berentsen et al., 2011; Alisa, 2015). GDP per capita is measured as a proxy variable for the overall viability of the economy and, as such, any type of increase in the aggregate economy should lead to greater consumer spending and demand for labour that should decrease most types of unemployment. Tourism revenue is a significant avenue of growth for both countries, despite the fact that it contributed to around 8% more of GDP in the case of Croatia per the World Bank (2022) compared to the Czech Republic. It is expected that tourism revenue will have a significant impact in decreasing unbe, although its impact on yur and uned is contested in the existing literature as there are discrepancies in the existing literature for the capacity of tourism to develop jobs for those with college degrees (Matijová et al., 2019). Remittance inflows contribute to 2% of the GDP of the Czech Republic and to roughly 7% of the GDP of Croatia and any statistically significant link to unemployment would highlight the investment impact of remittances. While some authors including Pradhan (2016) hypothesize that remittance inflows have an investment capacity that contributes to new forms of labour, other authors including Azeez and Begum (2009) also highlight that remittances can have a negative impact as individuals having sufficient disposable income may work less thus promoting labour shortages that can have an adverse impact on the aggregate economy. The current literature is currently undecided on the impact of human capital and how it should best be measured, but theoretically additional government investment into education should lead to better quality education that thus leads to individuals better suited for the labour market. Such a logic is disputed by some authors including Marginson (2019) who believes that there is significant real-world evidence that human capital theory is flawed in practice. The author particularly emphasizes that gains from inheritance are larger than gains from wages and highlight the misplaced nature of human capital theory (Marginson, 2019). These are all theoretical assumptions the paper has established based on previous studies, but the results will be clarified in the following section.

4. RESULTS AND DISCUSSION

Before discussing the topic at greater length, the results of the regression model for the youth unemployment rate are presented in Table 2.

Table 2: OLS regression models for yur for Croatia and the Czech Republic

Dependent variable: your	Croatia	Czech Republic
Const	-572.46 (0.123)	20.38 (0.894)
ES	17.54* (0.0516)	3.17 (0353)
I	-5.99*** (0.000)	-1.03 (0.1043)
l_TR	29.9* (0.052)	10.42 (0.053)
l_GDPpc	-6.89 (0.725)	-21.94** (0.021
l_FDI	-0.63 (0.7111)	-1.46 (0.332)
l_RMT	-47.36*** (0.0067)	2.62 (0.043)
R-squared	0.856	0.795
Adjusted R-squared	0.777	0.651
F-value	10.86*** (0.00004)	6.97*** (0.002)
White's test for heteroskedasticity	10.17 (0.601)	16.37 (0.291)
LM test for autocorrelation	0.112 (0.735)	3.39 (0.102)
Chi-square test	0.236 (0.888)	1.803 (0.406)

note:, **, and *** indicate statistical significance at the respected 0.1, 0.05, and 0.01 levels*
Source: Authors' calculations

It should be noted that the necessary statistical tests indicate the absence of autocorrelation, heteroskedasticity as well as the fact that the Chi-square test indicates the residual errors for both models are normally distributed. The selected variables clearly have an either joint or individual relevance given the high F-value of both models and the regression model for Croatia particularly has a reasonably high predictability value given that the R-squared value is 0.856. The findings of the models largely conform to the criticism provided by Marginson (2019) as neither of the models detect any statistical link between education spending and minimizing the youth unemployment rate. While this does not in itself indicate the failure of human capital theory, perhaps it indicates redundant spoilage of funds in educational spending or that funds are being misappropriated and thus not adequately preparing students for the demands of the job market. In addition, most of the foreign forms of capital have no relevance on minimizing the youth unemployment rate in either model. The only exception is the relevance of remittance inflows in minimizing the youth unemployment rate in the regression model for Croatia. This would indicate that there is a relevance in remittance inflows beyond satisfying current consumption demands and that remittance inflows do have investment value for the aggregate economy of Croatia. Such findings largely confirm the approach to remittance inflows as described by Nwaogu and Ryan (2015) as it means that when the necessary institutional and

social preconditions are present, remittance inflows can support economic growth and lead to larger demand for labour. The economic growth of the country seems to be the most prominent variable in minimizing the youth unemployment rate for the Czech Republic. This would indicate that, given the fact that none of the considered external capital variables have shown to be relevant, other domestic factors may contribute to the decrease in the Czech youth unemployment rate. As the country experiences higher economic activity, this would offer a logical explanation as to why there may be higher demand for labour that could then also help minimize the youth unemployment rate. Given the persistent FDI inflows since the Czech Republic entered the EU, the lack of a statistically significant relationship with the youth unemployment rate may seem slightly unusual. Values for the large export sector should also be considered in future models given that there does not seem to be a relevant link between FDI and the youth unemployment rate.

Table 3: OLS regression models for uned for Croatia and the Czech Republic

Dependent variable: uned	Croatia	Czech Republic
Const	-106.94 (0.21)	-5.33 (0.71)
ES	4.33** (0.041)	0.07 (0.903)
I	-1.08** (0.0006)	-0.18* (0.08)
l_TR	3.73 (0.26)	1.74* (0.08)
l_GDPpc	3.44 (0.45)	-2.6* (0.09)
l_FDI	-0.43 (0.29)	-0.23 (0.32)
l_RMT	-9.86** (0.013)	0.76 (0.16)
R-squared	0.816	0.567
Adjusted R-squared	0.716	0.331
F-value	8.136 (0.002)	2.34 (0.099)
White's test for heteroskedasticity	9.473 (0.662)	10.662 (0.558)
LM test for autocorrelation	0.043 (0.84)	5.087 (0.074)
Chi-square test	2.081 (0.353)	0.479 (0.787)

note:, **, and *** indicate statistical significance at the respected 0.1, 0.05, and 0.01 levels*
Source: Authors' calculations

While both of the models in Table 3 do not have statistical problems in terms of the specification test, both are inferior compared to the models for the youth unemployment rate. As has already been noted in the paper, it is not uncommon for different variables to have entirely divergent impacts on different types of unemployment, but none of the variables except for remittance inflows have a strong impact on decreasing the unemployment rate of those with advanced degrees. This would indicate that those with advanced degrees benefit from remittance inflows into Croatia, likely because they themselves are then able to engage in entrepreneurship or because they benefit from such choices made by others who then proceed to employ them.

Such an investment capacity of remittance inflows conforms to the view of Pradhan (2016). Educational spending actually seems to increase the rate which is not entirely impossible given the limitations of human capital theory to explain the rise of unemployment among young people with a degree. As the government spends additional funding on education through subsidizing education, funding textbooks, and similar programs, more individuals are able to achieve higher education. As there is an increase in the number of individuals with higher education, it seems that Croatia has reached a limit to how its current educational spending could be beneficial for the wider trends in the labour market. This largely conforms to some of the findings of Aristovnik and Obradić (2014) who have indicated that there are many redundant costs in the educational sector in Croatia and that there is a clear need for rationalization. The selected domestic and foreign capital flow variables do not have an individual relevance in determining the value of the youth unemployment rate for the Czech Republic despite an acceptable R-value of 0.567. This may indicate that some of the variables are jointly relevant or that the model specification proposed by a significant part of the existing literature is not appropriate for this case. Given the prominence of the export sector in the Czech Republic, perhaps including this variable would have led to an overall better fit of the model. It should be noted that while there is no statistically significant link between educational spending and the unemployment rate in the case of the Czech Republic, it does not seem to be helping minimize it either. This conforms to findings by Scalfani (2008) that emphasize that many educational systems do not lead to the development of human capital or to relevant competences for students. The results for the OLS regression for the unemployment rate for those with basic education is presented in Table 4.

Table 4: OLS regression models for unbe for Croatia and the Czech Republic

Dependent variable: unbe	Croatia	Czech Republic
Const	-414.84 (0.14)	58.32 (0.56)
ES	11.301* (0.093)	-2.26 (0.57)
I	-2.54*** (0.006)	-1.38* (0.051)
l_TR	17.86 (0.11)	15.04** (0.02)
l_GDPpc	2.55 (0.86)	-33.38*** (0.005)
l_FDI	-1.35 (0.31)	-0.91 (0.56)
l_RMT	-17.17 (0.14)	7.96** (0.043)
R-squared	0.682	0.746
Adjusted R-squared	0.508	0.608
F-value	3.931 (0.024)	5.388 (0.008)
White's test for heteroskedasticity	13.451 (0.337)	11.68 (0.472)
LM test for autocorrelation	1.403 (0.257)	1.656 (0.039)
Chi-square test	0.307 (0.858)	1.993 (0.369)

note:, **, and *** indicate statistical significance at the respected 0.1, 0.05, and 0.01 levels*
Source: Authors' calculations

There are some differences in the model of those with basic education compared to the remaining two models. In terms of remittance inflows, this is the only example where remittance inflows despite contributing to decreasing the unemployment rate do not seem to be statistically significant for Croatia. Tourism revenue has not contributed to minimizing the unemployment rate in any of the observed models. In the case of the Czech Republic, the rate of economic growth was the most significant factor in minimizing the unemployment rate of those with basic degrees. This would suggest that other domestic factors not considered by the model have a higher value in explaining changes to the unemployment rate despite the satisfactory R-squared value of 0.746. Both tourism activity and remittance inflows seem to be associated with increasing the unemployment rate of those with basic education in the Czech Republic. One possible explanation focuses on the theoretical assumptions of Acosta et al. (2009) who have emphasized that remittance inflows, much like tourism, can contribute to the appreciation of the real wage rate and the Dutch Disease. As a result, many of those working jobs with low wages may face greater costs and, theoretically, have less incentives to work rather than seek social support given an increase in living costs. Overall, all of the three models point to the failure of human capital theory as described in depth by Marginson (2019). In none of the observed cases does additional education spending contribute to minimizing the unemployment rate and in the case of those with advanced degrees in Croatia, it actually seems to increase it. Of the observed foreign capital variables, remittance inflows seemed to have the most significant impact on minimizing the observed unemployment rates in Croatia. It should particularly be noted that the youth unemployment rate is a prominent problem in Croatia and this link is relevant to the long-term economic growth of Croatia. Another aspect that should be noted is the lack of a statistically significant link between tourism revenue and a decrease in unemployment. Given the strategic role of tourism in the development of Croatia, this could present a significant problem, but such a statistical link is not illogical. As emphasized by Bečić and Črnjar (2009), most tourism venues in Croatia struggle with high staff turnover and workers employed there during the maritime season are often seasonal workers, those working during the continent during the winter, foreigners, as well as students. Students cannot be listed as unemployed and most of the remaining groups are not technically unemployed individuals. While tourism remains one of the strategic industries in the Croatian economy, there is a clear need for diversification given that many regions do not receive substantial benefits from tourism. State and local taxes gained from tourism revenue could be used as a source of funding that could mitigate the potential damages of structural and the youth unemployment in Croatia. On its own, tourism revenue should not be expected to decrease the unemployment rate so policy interventions are required to correct this form of market failure.

5. CONCLUSION

The findings of the paper have relevant real-world implications for policy-makers. In all of the observed regression models, this paper fails to establish a link between educational spending and a decrease in the unemployment rate. This may indicate long-term problems in how the education system is aiding the development of human capital as well as redundant spending within the educational system itself. Both of these conclusions conform to the criticism provided by Marginson (2019) about human capital theory. Furthermore, the paper finds that many of the other observed foreign capital inflows have very little relevance to determining any of the observed unemployment rates with the exception of remittance inflows in Croatia. This is a significant finding given the contested impact of remittances inflows in the existing literature (Acosta et al., 2009; Pradhan, 2016). Given this statistical link, it is clear that policy-makers in Croatia should aim to facilitate investments from those who have already emigrated from Croatia and provide the necessary institutional framework to ensure these investments can take place without redundant administrative barriers.

The paper also concludes that tourism revenue has no relevance on the observed forms of unemployment. Measures need to be taken to diversify the approach to the labour market as the youth unemployment rate is one of the significant problems impacting Croatia. The youth unemployment rate and those without advanced degrees are two groups that contribute to structural unemployment in Croatia. Finding methods of integrating these potentially vulnerable groups in the labour market is essential for the long-term viability of the Croatian economy. Otherwise, the trend of individuals migrating from Croatia will persist and exasperate worrying demographic trends and the sustainability of the pension and health system as described in Draženović et al. (2018). In terms of future research, few papers consider unemployment rate beyond the total unemployment rate, failing to recognize that very different factors may have a role in determining different types of unemployment. There is significant room in expanding on the models considered in the paper, particularly in the case of the Czech Republic, as well as by expanding such an approach to other countries.

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APPENDIX

Table A1: Summary statistics for Croatia regression models

Variable	Mean	Median	S.D.	Min	Max
ES	5.04	4.80	0.558	4.30	6.40
uned	7.74	7.60	1.85	5.04	11.2
unbe	15.0	13.8	4.62	9.09	25.3
yur	31.8	31.8	8.97	16.6	50.0
I	2.56	2.97	1.67	-0.0749	5.50
l_TR	22.7	22.9	0.458	21.7	23.2
l_FDI	21.0	21.0	0.981	17.8	22.4
l_GDPpc	9.88	9.95	0.306	9.28	10.3
l_RMT	1.47	1.38	0.224	1.26	1.94

Source: Authors' calculations

Table A2: Summary statistics for the Czech Republic regression models

Variable	Mean	Median	S.D.	Min	Max
ES	4.57	4.60	0.312	3.90	5.20
uned	2.13	2.23	0.581	0.990	2.86
unbe	21.4	22.4	5.25	10.6	28.5
yur	14.0	16.2	4.97	5.63	19.9
I	1.80	1.41	1.55	-1.43	4.40
l_RMT	-0.0375	-0.00158	0.445	-0.736	0.534
l_GDPpc	10.3	10.3	0.239	9.88	10.7
l_FDI	22.7	22.9	0.582	21.3	23.3
l_TR	22.7	22.8	0.274	21.9	22.9

Source: Authors' calculations

NEW TECHNOLOGIES IMPORTANCE IN DISTANCE EDUCATION

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ABSTRACT
Nowadays the increasingly technological society have to be followed by an awareness of the importance to include specific skills to cope with new technologies in school curriculums. In a knowledge society context, education requires different approaches, in which technological component cannot be ignored. New technologies and the exponential increase of information in modern society lead to another work organization, in which knowledge specialization is essential, transdisciplinary and interdisciplinary collaboration and the easy access to information. The consideration of knowledge development as a precious and valuable value are required and usefulness in economic and social life. Therefore, a new paradigm is emerging in education and the role of the teacher, in the context of new technologies is changing radically, due to a set of activities with didactic-pedagogical interest can be developed, such as the exchange of scientific and cultural data from different natures, the production of texts in a foreign language and the elaboration of inter-university journals, thus allowing the development of learning environments centred on student activity, on the importance of social interaction and on the development of a spirit of collaboration and autonomy in students. Although, teachers aware of the e-learning and b-learning potential, are still unaware of many functionalities of technologies, in addition sometimes revealing a certain concern in excessive computers use for leisure purposes by students. Teacher, in this changing context, needs to know how to guide students to collect information, how to treat it and how to use it, assuming teacher the role of an educator. Teachers need to be in this context a self-research guide and adviser on student learning, encouraging individual student work or supporting the work of groups in their different interest areas. Teachers and students in distance learning courses must mediate efficient and concrete relationships, establish closeness and trust bonds, build respect relationships and encourage autonomy, authorship and creativity in students.
Keywords: *distance learning, university, technologies, learning, skills*

1. CONTEXTUALIZATION

The quality of education, generally centred on curricular and didactic innovations, cannot be excluded from the resources available to carry out innovations in educational matters, nor from the management forms that enable their implementation. On the other hand, the incorporation of new technologies as common basic contents is an element that can contribute to a greater connection between teaching contexts and cultures that have been develop outside school environment. With this situation, educational institutions face the challenge not only for incorporating new technologies as teaching content, but also for recognizing and starting from the conceptions that students have about these technologies to elaborate, develop and evaluate pedagogical practices that promote development of a reflective disposition on knowledge and

technological uses. Today's society is marked by profound changes characterized by a great appreciation of information. Thus, in the so-called information society, the processes of acquiring knowledge assume a prominent role and start to demand as critical, creative professional, with the ability to think, learn and apprehend, to work in groups and to know himself as an individual. The educational system must train these professionals, and for this it is essential to expand the instruction that the teacher gives to the student, promoting the construction of knowledge by the student and the development of new skills, namely the ability to innovate, create the new from the known, adaptability to new realities, creativity, autonomy, and communication. After all, it is university's job to prepare students to think, solve problems and respond quickly to continuous changes. In fact, with new tools, new possibilities are opened for education, demanding a new attitude from the educator and with the use of telematic networks in education, information can be obtained from sources, such as research centres, universities, libraries, allowing works in partnership with different institutions; connections with students and teachers at any time and place, favouring the development of works with exchange of information between universities, countries, allowing teachers to work better in the development of knowledge. Access to computer networks interconnected at a distance allows learning often take place in virtual space, which needs to be adapted to pedagogical practices. The university is a privileged space for social interaction, which must be interconnected and integrated into other knowledge spaces that exist today, incorporating technological resources and communication via networks, allowing to build bridges between knowledge, thus becoming a new element of cooperation and transformation. The way of producing, storing, and disseminating information is changing; the enormous volume of research sources is open to students through the internet, digital libraries in place of printed publications and distance courses, by videoconference or through internet. Universities are responsible for introducing new communication technologies and leading the performance changing process of the teacher, who is the main actor in these changes, enabling the student to correctly search for information in different types of sources. It is also necessary to make the entire school society, especially students, aware of the importance of technology in social and cultural development. The qualitative leap, using new technologies, may occur in the course organization program and through the teacher actions, in addition to encouraging the use of new teaching technologies, stimulating interdisciplinary research adapted to reality. Most advanced technologies can be used to create, experiment and evaluate educational products, whose aim is to introduce a new paradigm in education, suitable for the information society, to resize human values, deepen thinking skills and make the work between teacher and students more participatory and motivating. The integration of work with new technologies in the courses, as tools, requires a systematic reflection about their objectives, their techniques, the chosen contents, the skills and their requirements to the meaning of education. With new technologies, new ways of learning, new skills and ways of carrying out the necessary pedagogical work are required, being, fundamentally, necessary to continuously train teachers to act in this telematic environment, in which technology serves as a teaching-learning process mediator. New technologies can have a significant impact on the role of teachers, due to the constant recycling received via network, in terms of contents, methods and use of technology, supporting a general teaching model that sees students as active participants in the learning process and not as passive recipients of information or knowledge, teachers are encouraged to use networks and begin to redesign lessons and encourage students to participate in new experiences. By having access to information technologies, with their application to knowledge, students will later be change agents in the productive and service sector, naturally influencing their use. The proper use of these technologies stimulates the ability to develop research strategies and selection criteria and information processing skills, applicable not only to the activity’s programmes.

On the other hand, it stimulates the development of social skills, the ability to communicate coherently, the quality of written ideas presentation, allowing autonomy and creativity. Thus, students and teachers have numerous resources that facilitate the task of preparing classes and carrying out research work, with the possibility for students to access information networks from all over the world during the academic year, regardless the geographical place in which they study, expanding their view of the world and their ability to communicate with people from other cultures, interests and languages. Teachers training in new technologies allows each teacher to perceive, through their own reality, interests and expectations, how technologies can be useful. The effective use of technology by students involves, first, a technology assimilation by teachers. After all, if those who introduce computers in universities do so without paying attention to teachers, the use that students make of them is little quality and use. In order to achieve positive effects, it is essential to consider initial intensive training and ongoing support, starting with teachers who will be able to encourage their students. It is expected that, in this century, teacher will be the one who helps individuals and group development and that he will know how to work with the instruments that culture is indicating as representative of civilized ways of living and thinking, specific to new times. For this, much research is still needed on new technologies, cognitive models, peer interactions and cooperative learning suited to technology-based models that guide teacher's training and his development. The need for knowledge galloping evolution makes it essential to train teachers to assume themselves as proactive knowledge management agents. This part results from the authors' personal experience, associated with a reflection on the teacher's challenges in the context of distance learning, which highlights that the key to the success in distance learning is centred on the teacher's performance and visibility. This teaching modality presents some challenges, including distance communication methods, collaborative learning and group size variations. However, compared to face-to-face teaching, there are some specific distance learning competences, in terms of technological infrastructures quality, such as the existence of broadband network systems, pedagogical resources and e-contents (the need to provide content in the form of didactic materials that facilitate a more autonomous learning process based on self-study), the type of evaluation articulated with the quality of participation in debates and the distance teacher role as moderator (putting this competence at the level of general communication for understanding the syllabus and helping to collaborate at a distance in the execution of the proposed works), considering that distance learning expands learning spaces and study opportunities for a significant segment of the world's population. About interactivity, we are facing changes in the teaching regime, where the student's role in the search for information was limited, to a teaching in which information is constantly adapted to the student. There are several typified modes of interaction in e-learning: student/computer interaction, student/content interaction, student/teacher interaction, student/student interaction. In this context, the teacher must play a leading role through permanent contact with students and encourage their motivation, involvement, commitment, trust and participation. On the other hand, teacher must be watchful and act in time, in order to prevent students from dropping out of courses due to feelings of isolation or the time of the course or various personal/professional requirements. In addition, teacher must pay attention to the cultural difference, from different social environments and with different levels of student's experience. Currently, a challenge faced by teachers has been teaching at distance in course of 1st and 2nd cycles of university education, through the Zoom and Moodle environment due to the COVID-19 pandemic, whose work methodology that guides the activities is embodied in the spirit of collaboration and joint reflection based on a participatory and interactive discussion process that takes place in an asynchronous interface. Students' performance in an online activity depends a lot on the attitude of the mediator, in stimulating creativity and research. The possibilities for adopting these postures were expanded through digital technologies and implemented in the tools available on

the Zoom and Moodle platforms. Currently, a challenge that teachers are facing is the realization of online courses through the Moodle environment, whose work methodology guiding the activities is embodied in the spirit of collaboration, in joint reflection, from a process of participatory discussion and interactive, which operates on the synchronous and asynchronous interfaces. Some studies show that there are several difficulties and attitudes taken by teachers in online courses. Pallof and Pratt (1999) highlight the group size, the use of time online, the adaptation to asynchronous communication and the construction of a learning community as indispensable. Due to the characteristics of online teaching, variations in the number of students influence and are directly linked to the quality and quantity of work, interactions, the participation of each student in the group and contacts management in online classroom. It is difficult for teachers to develop classes with large groups, which requires the work of tutors with the same class, in a way that guarantees collaboration in debates, feedback and synthesis. The different modes of communication available in the distance environment, synchronous and asynchronous, requires teacher to be able to communicate constructively and attentively, particularly with students, without regular presence in forums and discussion groups, giving them enough time to respond to messages, developing questionnaires and debate techniques (distance learning tools). This situation is minimized in synchronous communication, which, unlike asynchronous, is dependent on a fixed schedule, being closer to a classroom. Teacher has to keep in mind the rules of social coexistence specific to communication in a distance environment, trying to maximize the "human" component of computer-mediated communication: mobilizing skills in different learning modalities (self-learning, collaborative learning and team learning), encouraging all students to contribute to the discussion of the available contents and guiding them in the management of the available information. For this reason, one of the main challenges of teaching in e-learning is the adoption by teachers of a constructive and encouraging attitude, so that students feel stimulated and can develop curiosity, critical thinking, the capacity for initiative, participation and self-motivation. E-learning is a form of online education that encompasses a set of applications and processes, such as computer-based learning and virtual classrooms and includes the provision of program contents via internet and interactive TV. Furthermore, it should always encourage a relationship of sharing and cooperation with students, ensuring frequent communication between all, as well as encouraging students to have a spirit group which is particularly important in this type of learning context. Teacher's action is fundamental for the creation of a sense of community, building and maintaining a collective learning environment, and it is through this that e-learning takes place. It is intended to mobilize skills in different learning modalities: self-learning, collaborative learning and team learning; encourage all students to contribute to the discussion of the available contents, guiding them in their most appropriate management to deal with information. Some of the challenges of e-learning teaching are the constant adoption by teachers of a constructive, collaborative and encouraging attitude, so that students feel stimulated and develop curiosity, critical thinking, initiative, participation and self-motivation. E-learning systems should include tested contents, assessment whenever possible through forums, choice through interactive contents, interest information to the student and sound and image systems for asynchronous and synchronous communication. In this type of learning methodology, teacher started to conceive and design teaching activities, such as: pedagogical resources or pedagogical e-tools and e-contents, due to the need to make the contents available in the form of didactic materials that facilitate a process of autonomous learning, based on self-study, in order to use the technological resources available in distance environments and also the possibility of synchronous interactive classes - videoconference, audio, chat (virtual written and oral conversation rooms) and asynchronous - forums, email, discussion groups. The group brings many benefits to learning, such as the diversification of possibilities for student-student, student-contents, student-teacher interaction, sharing information and construction the

individual and collective knowledge. Learning with the use of technologies, through the e-learning process, generates the possibility for the student to become a manager of his own knowledge, preferably supported through a process of integration between classroom teaching and distance learning, which is referred by b-learning. E-learning teaching allows students to progress at their own time with access to up-to-date and extensive contents, contact with experts from various areas, and learn anywhere and anytime. However, it also requires computer skills, self-motivation and self-discipline and, in terms of challenges from distance learning, they are mainly developed around the emergence of the group, supported by computer-mediated communication. This factor introduces profound changes in relation to structuring aspects of conventional distance learning. Learning with the use of technologies, through e-learning, generates the possibility for the student to manage his time, be a manager of his own knowledge and have an active and constantly updated continuous training. E-learning is, more and more, the solution for the development of competences. It began to be developed with the aim of teaching a university character and, nowadays, it is also a solution for companies that want to remain competitive. In the current context of continuous changes, training of individuals has become an asset for companies, requiring a process of permanent learning. Student motivation is seen as a critical factor in the occurrence of dropouts and a well-designed and explicit learning contract can be an important contribution to reducing this worrying problem in teaching, not only in e-learning, but in teaching in general. Around the world, many institutions are already involved in distance learning programs. Tele-teaching (distance learning) via internet is already an unquestionable reality. Although there are difficulties to overcome, most teachers consider that opportunities are much greater than adversities. This is because the need for preparation leads to an improvement in class performance and greater empathy for students. These challenges become opportunities to teach a wide audience, thus increasing teacher's motivation, participation of students from different social, economic, cultural backgrounds and with different levels of experience. The traditional means of disseminating knowledge, face-to-face teaching, such as books and classrooms, have been changed with the emergence of interactive technologies. Teachers and students began to use tools such as internet, which revolutionized electronic teaching systems such as e-learning, e-mail and audioconferencing based on videoconferencing. Teacher's action is fundamental for creation of a sense of community, building and maintaining a collective learning environment, through which e-learning learning takes place. It is intended to mobilize skills in different types of learning: self-learning, collaborative learning and team learning and encourage all students to contribute to the discussion of the available contents, guiding them in the most appropriate management to deal with information. With the emergence of sophisticated interactive technologies, teachers and students began to use tools such as the internet (World Wide Web, which is increasingly a complete multimedia system, allowing multiple interactions, being a preferred medium for teaching/ learning), email and videoconferencing-based audio conferencing. In this type of learning methodology, teacher started to conceive and design teaching activities, such as: pedagogical resources or pedagogical e-tools and e-contents, due to the need to make the contents available in the form of didactic materials that facilitate a process autonomous learning process, based on self-study, in order to use the technological resources available in the online environment, asserting itself as a credible alternative also for the possibility of synchronous interactive classes - videoconference, audio, chat (virtual written conversation rooms and oral) and asynchronous - forums, email, discussion groups. In practice, during distance classes, students should be encouraged to develop activities in which they are active subjects of the process, interacting with the rest of the group, and they should be motivated by teachers to interact with colleagues through technological resources such as forums, activities in groups, chats, exchange of e-mails building knowledge, for example, in a different way from face-to-face teaching.

The fact that e-learning requires students to have a higher level of motivation and learning autonomy in relation to face-to-face training, promotes innovation in training processes, stimulates creation of multimedia contents, allows the creation of learning communities and expands the geographic coverage of training. However, it can never be used as a second-choice resource, as it is only advantageous if it allows good pedagogical results to be obtained for the student, who is the main recipient of knowledge. Teacher should be aware that must be the promoter of debate for the success of an online course, must be a promoter of debate, critical thinking and the student's autonomy feeling in learning. On the other hand, he must dialogue, negotiate and collaborate in order to contribute to the development of the interaction of interpersonal relationships, creating conditions for the circulation of knowledge. Teaching in higher education is characterized by the understanding that the teacher develops knowledge in a selective, critical way, seeking to adapt it to the needs and realities of their students, at the same time teacher needs to learn how to work in a new model that, alone, he cannot develop in its complexity. In this way, it becomes essential to conceive a teacher who works at this level, as the one who not only transmits knowledge, but also produces it. An efficient and effective teacher is critical, innovative, creative and knowledgeable about tools that provide better teaching and learning, understanding and taking advantage of face-to-face practices and new practices with technological tools. Regarding the process to be carried out in the face-to-face context and in the virtual context, there are large differences and the transition from one form to another is not easy for many teachers. The problem of changing teacher's role in this teaching-learning context lies in the pedagogical area (specifically teacher's role as an educational facilitator). Teacher must guide his students, be an educational mediator, in order to be able to collaboratively lead debates and develop critical principles coherent with the classroom context. Its action in the social area is also important, in the sense of establishing a friendly social environment, promoting human relations and valuing the contribution of students. Finally, in the technical area (which aims to facilitate the use of technology to enhance student confidence). Thus, in the new context of distance teaching-learning, teacher must encourage students participation, suggest group debates, virtual meeting activities, not play the role of pedagogical authoritarian so as not to interfere in the teaching-learning process, be always objective in their contributions, develop questions and activities that lead students to new experiences, ask students questions giving deadlines for them to respond, recognize students who do not participate in debates but are virtually present, encourage students to build a virtual community, praising and encouraging participation in forums. There is a need to promote teachers training to work in online projects, that is, in virtual education environments. Since it is facing a new way of thinking and doing, and where the population that opts for distance learning, generally, because they are older and have a profession, is more critical for the teacher quality. Teacher, therefore, needs to be a community leader and advisor, collaborative in the construction of knowledge and the pedagogical project as an integral part of its realization. Online teacher must know teaching context in which there is a physical separation between students and mediated by the use of technologies, because teacher must recognize this change and have to work with the potential of the environment and adapt it to the limits of their instructional approach. Thus, teacher needs to explore alternative teaching strategies contextualized in the distance learning environment, which should seek to reduce interpersonal distance, promote interaction and increase feedback, ensuring message transfer and learning. In view of internet use expansion in education, whether exclusively at a distance or in a mixed modality (in person and at distance), it becomes increasingly necessary to understand the teachers role in virtual contexts and the establishment of skills and abilities for their training, in order to guarantee that they are teaching and learning in the context of online education, without necessarily having to import European or North American packages that live with realities and needs far from those experienced in Portugal.

Teacher continues to guide students' learning, help to clarify doubts, identify difficulties and, at same time, learn to guide them in the formation of learning communities capable of developing joint projects and developing collaborative learning. In this way, interaction with students is not limited to personal contact, as a new relationship arises motivated by new information and communication resources. Teacher at distance, according to students' feedback, should propose topics of interest related to the subjects to be debated, providing moments of interaction that promote the learning process and the acquisition of new knowledge. Videoconferences, chat, asynchronous activities and other specificities of distance education, imposed on teacher a variety of didactic activities that required a new attitude, in order to overcome the transition from the face-to-face classroom to the virtual classroom. This new attitude involves differentiated activities, since "it is already difficult to maintain motivation in face-to-face teaching, it is much more in virtual one, if we do not involve students in participatory processes that inspire confidence" (Moran, 2004). In fact, one of the basic characteristics that constitute the work of a teacher is time and in modern society the lack of time makes difficult the planning and innovation effort, since reflection and debates are vital for professional improvement and development, especially in change situations. The more intense use of technological means of information and communication makes teaching more complex and requires the segmentation of the act of teaching into multiple tasks. Thus, the teaching functions become part of a planning and execution process divided in space and time, where the functions of selecting, organizing and transmitting knowledge exercised in face-to-face teaching correspond to online activities, of preparation and authorship of courses and texts that form the basis of pedagogical materials presented in different media (computers, audio, video) and the role of guidance and advice in the learning process is now exercised not in personal and collective contact in the classroom, but in distance tutoring activities, mediated through various accessible means. In addition, follow-up functions, monitoring of a support centre, resources and activities related to evaluation. With these functions, administration tasks, planning and organization of the process as a whole, from initial planning to the distribution of materials, to the evaluation of student performance. Most of these functions are part of the daily work of the face-to-face teacher, but they are intuitively organized, working with small groups of students. The fact that distance education requires new skills from the teacher in the way of acting, in the teaching-learning process at a distance, has motivated teachers to review concepts and teaching practices carried out in face-to-face teaching. Technological competence is essential for the teacher to be able to act with aptitude in the virtual environment full of technological resources. From activities carried out by the teacher in conventional education, one part stops, while the other changes. The teacher continues to guide students' learning, helping to clarify doubts, identify difficulties, while learning how to guide them in the formation of learning communities capable of developing projects together, developing collaborative learning. In this way, interaction with students is not limited to personal contact, emerging a new relationship motivated by new information and communication resources. Teacher at distance, according to the students' feedback, should propose topics of interest related to the subject to be debated, providing moments of interaction that promote the learning process and the acquisition of new knowledge. Currently, one of the problems faced by teachers in universities is the lack of commitment of students in relation to the subjects, since most of them do not participate in classes and do not show great interest. One of the teacher's goals is to encourage students to learn and have the autonomy to select the information relevant to their action. One of the attempts to achieve these objectives has been the use of computer resources as a mediator of the teaching-learning process. The fact that distance education requires new skills from the teacher in the way of acting in this type of teaching-learning process has motivated teachers to review concepts and teaching practices carried out in face-to-face teaching.

We approach the technologies as fundamental pedagogical tools, due to their ability to transmit information and allow communication between people through text, video and images on an interactive platform. The World Wide Web, in the e-learning teaching/learning process, allows people to confront their ideas, doubts and knowledge, and to build learning communities. The most recent form of distance learning, called e-learning, is increasingly successful in higher education, providing the possibility of training directed to the content's requirements, as well as personalized teaching where the student manages his time with permanent availability and handling facility. E-learning is based on the transfer of knowledge, valuing opportunities offered by an environment favourable to innovation, models focused on collaborative learning, etc. The internet has accentuated new ways of acquiring knowledge and increasing the demotivation of students in the face of traditional learning contexts in higher education. E-learning began to be developed with a merely academic purpose of a university nature, but, at present, it is a solution for a large number of companies due to its advantage of the convenience of the system and higher level of competitiveness, responding to the demands of the market, being a self-programmed learning. Teachers must adopt a constructive, collaborative and encouraging attitude, so that students feel stimulated and develop curiosity, critical thinking, initiative, participation and self-motivation. In this teaching/learning modality it is very important for students to have an attitude of self-esteem and self-confidence necessary to learn on their own. It is difficult to motivate students to study and so it is necessary to meet the real needs of students. E-learning allows monitoring students' level of motivation and satisfaction with the learning they are doing. One obstacle to motivation identified by students is the volume of work and content that puts effective learning aside. The absence of immediate objectives does not promote the reflection and management of students' efforts. In this way, it becomes easy to ignore the negative consequences of not completing the planned activities. As each student has his/her preferences and learning requirements, e-learning and blended-learning (b-learning) are strategies adopted by many universities, because they combine activities based on problem solving, face-to-face classes, synchronous and asynchronous events. Thus, the learning context becomes more flexible, allowing students to correspond to work in any physical space and time. Teacher's role is fundamental, in the sense of maintaining an affective connection with students and the course, maintaining the motivation and satisfaction for the activities. Teacher must play a leading role through permanent contact with students and ensure that their motivation, involvement, commitment, trust and participation remain high and, if necessary, act in a timely manner, in order to prevent students from dropping out of courses. due to a feeling of isolation, maladjustment to the rhythm of the course or other diverse demands of a personal and professional nature. It should be noted that teacher must pay attention to the cultural difference, from different social environments and with different levels of experience of the students. Today there is a need for a common European virtual education and a common European diploma system. Virtual education was essentially situated at the national level and, currently, some transnational collaboration began to exist. There are already many consortia between specialist centres in the Netherlands, Finland and France, and there are also some virtual universities. Issues such as quality assurance, certification, international strategic alliances are widely discussed. In distance learning, the roles of teachers and the institutions are not called into question. What is changed is their function, leaving the teaching agents and becoming learning partners. In this way, personal contact is not devalued, but made more interesting. Around the world, many institutions are already involved in distance learning programs, tele-teaching (distance learning) via internet is already an unquestionable reality. Although there are difficulties to overcome, most teachers consider that opportunities are much higher than adversities. This is because, the need for preparation leads to an improvement in class performance and greater empathy for students. These challenges become opportunities to teach a wide audience, thus increasing teacher's motivation, students' participation from

different social, economic, cultural backgrounds and with different levels of experience. Traditional means of disseminating knowledge in face-to-face teaching, such as books and classrooms, have been changed with the emergence of interactive technologies. Teachers and students began to use tools such as the internet, which revolutionized electronic teaching systems such as e-learning, e-mail and audioconferencing based on videoconferencing. Teacher, when preparing distance and offline materials for each activity (programmes, readings to be researched, exercises, individual and group work, questions to be discussed), must consider the time required to carry out the activity and the deadline for the conclusion of the task. Main theories of distance education brought to pedagogy a new perception of the space and time dimension of learning. In conventional education, the synchronization required as an essential condition for carrying out the processes is resized when it is developed in non-face-to-face environments, especially after the introduction of the internet as a pedagogical medium. In distance education, the conception of space, in the sense of the physical dimension where the teaching-learning process takes place, requires a new perspective. It is the expanded classroom, taking on new forms and making knowledge available to distant places where knowledge is difficult to access. The new communication technologies, especially the networked computer, have brought a new way of understanding distance. The internet is increasingly becoming a familiar mean of supporting and structuring the new educational proposals. Distance education implies a revolution in current educational paradigms, as it presents several opportunities for universities to integrate and enrich teaching materials, providing new tools for interaction and communication between teacher and students. Higher education institutions, as we conceive them as geographically delimited spaces that have the function of training students, cannot and should not remain oblivious to the possibilities that emerge on the web. There is an urgent need to interact with digital technologies, creating other possibilities of access to knowledge that are enhanced by new digital technologies. Online education is a modality that consists in the exchange of information and the construction of knowledge by geographically distant students, not having face-to-face contact, but, nevertheless, with a gain due to the richness of the diversity of teachers and students inserted in different social and cultural spaces. New models of education are conceived from the different forms of communication and construction of existing knowledge. Instead of transmitting the “accumulated knowledge”, the means are made available to build knowledge through virtual communities. The more intense use of technological means of information and communication makes teaching more complex and requires the segmentation of the teaching act into multiple tasks. The functions of teachers become part of a planning and execution process divided in space and time: the functions of selecting, organizing and transmitting knowledge, exercised in face-to-face teaching, correspond to online activities, the preparation and authorship of courses and texts that constitute the basis of the pedagogical materials presented in different media such as audio, video, printed; the role of guiding and advising the learning process is now exercised, no longer through personal and collective classroom contacts or individual assistance, but in distance learning activities, in general, individualized, mediated through various accessible means. Added to this, are the follow-up and monitoring functions of the support centre and resources and activities related to the evaluation. Added to these functions are tasks of administration, planning and organization of the process as a whole, from initial planning to the distribution of materials to the evaluation of student performance. Most of the functions are part of the daily work of the face-to-face teacher, but they are organized in an intuitive way and working with small groups of students. With the spread of sophisticated interactive technologies, teachers and students began to use tools such as the internet (World Wide Web, which is increasingly a complete multimedia system, allowing multiple interactions, being a preferred medium for teaching/ learning), email and videoconferencing-based audio conferencing. In this type of learning methodology, teacher started to conceive and design teaching activities such as

pedagogical resources or pedagogical e-tools and e-contents, due to the need to make the contents available in the form of didactic materials that facilitate a learning process more autonomous, based on self-study, in order to use the technological resources available in the remote environment. On the other hand, it is also worth mentioning the possibility of teaching synchronous interactive classes - videoconference, audio, chat (virtual written and oral conversation rooms) and asynchronous - forums, e-mail, debate groups. In distance education, specifically in the online modality, there are several limitations inherent to the work, using digital and telematic support to develop the relationship between teacher and students. The relationships that are constituted in distance courses should not intend to repeat, in an integral way, the richness of an interpersonal relationship in the face-to-face situation. The visualization of gestures, expressions, looks and postures as a whole are not possible to be experienced in such a complete way in computer-mediated relationships, even because it does not intend to faithfully reproduce these details of the complexity of human relationships. However, it is possible to establish significant affective bonds between teacher and students of distance courses, thus promoting the process of knowledge construction. Specifically in the teaching and learning processes, such gains inherent in teacher-student relationship constitute an enormous baggage of resources that underpins and structures teaching and learning. Therefore, the substantial experience of this practice is extremely important to give a new meaning to it, respecting the differences between the different contexts and going beyond the transposition of traditional education to the computer screen. The traditional teacher's relationship must be reconstructed to account for the essential interactions necessary for the constitution of an environment conducive to attitudes and behaviours for the construction of learning. Teacher must not only be knowledgeable about the course (task performer), but also a builder and mediator of relevant possibilities and relationships for knowledge construction. The development of the teachers' monitoring work is based on various strategies of a technical-pedagogical nature, based on their theoretical and instrumental knowledge, and on their reflection processes adjusted to the educational reality. Teachers in distance courses are faced with the challenge of awakening in students the desire to belong, to share, to produce collectively, ceasing to be mere receptors to assume themselves as interactors, participating, transforming and dynamizing their process of construction of dialogue with different peers located in the same geographic space or not. The teacher must be attentive to the class profile, carrying out an assessment in order to investigate the students' real development level, that is, the knowledge they already have about the themes that make up each curricular unit, as well as the level of interaction with the technologies used in the course. These data will support pedagogical interventions, ensuring the achievement of teachers and students' objectives and subjects of the teaching and learning process. The daily monitoring of students promotes the identification of aspects that should be taken up and discussed, thus supporting the reflection of the pedagogical practice of teachers. This monitoring process requires the mediation of synchronous technologies, such as chat, promoting direct communication between teacher and student, to maintain unity and cohesion with the course proposal, avoiding a disarticulation regarding the information inherent to the objectives, to the cognitive aspects, methodological and evaluative, which can compromise its quality. Most distance learning environments have the profile tool, which provides space to include a photo and a short presentation. The different forms of interaction possible to be established in an online course can only be constructed with the participation of a teacher as a critical subject of the whole process and being a motivating agent and mediator of collective constructions. The fact that the development of educational practices takes place at a distance does not imply a decrease in responsibilities or charges for teacher. On the contrary, the task is extensive and quite laborious for everyone involved. Thus, if one reflects on the importance of the relationship between students, in this context, one obtains the constant improvement of the pedagogical practice, emphasizing that the failure to

take advantage of technological possibilities to aid learning, or as, simply, another space for the transmission of information, means neglecting an important potential of available resources to be experimented and evaluated. Evolution implies the need for change and only organizations that adapt to the environment can fully respond to future challenges.

2. FINAL CONSIDERATIONS

Collaborative distance teaching is a form of collaborative teaching that makes use of technologies, taking advantage of their resources, potential and advantages. In the same way that distance education devices promote flexible collaboration and distance between students, they can also promote collaboration between teachers. The development and use of technologies in the various areas of social activity and, above all, in the university, imposes a challenge on teachers and programmers of educational products, and it is therefore necessary that everyone understands, in particular teachers, that difference is not in the use of new technologies, but in the way they can be used to build knowledge. For this, it is necessary to provide teachers with adequate training, which allows them to deeply understand the technological environment, so that they feel the necessary security for the good performance of an important mission entrusted to them (Coutinho, 2007). In a traditional university context, it is already becoming apparent that, in addition to the role of "guardians of knowledge" that has traditionally been reserved for them, universities are beginning to assume other roles within their areas of competence. The perspective of opening the university to all citizens interested in "lifelong training" (Lagarto, 2002) begins to become a reality. "The university, in addition to the initial training of its students" will also be able to "provide complementary training that will enable them to face the changes in the world". The expressions education, teaching and distance learning refer to the teaching/learning process centred on computer-mediated communication and to another field of research and professional action with a new configuration of teaching practice emerging in contemporary society, in which the meaning is constructed and shared, collaboratively and communicatively, forming true virtual learning communities.

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ENTREPRENEURSHIP EDUCATION: CORE, CONTEXT AND INVOLVEMENT OF THE MOROCCAN SECONDARY EDUCATION SYSTEM

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ABSTRACT
Entrepreneurship education is a goal shared by the educational policies of many nations around the world. It has essential role in evolving eco-system that enhance innovation (European Union, 2006). This paper aims to analyze the degree of involvement of the Moroccan education system in this new trend. This article, therefore, will be questioning first the purposes, issues and obstacles related to entrepreneurship education that requires conceptual clarification. This diagnosis will be the result of documentary analyses based on the exploration of texts and reports advocating the early introduction of entrepreneurship in initial education. All the reflections carried out aim at outlining a basis for research perspectives on this education in the Moroccan context.
Keywords: *Entrepreneurship, Education, Entrepreneurship education, Morocco*

1. INTRODUCTION

The crisis of the welfare state, unable to ensure full employment, nor to guarantee the fair redistribution of wealth, deeply affects the economies and societies of post-industrial countries. Privatization and globalization of the economy inevitably lead to a transformation of the labor market in an industrial society in decline, gradually giving way to a society of knowledge, services and new technologies (Champy-Remoussenard and Starck, 2018). To take a concrete example from the United States, the AltSchool, the school of Silicon Valley, places technology at the center of its teaching. The educational project of this school is to train young people capable of adapting to changes in society and not just of accumulating knowledge. The children associated with the educational project learn to solve problems while developing social skills.
"Solving problems" is today's challenge. If, in view of the United States, alternative schools are multiplying at high speed, this is spreading to other regions of the world such as Peru, for example, where Innova School combines several forms of instruction or “blended learning” (e-learning, private lessons, group workshop, etc.) in modular and adaptable premises designed by world-famous architects. Promotional and highly inciting discourses (Pepin, 2015; Champy-Remoussenard, 2012) that support the introduction of entrepreneurship education at all levels of education, from primary to university, are developing at the international level (OECD, UNESCO, EC). It should be mentioned, however, that these discourses are rarely questioned. The policies, issues and practices related to entrepreneurship education are, unlike the sciences of engineering and economics and management, under-studied by the sciences of education, particularly in French-speaking countries: "it is almost virgin territory in terms of investigation and reflection conducted from the point of view educational science" (Champy-Remoussenard and Starck, 2018). Entrepreneurship education is far from unanimous among researchers and even less among educational actors. A discord translated by a terminological vagueness and diversity of practices and of devices.

The world is changing and this change is an incredible opportunity for Africa. We note that technologies take over all discoveries, markets are not no longer national or international but tending to become global, traditional social and political structures are undermined by independent institutional forces such as the universities, administration, companies, and above all we are faced with one of the most important sociological variables: "The knowledge society", knowledge is becoming an essential resource which will partly modify the very nature of several social fields, including education. Technology, global markets and knowledge require new ideas to cope with these constant and rapid changes. It's about creativity. “Creativity is the ability to produce a production that is both new and adapted to the context/field in which it occurs”. (Lubart, Mouchiroud, Tordjman, & Zenasni, 2003; Sternberg & Lubart, 1995). Our research is articulated around three questions: what is entrepreneurship education? What legitimizes the twinning of education and entrepreneurship? Through what policies and practices do they manifest themselves in the different education systems? What place does Moroccan school education give to this global trend in education? To what extent does the teaching of French in Moroccan schools contribute to the initiation to entrepreneurship? To answer these questions, this article tries to explain the phenomenon of entrepreneurship education its evolution objectives and issues. And to illustrate the theoretical remarks, some examples of the implementation of devices and practices oriented towards the development of the entrepreneurial education in the French-speaking world (Quebec, France, and Côte d'Ivoire), the paper also tries to examine the possible manifestations of entrepreneurship education in Moroccan school education through a curricular and didactic approach relating to the official texts on the disciplinary programs of French in middle and high school.

2. ENTREPRENEURSHIP EDUCATION: DEFINITIONS, OBJECTIVES AND ISSUES

Entrepreneurial education in the university context dates back to the middle of the last century. The first course on entrepreneurship dates back to 1947 at Harvard University. Only half a century later did this phenomenon obtain a more usual focus (Alberti et al., 2004). Entrepreneurship courses are taught at almost every American Assembly of College Schools of Business (AACSB) accepted institution, at over 1400 postsecondary schools. At the level of school education (primary and secondary), it is difficult to date exactly the preludes of the idea advocating the introduction of entrepreneurship at school. However, many researchers agree to consider the years 1980/1990 (with the Balle report (1989) for the OECD) as the birth date of concerns relating to this question (Champy-Remoussnard and Starck; 2018). Currently, entrepreneurship education is present in the educational systems of most countries: European Union, Sweden, Finland, Canada, Brazil, Australia, and Japan... (Pepin, 2011; Pépin, 2015).

2.1. What is Entrepreneurship education?

The ambiguity surrounding the concept of entrepreneurship complicates its introduction into the education of young people. Indeed, the adoption of new elements within a teaching program is based on stabilized scientific knowledge, and then they are raised as a priority by political leaders, through projects to reform educational programs. Subsequently, they will be gradually deployed on teaching aids, such as textbooks and teaching materials, and will be the subject of compulsory or optional courses, or even courses of specialization. Yet there is still no consensus in the literature on the definition of entrepreneurship: is it a concept or a process that leads to the creation of an organization? Is it an economic phenomenon (impact of a new business on economy), psychological (profile of an entrepreneur) or sociological (influence of society on entrepreneurial intention)[1]? How to teach a field that is still in motion and whose understanding varies according to time and context.

[1] Mathias Pepin, (2011), « L’entrepreneuriat en milieu scolaire : de quoi s’agit-il ? » McGill, *Journal of education*. Vol 46, n°2

A controversy was observed in the use of expressions like entrepreneurship education versus enterprise education (Hynes, 1996; Garavan and O'Cinneide, 1994a, b.). Another perception is in the work of Jones and English (2004) who have permanently substituted entrepreneurship education with entrepreneurial education; and defining it as "a process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge and skills to act on them" (Jones and English, 2004, p. 2). In the French-speaking context, Champy-Remoussenard and Pepin (2017) identify, without being exhaustive, the following terms: entrepreneurship in schools, entrepreneurial education, educational entrepreneurship, education in entrepreneurship, entrepreneurial culture among young people, youth entrepreneurship, the development of the spirit of entrepreneurship, learning to undertake or even pedagogy with entrepreneurial value. Outside the United States, where only the expression "entrepreneurship education" prevails, the Anglo-Saxon area presents the same terminological variety: entrepreneurship education, small business education, enterprise education, entrepreneurial education, enterprising education, education about/for/ through enterprise, internal/external enterprise…(Ibid). For Federica Minichiello (2014) "entrepreneurship education aims to develop two attitudes: the spirit of initiative (or entrepreneurship) and the spirit of enterprise. The first, linked to taking the initiative, is dissociated from the intention to create a business. The second involves skills directly related to the company and the figure of the entrepreneur". For Mathias Pepin (2011), "the entrepreneurial project, as a pedagogical practice making it possible to reach the educational goals of the entrepreneurial approach in education (education enterprise), can be understood as a concerted initiative oriented towards society and supported by a group of students, in response to the identification of a need perceived in the environment (immediate or not), by the impetus of a project which is addressed to a target audience other than the teacher and which allows students to create new arrangements of resources (internal and external) available, with a view to personal and cognitive development". Entrepreneurship education is study of source of opportunities and process of discovery (Shane & venkataraman,2000;NKC,2008;Timmons,1989), in which an individual endeavors ability of creativity, risk taking and turn their ideas into action (Communication Commission 2006; European commission 2003;oxford dictionary 2005; and Jones and English 2004). Some researchers have pointed out that entrepreneurship education is training for uncertain future (Kratko, 1997), which provides the capabilities of venture creation (Kirby, 2004; Garavan and O'Cinneide, 1994). But the focus of most of the reviewed literatures on entrepreneurship education is on: fostering entrepreneurial attitude, skill, managerial attributes (Co and Mitchell, 2006; Henry et al., 2005a; Galloway et al., 2005; Hytti and O'Gorman, 2004; Kirby, 2004; Bechard and Toulouse, 1998; Gibb, 1993 as cited in Fank et al. 2005; Hills, 1988).

2.2. Objectives of Entrepreneurship education

Many are the mutations that have upset the current world on the economic and social levels; these changes have generated new needs on the individual, the economy and society. In this context, entrepreneurship becomes the main engine of economic growth and the infallible weapon against the flow of unemployment. Entrepreneurship education cover activities aspiring to support entrepreneurial mindsets, way of thinking and skills include a variety of aspects like idea generation, start-up and innovation (Fayolle, 2009). The concept used to designate all the content and practices concerned are grouped into two large groups which refer to two areas of objectives: developing the spirit of enterprise, linked to a narrow vision of entrepreneurship, and training future entrepreneurs as a part of a more large conception (Champy-Remoussenard et Starck, 2018; Frétigné, 2017; Pépin, 2011). This duality, present both in the French-speaking context and in its English-speaking counterpart, most teaching programs and practices pursue, to different proportions depending on the country and the stage of schooling, the two purposes of entrepreneurial education, which depend on the two conceptions of entrepreneurship cited

above. According to Ball (1989), there are five reasons to justify the introduction of entrepreneurship education in basic education: 1) the need to develop in young people the essential capacities to deal with a constantly changing environment; 2) the issue of youth employment; 3) the major transformations of the labor market which call for more flexibility in career paths; 4) the changes inherent in the institutions themselves which require greater responsibility, initiative and creativity on the part of individuals; and 5) the quality of education and its relevance in relation to the economy. According to Pepin (2011), entrepreneurial education has three possible and distinct purposes. The first is to help children understand what entrepreneurship is, particularly through the process, tools and attitudes that lead to the creation and management of a business. In this context, entrepreneurship becomes an "object of learning». This level of learning is present in university courses since it assumes that students already have many prerequisites and above all training in a profession in which the entrepreneurial project will take shape. The second possible purpose is which is to ensure that students become entrepreneurs. It is then a question of accentuating the entrepreneurial intention, of inspiring them through the success stories then of supporting them in order to make them pass from the idea to the business project. The third possible purpose is to develop the entrepreneurial spirit, that is to say the set of attitudes and behaviors which make it possible to "become enterprising". This posture allows you to succeed as an entrepreneur, but also in professional and personal life. From this perspective, entrepreneurship is rather a “learning tool”.

2.3. Issues and challenges of Entrepreneurship education

The implementation of entrepreneurship education at school, at the disciplinary, interdisciplinary or even extra-disciplinary level, sometimes encounters obstacles. The first is linked to the nature of the content to be transmitted and the skills to be developed. Opinions diverge because of the lack of a scholarly knowledge formed and stabilized on the basis of which the didactic transposition of the knowledge to be taught takes place (Pepin, 2011). Even entrepreneurial qualities and attitudes, the characteristics specific to entrepreneurs/entrepreneurs, are not unanimously accepted by researchers; several lists and repositories of the distinctive traits of enterprising people are proposed (Pepin, 2005). In addition to this difficulty of an epistemic/epistemological nature, there is a difficulty relating to the training of teachers. Supposed to take charge of this education, the teachers, trained following a strict disciplinary logic and evolving in fixed structures that are not very open to their educational and socio-economic environment, do not often have the necessary skills and the means required to engage in such projects. Some actors in the spheres of the economy and business even believe that teachers, traditionally recalcitrant in the face of any novelty and ideologically conservative, are not qualified to lead projects related to education to undertake it; they are considered “unable to educate students in the entrepreneurial spirit because they are civil servants who have chosen job security rather than entering a world of risk in order to set up a new business (Tanguy, 2016). Moreover, the resistance and representations of these teachers and other school actors in terms of entrepreneurship education could constitute a real obstacle to the implementation of entrepreneurial education in schools. Tanguy (2016) clearly criticizes the lost autonomy of the school which is under the tutelage of the economy and the company. the school institution is called from the years 70/80 to transmit attitudes and dispositions in line with employers' expectations, to the detriment of the training of the skilled worker, the enlightened citizen and the cultured individual (Tanguy, 2016 In Guyonvarch, 2018). And thus sees its mission considerably transformed being governed by essentially economic purposes. Gradually the school abandons its original and secular project, to train the citizen, to devote itself to its new mission: to train the worker.

3. ENTREPRENEURSHIP EDUCATION IN THE FRENCH SPEAKING WORLD

Since the early 2000s, developing the entrepreneurial spirit has been a priority for the European Union. Considered an essential skill for all citizens in today's society (Gapiham, 2017). Echoing its European orientations, France launches awareness/information campaigns since the first years of the new century and sets up systems aimed at promoting and implementing the entrepreneurial approach at the School. It should be noted that the materialization of this European, even global, project differs from one country to another according to the interactions of the transnational entrepreneurial culture and local cultures (Champy-Remoussenard; 2012).

3.1. France

Like other countries in Europe or America, entrepreneurship education in France first germinates in higher education; particularly in management, business or engineering schools before extend to other cycles of the education system(Champy-Remoussenard; 2012). It is driven by the need to guarantee a better match between the training offer and the business world and to awaken the entrepreneurial potential of students considered as “grains of entrepreneurs”. Awareness/training in the entrepreneurial spirit then takes place in secondary school before conquering the primary cycle according to different objectives, systems and practices. Thus, and according to the data provided by the European Commission report (2016), the approach adopted at the level of primary education is a transdisciplinary approach, in which the objectives of entrepreneurship education are expressed in a transverse and horizontal in different materials. On the other hand, this approach is supported in lower secondary education: as a separate compulsory subject or as part of one or more compulsory subjects or as an optional subject or as part of one or more optional subjects. In high school, it is optional (as a separate subject or combined with other disciplines) in general education and compulsory in professional courses (ibid.). Apart from one-off awareness-raising activities (school-business awareness week, women's entrepreneurship awareness week) (Gapiham 2017), practices oriented towards the development of the entrepreneurial spirit are generally organized around two main actions:

- The realization of projects: integrated since college, this practical experience of entrepreneurship is one of the most widespread in the world. According to the report of the European Commission (2016), project implementation is: an educational experience in which the learner has the opportunity to generate ideas, identify a good idea and translate that idea into action. It should be a learner-led initiative, individually or as part of a small team. This activity should be based on learning by doing and produce a tangible result. This possibility offered to learners must enable them to acquire the skills, the confidence and the capacities necessary to detect opportunities, determine solutions and put their own ideas into practice.
- The creation of mini-enterprises: this is the second most widespread practice of entrepreneurship training at school. Supported by specialized organizations (associations, collectives, observatories, etc.), the creation and management of mini-enterprises are included in a project and problem-solving pedagogy in a collective framework geared towards strengthening the autonomy of learners and the development of qualities relating to initiative and risk-taking and self-confidence while ensuring exchanges between the school and the company through internships, consultations, supervision and partnerships. Coming from the United States “Junior Achievement”, and viable during a school year, this experience consists of creating and managing an activity in logic similar to that of small and medium-sized enterprises.

The organization of entrepreneurship competitions is another practice related to the creation of mini businesses and which offers students the opportunity to have another practical experience of entrepreneurship.

Very common in France, especially at the secondary education level, these competitions crown a year of effort by learners and constitute an annual opportunity to evaluate and reward the best projects (Champy-Remoussenard et Starck, 2018). Finally, it should be noted that, unlike other European countries (Greece, Estonia, Flemish Community of Belgium, etc.), the practice of mini-companies is not included in the official French programs and is registered in the framework of extracurricular activities. (Commission européenne, 2016).

3.2. Quebec

Contrary to France, entrepreneurship has been introduced into Quebec school programs since the recent curricular reform of 2001 within the framework of the "General areas of training" which include, in addition to "Orientation and Entrepreneurship", the domination attributed to educational entrepreneurship, “Health and well-being”, “Environment and Consumption”, “Media” and “Living together and Citizenship”. These areas, which do not obey a disciplinary logic/organization, constitute one part of the program; the traditional disciplines constitute the other. Their integration in the programs is subsidiary to the adoption of the competency-based approach in the formulation of the curriculum (Pepin, 2011). It is a set of cross-cutting issues responding to a social requirement and which transcend disciplines while putting them to work by promoting the mobilization, contextualization and transfer of disciplinary achievements in learning situations that go beyond the school framework and forge close links with the lives of learners and surrounding social practices (Pepin, 2014). In the case of “Orientation and entrepreneurship” (Thus is called entrepreneurship education in Quebec primary school programs), the affected intention is to “Offer the student educational situations allowing him to undertake and complete projects oriented towards self-realization and integration into society. » and this, according to three axes of development: self-awareness, of one's potential and its methods of actualization, appropriation of strategies linked to a project and Knowledge of the world of work, social roles, trades and professions (Ministry of Education of the Quebec,2006). In this perspective, Pepin considers that entrepreneurial education at the primary education level is not perceived as an object but rather as a teaching tool. In other words, it is "a particular way of organizing learning situations pedagogically" with a view to developing a certain number of dispositions and attitudes through the resolution of problem situations rooted in lived experience. It is a know-how, an interpersonal skills to cultivate and not a knowledge in the strict sense to acquire. On the other hand, in the context of post-secondary schooling, entrepreneurship is both a teaching tool and a learning object. The establishment of entrepreneurship education is supported by action programs and guides developed by specialists for teachers (Pepin, 2014). But given the vague and incomplete character of the political and institutional discourse, the actual practices are diverse and varied. However, in the Quebec context, Pepin (2014) mentions two types of practices with an entrepreneurial content: the entrepreneurial project and the school microenterprise, from which there is nothing to distinguish on a theoretical level except for the financial aspect absent in the projects. Researchers like (Hytti and O’Gorman, 2004 In Pepin, 2014) establish another typology of entrepreneurial activities: “masterful methods, computer simulations of business management, business visits, and the creation of effective micro-enterprises or even temporary work in companies. »

3.3. Cote d’ivoire

In the Ivorian education system, entrepreneurship education dates back to the 1990s. Integrated as a compulsory subject in the curricula, it is linked to a narrow conception of entrepreneurship and particularly concerns vocational education (Hillarion and Yeo, 2017). In 2009, a “school-business” partnership was set up by the government to ensure a better match between training and employment and facilitate the professional integration of graduates from these sectors

(Ibid). However, in recent years, and according to the Ivorian Minister of National Education, (practices relating to education in the entrepreneurial spirit are more in line with a broader vision of entrepreneurship: empowering learners, developing their autonomy and their spirit of initiative, develop their sense of innovation and creativity... Among the examples of entrepreneurial activity in a school context, the Minister cites: the development of an above-ground vegetable farming project in the schoolyard, the management of the school shop by the students, the creation and sale of a school newspaper and the creation of a poultry farm[2], Competitions are also organized to select and reward the best projects of the learners. Top project, initiated since 2015, is a competition open to all middle and high school students across the country. Its objective is "to develop the spirit of entrepreneurship among learners and to instill in them basic economic and financial notions". In 2016, Top School Project has the theme "Agro-business: Setting up a business plan for an above-ground cultivation project". In addition, the Minister wishes to benefit from "partnership of the International Organization of Conscious Entrepreneurial Community Schools (OIECEC) […] initiated at the Canada (Quebec) and adopted in several countries on five continents, [and which] implement an empowering and transforming educational approach". The objective of the ministry is to implement entrepreneurship education in the different levels of the school system, from preschool to higher education.

4. ENTREPRENEURSHIP EDUCATION IN MOROCCAN SCHOOL EDUCATION

Like other countries in the world, education for entrepreneurship first appeared in higher education with two trends that echo the evolution of the concept of "entrepreneurship" and global experiences "The first focuses on the technical skills of potential entrepreneurs. The second, more recent, focuses on the essential character traits of the individual entrepreneur. (Elouazzani Echchahdi et al., 2012). At the level of school education, and with the exception of vocational and technical education, it is this second movement, still in the embryonic state, which is taking hold at the level of secondary education, as shown by the institutional texts relating to recent educational reforms.

4.1. The National Charter for Education and Training (1999)

Developed by the Special Commission for Education and Training (COSEF) and published in 2000, The National Education and Training Charter (CNEF) is a founding text of the recent educational reform 2000-2009 initiated by the late Hassan II. It consists of two parts, the first sets out the fundamental principles of the Moroccan education system and the second details the reform entries named the renovation spaces. In this text, the school-business reconciliation and the opening of the school to its economic environment are mentioned many times. But it is always a question of qualification facilitating the integration into working life of learners who have taken a vocational training circuit at college or high school level. No reference is made to entrepreneurship education or the entrepreneurial spirit. The links between school and the world of business are mentioned many times (5 occurrences) but only in the context of vocational education and continuing education. Nevertheless, the purposes linked to it, are provided to be its exclusivity, are developed explicitly or expressed implicitly through the various clauses of the text. For example, the reform aims to "develop the capacity for self-learning and adaptation to the changing demands of working life".

4.2. The Strategic Vision of the reform (2015-2030)

The new reform is initiated following the results of the evaluation of the implementation of the CNEF (The National Charter for Education and Training) which revealed the persistence of many dysfunctions and failures (Bourqia; 2016).

[2] http://www.menci-educationentrepreneuriale.net/mot-duministre-de-leducation

The text of the Strategic Vision of the reform is drawn up by the Higher Council for Education, Training and Scientific Research (the CSEFRS). Its recommendations are articulated around four axes: equity, quality, emancipation of the individual and development of society and broken down into 23 levers. The text gives a special place to "education for": education in democratic values, citizenship and civics, gender equality, the environment, choice... which it is recommended to integrate in curricula, programs and resources didactics from primary to higher education. Entrepreneurship / entrepreneurship education is not included in this list. However, the text mentions “the spirit of entrepreneurship”, in certain writings. In Within the framework of the twentieth lever, devoted to “active involvement in the knowledge economy and society”, the Board of Governors asserts that it would be necessary to: Articulate teaching, internships and activities of application and immersion in real situations likely to promote the spirit of entrepreneurship; which requires training and apprenticeship sessions, especially at the level of secondary education qualifying during specific internships in the various fields of training (administration, economics, architecture, social professions. But if the text does not mention any specific entrepreneurial practice (project, mini-company, competition, etc.) to be implemented in the Moroccan education system like the other countries mentioned above, the fact remains that the measures advocated and the recommendations formulated insist in various places on general and transversal attitudes and skills. That should be developed among learners in order to “facilitate integration into social and professional life. » and to guarantee a better adaptation to the "mutations nationally and internationally». This involves, for example, developing: the spirit of initiative, the sense of collective work, autonomy, creativity, etc. On another level, it should be noted that an agreement was concluded between the Ministry of National Education and the Injaz Al-Maghrib association under which the regional education and training academies undertake to integrate the Injaz programs in the programs of the professional and technical baccalaureate, as well as the 5th and 6th years of the primary cycle (among the activities of discovery of the trades). In return, the association undertakes to provide training for beneficiaries and guarantee the necessary documents and teaching materials[3]. Vocational education in middle school, provided for by the Strategic Vision and implemented in college schools from the start of the 2015/2016 school year, is oriented towards the initiation of learners its sector in the exercise of certain trades directly related to its socio-economic environment: car repair, car body painting, art carpentry, wood and aluminum carpentry, building electricity, building ironwork, cutting and sewing… (Ministerial note, 107, October 2015). This course, designed to adjust college education to the needs of the labor market, seems intended for students in difficulty who do not have sufficient means to pursue education within the framework of general education. This training, carried out wisely, could contribute to increasing the autonomy and self-confidence of the latter by offering them the opportunity to assert themselves in areas of activity consistent with their center of interest. It could even constitute a springboard towards self-employment, if it gives itself the means to equip them with the knowledge and skills required. In doing so, it would be fully in line with education at entrepreneurship and entrepreneurship at the same time.

4.3. Educational projects and their place in the teaching and learning of the French language in Moroccan high and middle schools

Project-based pedagogy seeks to reconcile school and society: if the primary concern of the first pole is learning, that of the second is inexorably production. Nevertheless, it is time to marry the two objectives and put production at the heart of learning, and therefore produce to learn and learn to produce. In this sense, Anita Weber points out (1982:35) that “aimed at effective achievements, [the pedagogy of the project] gives meaning to school activities, comparable to that of social activities.

[3] (https://www.infomediaire.net/education-le-maroc-integrelentrepreneuriat-dans-ses-ecoles)

However, it should be emphasized that the aim of project-based teaching is the acquisition of skills and not the excellence of the product final. The teacher should not be obsessed with the final product and its perfection to the point of falling into the drift of overshoring. It is the resources installed along the way that matter most. In other words, we can manage to achieve a good production but without allowing the learner to develop his knowledge or conversely install several resources without being able to finalize the project. As part of the reforms of the Moroccan education system governed by the Strategic Vision 2015-2030 (measure 3, project 14), the Acting differently (*Agir autrement)* project is initiated by the Ministry of National Education and tested in three regional academies of Education and Training - (now AREF) - (AREF-Tangier/Tétouan for primary education; AREF-Fès-Meknes for college and AREF-Oriental for qualifying or high school education), before its generalization at the level of the Kingdom from the start of the school year school year 2017/2018. It is based on a number of observations, in particular the fossilization of teaching practices (focus on content, prevalence of teaching over learning, passivity of the learner) and the evolution of language didactics, to propose a renewal of teaching-learning at the level of didactic and pedagogical approaches and classroom practices with a view to move from a logic of transmission of knowledge to a logic of active and finalized construction of learning in phase with the experience of the learners, and practices that focus on knowledge or compartmentalized disciplinary skills to those that also develop transversal skills (Pedagogical guide, 1st year; 2016). In this perspective, the project insists on the need to promote learning by doing, on the autonomy of the learner and on collective work within the framework of a project and problem-solving approach closely linked to the immediate environment of the learner. these elements which, with others present implicitly in the documents relating to the project, are characteristic of the entrepreneurial approach in its broad sense as being a learning tool aimed at developing a certain number of qualities and aptitudes that can be mobilized to both in the learner's personal and professional life. However, the terms "entrepreneurship" or "enterprising" are not expressly mentioned in the texts relating to the project.

4.3.1. Teaching French in secondary education: implicit or explicit entrepreneurial approaches?

Despite this explicit absence of the entrepreneurial approach in the French programs at the secondary level, the fact remains that the teaching approaches adopted and the methodological approaches proposed present, if only on the theoretical level, certain characteristics of education for entrepreneurship: learning through action, the openness of the school to its environment and the logic of project and problem solving (Champy-Remoussenaerd, 2012). Indeed, the latest curricular revision adopts a competency-based approach founded on a constructivist conception of learning and requiring long-term planning of learning and leads the learner to select, organize and mobilize the required resources in adequacy with the target skill. This approach is operationalized by a task-based approach within the framework of the action perspective. The reform thus intends to bring about a change in the practices and postures making it possible to place the learner at the heart of the educational action and to make him the main actor in his learning. The programs emphasize the importance of increasing the autonomy of the learner and to develop a sense of initiative within the framework of transversal skills which transcend the different subjects of French and which seem to be common to all school subjects (methodological, strategic, cultural, communicative and technological skills). On the didactic level, the methodological approaches planned for the different learning areas arrange special moments for self-assessment, transfer and reaction (This particularly concerns the reading activity. It constitutes the last stage after observation/discovery, comprehension, construction of meaning and synthesis). It is a question of introducing the learner to reflexivity by leading him through grids to identify his successes and recognize his weaknesses.

The said grids, proposed by certain textbooks or established collectively by the class group, often describe the approach to be taken to carry out a task and/or the criteria to be respected in order to carry it out. By referring to it to respond to an instruction or to evaluate the product produced, the learner finds himself leading to reflect on the approach adopted and the cognitive process mobilized. Thereby, the autonomy of the learner will be reinforced through the development of learning to learn. Transfer refers to the reinvestment of acquired knowledge in new situations which requires creativity and adaptation. As for the reaction, it refers to the competence to position oneself in relation to any question related to the value system or by appealing to one's critical spirit.

4.3.2. The class project

Coming from active pedagogies and experiential approaches and Jean Dewey's "Learning by doing" (Reverdy; 2013), the class project is one of the key measures introduced into the secondary programs as part of the "Acting differently" project. . It is an activity in its own right with its own dedicated hourly volume. In close connection with the learning of each period (in middle school, the programs are organized into periods which are six in number with two periods per year), a project is spread over a semester and leads to the production of an observable and socializable product: writing a tale, producing a short and simple story, producing a diary of class, produce and perform a play, develop school correspondence, write a short story. By offering learners the opportunity to reuse and consolidate their achievements, these projects make it possible to finalize and contextualize learning while cultivating group spirit and leadership. They also help unleash the imagination of learners and sharpen their sense of creativity. For example, as part of the first period devoted to the study of media genres, learners are asked to produce a class newspaper. According to the teacher's guide (2nd year, 2016), this project should contribute to: openness to the world and communication with the outside world, consolidation of the values of cooperative work, document research and the production of various texts, the development of self-esteem... The approach proposed to achieve its objectives includes the following steps: negotiation of the project and formation of the groups, drafting of the media genres selected (the front page, the editorial, the poster, the interview, the news item) and the finalization of the project. (Choice of final layout, presentation of work and selection of texts to be retained, evaluation of the product). However, and contrary to the intentions displayed in the institutional texts and the secondary recommendations (manuals, teachers' guides), the implementation of the recent revision of the French curriculum contributes little to the training of enterprising learners showing attitudes and know-how related to taking initiative, creativity, team spirit... Various are the constraints that hinder the achievement of these objectives. The main obstacle is the rigidity of the school organization and the disciplinary structure which considerably reduce communication between the school disciplines and the openness of the establishment to its social and economic environment. Deficiencies in mastering the French language, a foreign language in the Moroccan context, constitute a real obstacle for creativity, innovation and autonomy. Indeed, deprived of the words necessary to express his ideas, the learner finds himself reduced to silence or completely dependent on his teacher or his classmates who, themselves, are able to take the initiative and defend their points of view. Teachers are not left out, having received no initial or continued training in teaching approaches and project design and management; they most often confuse the class project and the written production activity. . Thus the project is reduced to simple moments of recycling of disciplinary content according to pedagogical approaches that could not be more traditional: frontal teaching, focus on content, etc. group work, adopted in these situations, does not go beyond the simple modification of the material organization of the classroom and hardly affects the devices and techniques of conduct of the project. These projects are, moreover, presented in minute detail and confer little latitude on the teacher and

the learner. Thus, all the purposes linked to the philosophy of the project (motivation, creativity, autonomy, interdisciplinary, initiative-taking, etc.) are destroyed, or at the very least greatly minimized: far from being the designer and the actor of his project , the learner is a simple performer of tasks set beforehand, devoid of meaning for him and most often cut off from his school and social environment.

5. CONCLUSION

Whether we like it or not, the education system has an economic function. It generally consists of preparing for professional life. However, the issues, methods and forms this preparation varies and evolves over time., Being called upon in the current context to train in flexibility, mobility, initiative and risk-taking, etc. the School is only conforming to the present requirements of the society which contains it and which is moving towards a radical change in the relationship to employment resulting in a reduction in wage employment and the promotion of own initiatives, self-employment. Entrepreneurship education has been considered for several decades as the preferred tool for bringing about the desired change despite the criticism leveled at it. Benefiting from growing interest and a strong promotional discourse, this trend is a global project characteristic of most education systems in post-industrial countries. However, its actualization on the ground varies according to the contexts and educational levels and according to visions of entrepreneurship and the resulting goals: to train entrepreneurs or enterprising citizens. In Morocco, the political discourse is favorable to the integration of this approach in the education system. However, no explicit mention is made of entrepreneurship education in official texts; the curricular and reform texts insist on the need to strengthen the links between school and business and without explicitly mentioning education for entrepreneurship, which is struggling to find its rightful place in Moroccan secondary education despite assets facilitating this integration: compatibility of teaching approaches, centralized management of schools, etc. (UNESCO, 2013). According to this research, which nevertheless remains incomplete and would benefit from being extended to other disciplines and other education cycles (primary school, university), it seems that the Moroccan education system still favors the restricted conception of education at entrepreneurship aiming at the training of future entrepreneurs and the creation of businesses. This attitude needs to be reconsidered in order to promote the formation of an open, innovative, creative and flexible citizen capable of facing a world in perpetual change and of enabling the State to achieve the expected social and economic development.

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A PREDICTIVE MODEL OF CUSTOMER BEHAVIOR IN A MARKETING CAMPAIGN USING CATBOOST CLASSIFIER AND STRUCTURED DATA

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ABSTRACT

Given the increasing intensity of market competition, firms must engage in one-to-one marketing with their customers in order to remain competitive. The ability to predict customer behavior through data mining and machine learning has risen to become a significant source of competitiveness for businesses as a result of this. Machine learning algorithms have risen in popularity in recent years as a result of their accuracy in predicting the future. It is difficult to forecast a customer's conduct in the future when they are faced with an unexpected event. For the same purpose, a great number of algorithms are developed and tested. This research study looks at how machine learning can predict customer behavior in marketing campaigns, allowing businesses to learn more about their customers and provide them with a better experience. It also shows how businesses may enhance their marketing performance to attract new customers, build long-term relationships with them, and increase client retention to boost revenues. Consumer behavior prediction is frequently used in marketing efforts to schematize service offers and targeted marketing programs. Furthermore, the knowledge is discovered using six classification algorithms in this proposed method: K-nearest neighbor (KNN), Ada Boost Classifier, Naive Bayes (NB), Linear Discriminant Analysis (LDA), Support Vector Machines (SVM), and CatBoost Classifier. According to the conclusions of this research, CatBoost Classifier then produces a more accurate forecast. The CatBoost Classifier's performance is measured using a comprehensive examination. The results reveal that CatBoost Classifier outperforms the major homogenous classification approaches in terms of recall,accuracy, precision, F1-score, and Cohen's Kappa.

Keywords: *Customer behavior, marketing campaign, machine learning, prediction*

1. INTRODUCTION

We cannot grasp how is it essential for an organization, and above all the business manager, to have a perfect knowledge of the public, on which it depends if one does not integrate the fact, that the latter is at the center of all the actions undertaken. Understanding the needs of a constantly evolving consumer requires the involvement of many different disciplines. Some of these may well have influenced thought at one point, but the most promising explanatory method appears to be a multidisciplinary viewpoint. This growth illustrates the relevance of learning aspects in consumer habits, and it is also the product of various variables, both external and internal or cultural, that direct the processes activated on a continuous basis. Consumers purchase a variety of services and products on a daily basis because they are valuable in a variety of ways.

At the same time, recognizing which service or product is much more favored by a customer can be challenging, because purchasing decisions are based not only on price, but also on a number of other aspects that must be examined before making a final decision. Customers' purchasing behavior is influenced by a number of things. Cultural, societal, and personal decision-making components, for example, are all included. All of these have had an impact on purchasing behavior, either directly or indirectly(Ghosh and Banerjee, 2020). Hence, Consumer behavior research is an example of how companies can enhance their marketing effectiveness to attract new customers, build long-term relationships with them, and increase customer retention to boost revenues. To assess client behavior, a number of machine learning techniques have been presented. Whereas clients do not obey any predetermined guidelines when determining whether or not to acquire a service or product, we can forecast which service is perhaps the most likely to be purchased(Paul et al., 2018). And to do so, we must first detect prior customers' shopping habits, and if a new customer's shopping behavior fits the previous ones, we may anticipate the new customer's decision(Ghosh and Banerjee, 2020). Companies can deliver a better client experience by promoting their chosen services if the purchase decision can be predicted ahead of time.

2. RELATED WORK

Machine learning (ML) has been progressively crucial in business and marketing throughout the last decade (van Giffen et al., 2022). Companies are rapidly recognizing the advantages of employing this machine learning jargon in order to make strategic decisions based on big data processing and ML skills (Valecha et all.,2018). ML in particular, has advanced significantly in the company's various activities(XingFen et al.,2018). A substantial part of this achievement can be attributed to machine learning, which has become the core paradigm of contemporary AI research (Assegie et al.,2021). This achievement was reflected in the number of machine learning algorithms that were proposed to analyze customer behavior. Random Forests (RF), Support vector machines (SVM), and Decision Trees (DT) are machine learning techniques that are reliable and easy to understand for predicting customer behavior(Hu et al., 2020a). Based on the evaluation parameters Accuracy, Precision, Recall, and F1-score,in (Valecha et al., 2018) Random forest classifier's results are more accurate than those of other machine learning algorithms. However, the authors(Hu et al., 2020b) create a hybrid prediction model for user buying behavior using the fusion of SVM and logistic regression (LR) methods, and conduct an empirical investigation on the model's effectiveness. In terms of prediction, the fusion model outperforms the single model, according to the findings. In the same way, in (XingFen et al., 2018) the authors present a new algorithm for predicting user consumption behavior that combines LR and the XGBoost algorithm to anticipate users purchasing decisions. The researchers(Dou, 2020) utilize the cat boost model to examine and predict whether people would purchase a specific product based on real unbalanced browsing data from an e-commerce portal. The accuracy, precision, and other model criterion are used to analyze the prediction's performance. In this data set, a better result is obtained: the accuracy in forecasting purchase behavior reaches 88.51 %. In our study, the dataset used is a dataset of 2240 customers containing 28 variables related to iFood firm, a worldwide food corporation with a few hundred thousand existing clients that operate in the food industry. and serves roughly one million people per year. They sell a variety of things, including wines, products, exotic fruits, and fresh fish. Regular and gold products can also be distinguished. Catalogs, the company's website, and physical stores are the three sales channels via which users can buy products from the company. Table 1 shows the customer dataset variables and their descriptions, and figure 1 depicts some descriptions of our dataset.

Variable	Type	Description
ID	Integer	Customer's unique identifier
Year_Birth	Integer	Customer's birth year
Education	Object	Customer's education level
Marital_Status	Object	Customer's marital status
Income	Object	Customer's yearly household income
Kidhome	Integer	Number of children in customer's household
Teenhome	Integer	Number of teenagers in customer's household
Dt_Customer	Object	Date of customer's enrollment with the company
Recency	Integer	Number of days since customer's last purchase
MntWines	Integer	Amount spent on wine in the last 2 years
MntFruits	Integer	Amount spent on fruits in the last 2 years
MntMeatProducts	Integer	Amount spent on meat in the last 2 years
MntFishProducts	Integer	Amount spent on fish in the last 2 years
MntSweetProducts	Integer	Amount spent on sweets in the last 2 years
MntGoldProds	Integer	Amount spent on gold in the last 2 years
NumDealsPurchass	Integer	Number of purchases made with a discount
NumWebPurchases	Integer	Number of purchases made through the company's web site
NumCatalogPurchass	Integer	Number of purchases made using a catalogue
NumStorePurchases	Integer	Number of purchases made directly in stores
NumWebVisitsMonh	Integer	Number of visits to company's web site in the last month
AcceptedCmp3	Integer	1 if customer accepted the offer in the 3rd campaign, 0 otherwise
AcceptedCmp4	Integer	1 if customer accepted the offer in the 4th campaign, 0 otherwise
AcceptedCmp5	Integer	1 if customer accepted the offer in the 5th campaign, 0 otherwise
AcceptedCmp1	Integer	1 if customer accepted the offer in the 1st campaign, 0 otherwise
AcceptedCmp2	Integer	1 if customer accepted the offer in the 2nd campaign, 0 otherwise
Response	Integer	1 if customer accepted the offer in the last campaign, 0 otherwise
Complain	Integer	1 if customer complained in the last 2 years, 0 otherwise
Country	Object	Customer's location

Table 1: Variables and descriptions the dataset

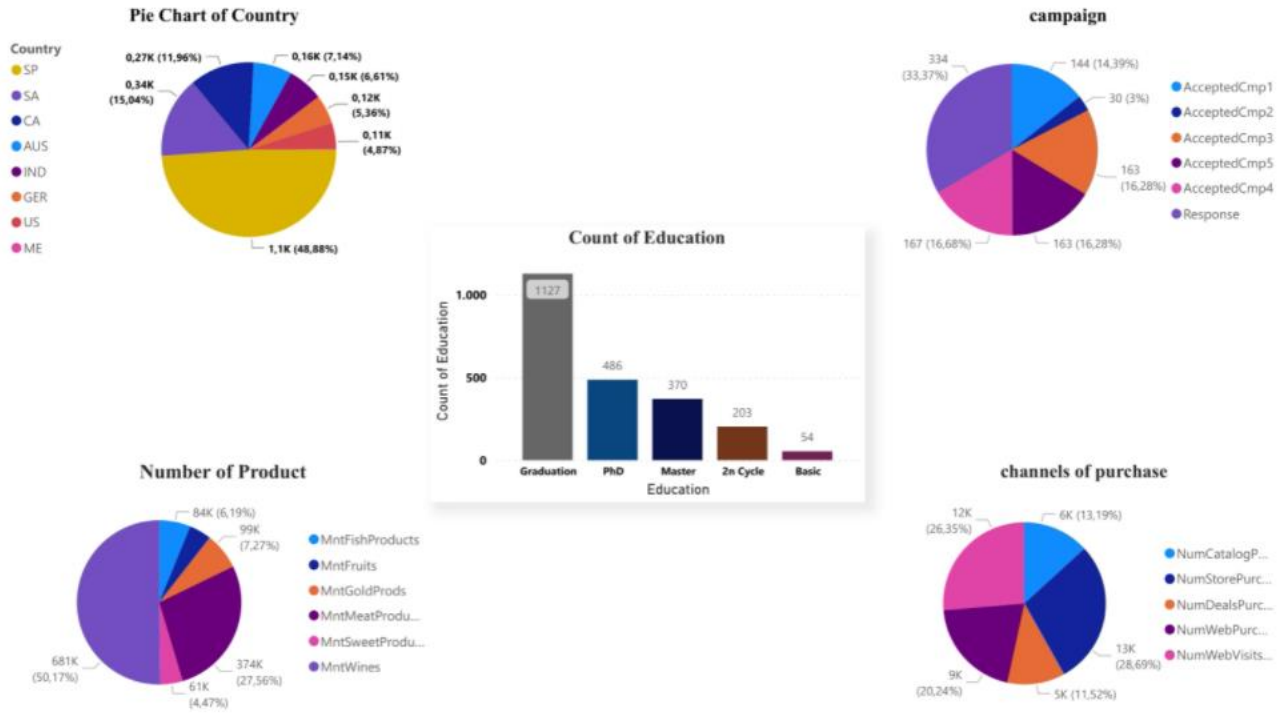

Figure 1: Somme descriptions of our dataset

The six classifiers that were utilized were Support Vector Machine (SVM), Naive Bayes (NB), Ada Boost Classifier, Linear Discriminant Analysis (LDA), K-Nearest Neighbors (KNN), and CatBoost. Then, based on precision, recall, F1-score, accuracy, and Cohen's Kappa, each model's evaluation performance is calculated.

3. METHODOLOGY

In this section, we will go over the machine learning techniques we utilized. But first, let's look at the overall structure of our research.

3.1.overall structure architecture

Figure 2 depicts the overall architecture, which is categorized into four basic steps:

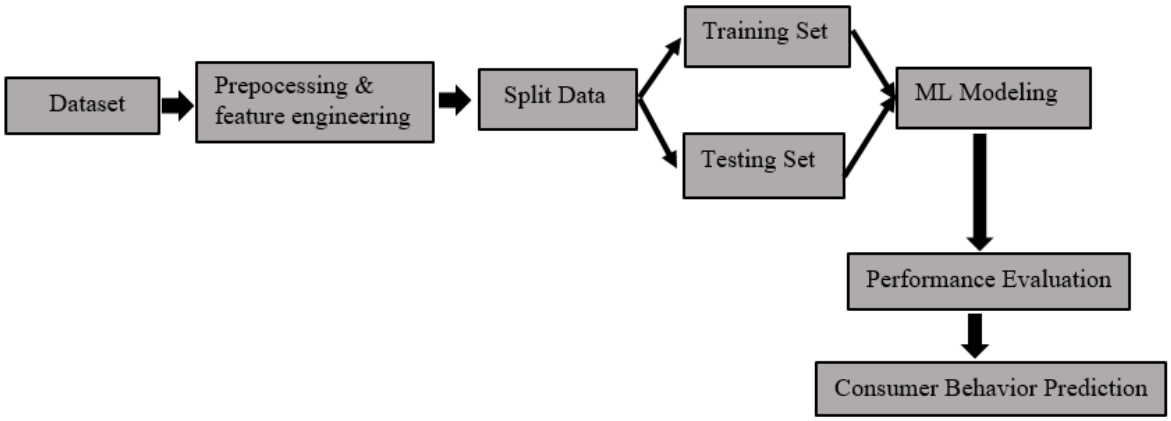

Figure 2: Overall architecture

The following is a list of things to observe about the general architecture depicted in picture 2: Step-1 Obtaining a database. the dataset used is a dataset of 2240 customers containing 28 variables related to iFood firm, a worldwide food corporation with a few hundred thousand existing clients that operate in the food industry. Step 2: To make it suitable for feature extraction, the dataset was pre-processed in this step. Step 3: The data was preprocessed before being fed into the trained classifier. Step-4: Finally, we opt for the most efficient model according to the evaluation criteria, in order to predict consumer behavior.

3.2. Evaluation metrics

We employed evaluation criteria including precision, accuracy, F1-score , recall and Cohen's Kappa to obtain performance results from six algorithms. The False Statement is used to calculate these parameters. For example, even if an expression is negative, it might be deemed positive, or it may be declared neutral regardless of whether it is negative or positive. The following are the calculations for the evaluation criteria mentioned above:

$$Accuracy = (T_N + T_P + F_N + F_P)^{-1} \times (T_N + T_P). \quad (1)$$

$$Precision = (T_P + F_P)^{-1} \times T_P. \quad (2)$$

$$Recall = (T_P + F_N)^{-1} \times T_P. \quad (3)$$

$$F1\text{-}score = 2 \times (\text{Recall} + \text{Precision})^{-1} \times (\text{Recall} \times \text{Precision}). \quad (4)$$

The number of true negatives, true positives, false negatives, and false positives is represented as T_N, T_P, F_N, and F_P, respectively. In addition to this, Cohen's Kappa is regularly employed as a statistic of inter-rater agreement. However, it is most commonly applied to data from an opinion rather than a measurement.

The likelihood of agreement is measured using the Kappa coefficient, which compares the actual probability of agreement to the anticipated value if the ratings were genuinely independent. [0,1] is the range of values for range, with 1 indicating total agreement and 0 indicating complete independence.

3.3. The used ML Models

This section describes the Machine Learning models that we employed in our research, as well as Discriminant Analysis (LDA), Naive Bayes (NB), Ada Boost Classifier ,Support Vector Machines (SVM), CatBoost Classifier and K-nearest neighbor (KNN).

3.3.1. Naive Bayes (NB)

NB learning is a sort of probabilistic learning, it is founded on the Bayesian theorem and uses a less complex and easier procedure. It's a data classification strategy that entails learning from errors and then utilizing what you've learned to categorize the data (Tangwannawit and Tangwannawit, 2022). It's a sort of data categorization that focuses on a hypothesis and combines computation and probability to categorize data. The recently founded models would be utilised to classify and alter data, either decreasing or increasing its probability(Assegie et al., 2021). The newest data is produced, and setting choices are updated to reflect the new data.

$$P(Y\backslash X) = \frac{\mathrm{P(X\backslash Y)*P(Y)}}{\mathrm{P(X)}} \quad (5)$$

With $P(\mathrm{Y}) \neq 0$, Y and X are two independents events,
The probability of Y if X is true is P(Y\X)
The probability of X if Y is true is P(X\Y)
P(Y) and P(X) are the probability of detecting Y and X independently of each other.

3.3.2. Support Vector Machines (SVM)

Due to the limited number of datasets, SVM was chosen as one of the best classifiers, and it still one of the most widely utilized binary classification techniques employing discrete attribute values. Although Support Vector Machines are linear classifiers, they can be made non-linear by changing the kernel model. Support Vector Machines are used to discover the best boundary or hyperplane for dividing parameters into two different class datasets. The separate hyper-plane is an (N-1) dimensions subspace, where N denotes hyperparameters(Nik Hashim et al., 2022). To maximize the separation between the selection hyperplane and support vectors, SVM will be utilized.

3.3.3. K-nearest neighbor (KNN)

KNN is the most successful while having the fewest features. KNN employs a resemblance metric like Euclidean distance or Manhattan distance to categorize a different sample point. The k-value is the number of k-nearest neighbor categories that make up a new sample data point's vote group. The most frequent label that is closer to the majority of categories in the k sample data points will be applied to the new sample point. The weights and the k-value are the two most significant elements in KNN. The k-value has the greatest impact on KNN's performance, The algorithm is more prone to outliers with a smaller k-value, whereas a larger k-value causes the algorithm to contain too many sample points(Nik Hashim et al., 2022).

3.3.4. CatBoost

The CatBoost (Dorogush et al., 2018; Huang et al., 2019)is a variant of GBDT the gradient boosting decision tree. Catboost can help with regression, classification, ranking, and multi-class classification, to name a few. It solves problems with ordered features while

simultaneously providing categorical characteristics. A categorical feature (CF) is a statistical property that only can accept one of a small number of widely defined values.

3.3.5. AdaBoost

The AdaBoost algorithm (Wang et al., 2019)is a boosting classification technique that can transform a group of "weak" classifiers into "strong" classifiers. From the early training samples, create a base classifier, Typically, these algorithms begin with a base classification method where classifying challenge is only slightly better than random guesswork. The sample weight is then adjusted based on the results of the classifier's base, resulting in the samples being grouped erroneously to be given more attention. The altered samples are then utilized to prepare a future basic learner. After iterations, weights are applied to these base learners to create the end classification.

3.3.6. Linear Discriminant Analysis (LDA)

In data science, linear discriminant analysis is the method for classifying data, reducing dimensionality, and displaying it. A great deal of time has passed since it first opened its doors to the general public (Tharwat et al., 2017). LDA typically produces categorization results that are dependable, acceptable, and clear. Often, when dealing with real-world classification jobs, LDA is utilized as a benchmarking tool before continuing to more complex and flexible algorithms(Balakrishnama and Ganapathiraju, n.d.).

4. RESULT AND DISCUSSIONS

In a marketing campaign, the prediction model is used to forecast customer behavior. To evaluate the prediction's performance, the outcomes are evaluated. To forecast customer behavior, many classification methods are used. The suggested system's performance is also assessed using several metrics such as precision, recall, accuracy, F1-Score, and Cohen's Kappa.

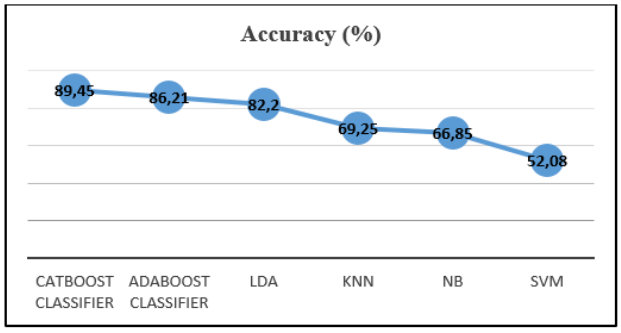

Figure 3: Analytical Accuracy

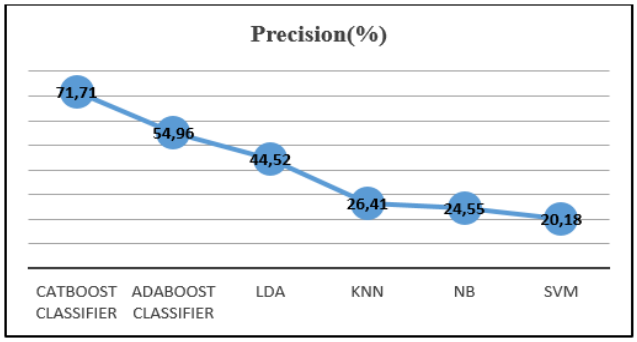

Figure 4: Analytical Precision

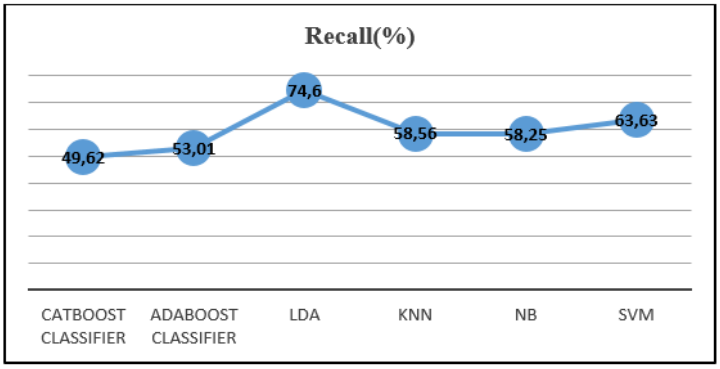

Figure 5: Analytical Recall

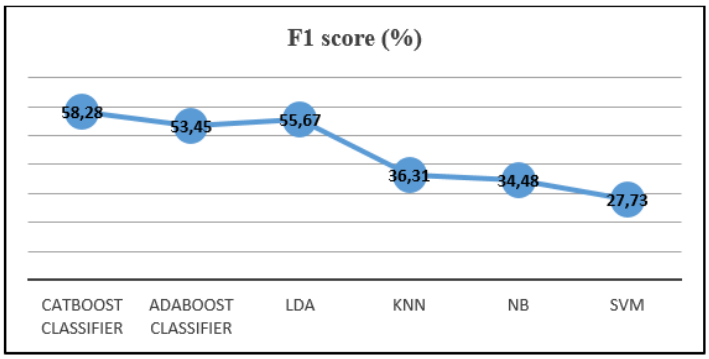

Figure 6: Analytical F1-score

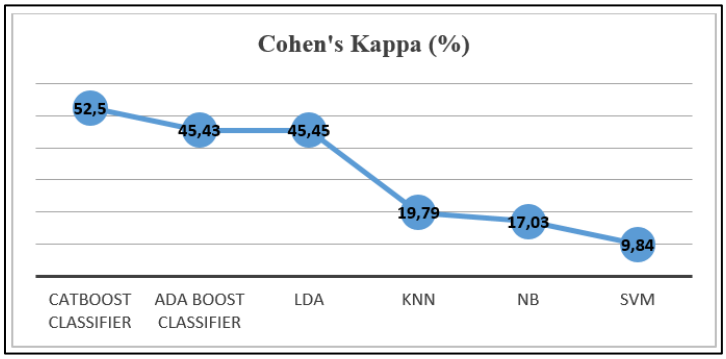

Figure 7: Analytical Cohen's Kappa

The average accuracy of several classification algorithms is shown in Figure 3. To evaluate the analysis. The accuracy level of the CatBoost Classifier is higher than the other methods, as shown in the graph above. SVM has a lower level of accuracy than the other approaches. The top model CatBoost Classifier has an accuracy level of 89.45%. The precision analysis of several techniques is shown in Figure 4. AdaBoost Classifier has a greater precision analysis than Support Vector Machines (SVM), Naive Bayes (NB), Linear Discriminant Analysis (LDA),and K-nearest neighbor (KNN). CatBoost Classifier has a precision value of 71.71 %, whereas AdaBoost Classifier has a precision value of 54.96 %. The recall analysis is shown in Figure 5. In recall analysis, the percentage of total relevant instances that are actually retrieved is calculated. The value of Linear Discriminant Analysis (LDA) in recall analysis is higher than the other techniques. LDA has a recall value of 74.60 %. The value of CatBoost Classifier is higher than the other techniques in the bar chart in Figure 6. SVM classification has a lower F1-Score than the other classification methods.

The Cohen's Kappa analysis of several techniques is shown in Figure 7. Linear Discriminant Analysis (LDA) has a greater Cohen's Kappa analysis than Adaboost Classifier ,Support Vector Machines (SVM), Naive Bayes (NB),and K-nearest neighbor (KNN). CatBoost Classifier has a Cohen's Kappa value of 52.50 %, whereas Linear Discriminant Analysis (LDA) has a Cohen's Kappa value of 45.45 %.

5. CONCLUSION AND FUTURE WORK

In a marketing campaign, the ability to forecast customer behavior is critical. Knowledge is discovered using six classification algorithms in this proposed method: Support Vector Machines (SVM), Naive Bayes (NB), Linear Discriminant Analysis (LDA), K-nearest neighbor (KNN), Ada Boost Classifier, and CatBoost Classifier. CatBoost Classifier then produces a more accurate forecast. The CatBoost Classifier's performance is measured using a comprehensive examination. The results reveal that CatBoost Classifier outperforms the major homogenous classification approaches in terms of accuracy,recall,F1-score, precision,and Cohen's Kappa.In the future, the study can be broadened to incorporate deep learning and hybrid models. To evaluate performance, other performance measures can be chosen. A number of datasets from diverse domains can also be used to evaluate the model.

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CHALLENGES OF SOFTWARE DEVELOPMENT USING SCRUM FRAMEWORK

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ABSTRACT

The realization that project management was a necessity came to organizations world-wide by the end of the last century. Project management has spread across all sectors of the economy, with IT and ICT companies most noticeably profiting from its application. As software development grew in popularity, emerged a growing need for methodologies adept to managing such complex projects. This in turn resulted in Scrum being accepted as the go-to framework for bringing greater value to the client. However, due to the fact that a modern business environment is characterized by high levels of uncertainty and technological advancements, to better understand the trends and specifics of software development, as well as challenges the teams encounter, qualitative empirical research was conducted in Croatian IT and ICT companies. The collected data were analysed by a grounded theory method and presented in five main areas of challenges: lack of time, support and knowledge; poorly defined Product Backlog; inadequate internal communication and the absence of feedback; inadequate communication with the customer and challenges related to the final product – software.

Keywords: *agile project management, challenges, ICT and IT industry, Scrum framework, software development*

1. INTRODUCTION

In today's information age, the world of technology, computers and communications, software is one of the most important achievements of human creativity. Software creation is therefore considered to have significant relevance for companies within IT and ICT industries presenting complex projects that must not only meet customer needs, but also bring new products to the market faster than ever before and accelerate improvements to existing solutions and services (15th State of Agile Report, 2021). This produced a need for project managers to be in constant search of appropriate development methods, while facing a variety of contextual factors (Kuhrman, 2017). Traditionally, project managers would try to identify changes in advance and determine all possible details accordingly to make their organizations and project results competitive in the market. The development process would start with defining and analysing the requirements, and follow by designing, documenting, testing and operating/maintaining the software (Mahajan and Verma, 2021; Ashmore and Runyan, 2014; Sääskilahti and Röning, 2011). However, it became increasingly difficult for them to adapt in an uncertain environment where customer requirements are vague, unknown or changing rapidly, fast deliveries and value creation for the customer are mandatory, and creativity and learning are essential (Mahajan and Verma, 2021; Cao, Kannan, Xu and Ramesh, 2017; Dybå, Dingsøyr and Moe, 2014). The solution emerged in the form of agile project management, based on iterative and incremental development, in which requirements and working software components are developed through collaboration (Schwalbe, 2016; Ashmore and Runyan, 2014). It is focused on managing time-to-market constraints and can adapt to change throughout the software development life-cycle

thus bringing many benefits like faster delivery to the market, better quality of the increments and the final product, increased client involvement and satisfaction, flexibility in development, improved team morale and reduced risks. Testing becomes an integral part of the project execution phase, and by ensuring that parts of the software can be used, assessed and corrected at the end of each iteration, each successive step brings new software functionality and new value (Mahajan and Verma, 2021; Rigby, Sutherland and Takeuchi, 2016; Stare, 2013; Duka, 2012). In addition, by working closely with customers, there is an opportunity for them to clarify the initial requirements and participate in the development process, try solutions and provide feedback after each iteration which reduces the feedback cycle between the generation of the idea and its realization and the chance of misinterpreted but implemented user requirements, help to keep focus on the part of the system that is most valuable to them at that moment, as well as ensure that the final product meets their expectations (Fustik, 2017; Robson, 2013; Highsmith, 2009). Also, if agility is truly implemented in project teams, they become much more flexible and move towards higher value business goals by embedding change in each iteration (Highsmith, 2013). Self-managing teams ensure creativity, innovation, and demonstration of the expertise of members who choose the tasks they want to work on during the iteration (Ashmore and Runyan, 2014). This gives them greater autonomy and job satisfaction, improves shared focus, mutual trust and respect, increases the ability to quickly and frequently meet new challenges, and in general helps them to think and work more efficiently and make better decisions in a timely manner (Stellman, Greene, 2014; Cockburn and Highsmith, 2001). Although there is a range of agile frameworks, methods and methodologies available, such as XP (Extreme Programming), Crystal Methods, Feature-Driven Development (FDD) and Dynamic Systems Development Method (DSDM), according to the 15th State of Agile Report (2021), Scrum is highlighted as the most popular lightweight agile framework for software development used by 66% software developers. Together with Scrum variants such as ScrumBan and Scrum/XP this percentage rises to 81%. It is based on a set of values, principles and practices that provide a foundation for organizations to add their unique applications of relevant and specific engineering practices which will result in a set of processes specific for them and the product being produced (Rubin, 2012), but still within the frame of Scrum roles (Product Owner, Scrum Master and Development Team), activities and artifacts (e.g. creating Product Backlog and Definition of Done, sprint planning, daily Scrum, sprint review, retrospective), which implemented adequately will bring the maximum value to the final product (Grebić and Stojanović, 2021; Schwaber and Sutherland, 2020; Schwalbe, 2016).

2. OVERVIEW OF THE PREVIOUS RESEARCH

As software creation is one of the fundamental areas of development of high technologies that are evolving at an incredible rate, creating an environment in which businesses can fail as quickly as they started, it revolves around experts who use knowledge as their greatest resource (Vlahović, Milanović Glavan and Franković, 2016). However, even in cases of applying agile approaches, challenges and difficulties will inevitably arise in different domains and at different stages of development. Previous research shows that in a significant number of cases, the challenges are related to the human factor – interaction and communication between people, lack of skills and experience, the way tools and techniques are applied within the approach used, inconsistent processes and practices across teams, and reactions in different situations (15th State of Agile Report, 2021). If viewed through the prism of cooperation with customers, although successful software development partially depends on the involvement of customers throughout the process, the Project Manager/Product Owner and developers sometimes cannot work with them in a way they would like due to the fact that the customers are occupied with other jobs and do not have time to communicate clearly and regularly (Cho, 2010).

It makes it even harder on the team in cases where customers don't have the complete understanding of the final product they want and do not communicate the necessary requirements, so the responsibility for defining the specifics is transferred to the developers and the prioritization of the requirements relies on assumptions, rather than clear information (Williams, 2010). In addition, as stated by Han and Huang (2007) the challenges in relationships with customers may be the result of their resistance to change, conflicting behavior, negative attitude, or a lack of commitment to the project. On the other hand, if it is looked at via the internal way of doing business, challenges might be the result of insufficient management support for agile work, poorly defined process and inadequately trained software development teams, organizational restructuring, unstable organizational environment or the negative impact of corporate policies (Han and Huang, 2007). Furthermore, one of the most frequently mentioned causes of challenges is inefficient communication and interpersonal conflict between team members, due to performance under high pressure in onsite and virtual environments, insufficient number of Project Managers/Product Owners and experts with specific knowledge within the company, different thinking and approach to tasks, as well as employee cultures (Miller et al., 2021; Huynh and Nguyen, 2020; He, Zhang, Li, 2020; Dey et al., 2016; Han and Huang, 2007; Cho, 2007; Boehm, 2006). Ascertained from the aspect of the structure itself, it is evident that complexity of software development can bring into focus challenges of time management and adequate scheduling, cost estimates due to continuous changes in scope and requirements after each iteration, and insufficiently fast adaptation to rapidly changing technology, as well as impulses coming from the environment (Mahajan and Verma, 2021; Fernandez and Fernandez, 2008). Finally, potential challenges may arise directly from the software creation process such as incorrect module integration, interface errors, poor software prototyping, erroneous scenarios, code deficiencies and test case specifications (Juhnke et al., 2020, Kilibarda et al., 2016).

3. EMPIRICAL ANALYSIS

3.1. Research methodology

With the aim of examining the challenges that companies face during software development using a Scrum framework, a qualitative empirical research was conducted in IT and ICT firms in Croatia in 2021. The research was conducted in two steps. In the first step, a questionnaire was sent to 120 ICT and IT companies engaged in software production in order to identify those who use Scrum framework. In this way, a sample of 28 companies fitting for further research was obtained. In the second step, a questionnaire was sent to a defined sample as a Google form link via email. All 28 companies participated and in some cases sent responses from multiple members of Scrum teams for additional clarification, thus making a total of 40 responses. The questions in the first part of the questionnaire gathered general information about companies, including size, length of application of the Scrum framework, and the method of application - whether they apply it in full, or just parts which they adapt to their business. The obtained data showed that the companies include a range from micro (2.5%), small (10%), medium (52.5%) to large entities (35%), and an average use of the Scrum framework of four years (min. 3 months, max 12 years). More than half of the organizations in the sample use the Scrum framework in full, including prescribed roles, processes and artifacts, while 40% usually use only certain parts relevant to their business, such as daily Scrums, sprint planning, user stories, retrospectives, sprint reviews (not necessarily after every sprint) and Product Backlog for prioritization among the tasks. A more detailed examination provided information on the main reasons for the adjustments, such as too much administration and lack of staff, insufficiently defined timeline of activities or scope of production. In many cases, not only all parts of Scrum are not necessary for a successful project, but they are not even possible. In addition, a significant portion of the responses noted that they often adjust the Scrum framework during

the software development to fit the customer needs, taking into account the expectations from the customers such as waterfall deliveries or significant planning in advance. Moreover, although one of the questions involved determining the role of respondents within the Scrum team, this data was not decisive given that Scrum teams are small, strongly interconnected and characterized by constant communication, therefore, it is assumed that all members are familiar with challenges they face during software development. The second part of the questionnaire was focused on the challenges Scrum teams encountered during the software development. The respondents were asked to determine which challenges they encountered and to explain the situations when the challenges occurred in more detail. The collected data from this part were analysed using a grounded theory method. As a result, five major codes were identified: lack of time, support and knowledge; poorly defined Product Backlog; inadequate internal communication and the absence of feedback; poor communication with the customer and challenges related to the final product.

3.2. Research results and discussion

In this section, all results will be organized around constructed major codes with the quotes adequately depicting them:

a) lack of time, support and knowledge

The most mentioned challenge is a combination of lack of time or its inappropriate allocation, insufficient top management support for agile development implementation, as well as limited knowledge and understanding of the Scrum framework and not enough training in the field which might cause adapting it in a wrong way, returning to traditional phases, applying an inappropriate hybrid approach or not realizing its full potential, which then triggers a whole spectre of other problems - functional defects, lower quality of the final product and delays in delivery:

"Inadequate and insufficient involvement of the organization's leadership structures in the agile transition (without that, removing obstacles becomes very difficult)."

"In the current team, the main challenges are the result of the lack of time in planning and organizing development, product development started spontaneously and now the whole team (including me as a PO) is rushing to achieve something. In addition, the team is too big (15 people) and they are not familiar with Scrum (they know some basics, like the way the story is written - format) which is why we are also wasting time. "

"The main problem is the lack of time, i.e. the availability of people to work on the product development. When this is combined with the complexity of the project, we have a problem that we are trying to solve by force. Then there is an unprepared backlog, insufficient communication, technical debts, etc.“

"People come to meetings unprepared, so we spend too much time explaining a topic they could have read about in the documentation."

"People who do not have the appropriate knowledge are often put on the project and need mentoring which takes time. Therefore, we need more time to complete daily tasks."

"The biggest problem is the lack of knowledge and understanding of what the Scrum framework means and what its purpose is. Someone read an article and introduced the standard Scrum framework and is pushing it on every project."

b) poorly defined Product Backlog

Although Product Backlog presents a focal point where all tasks are arranged according to priorities that may be needed in software development, its inadequate creation often stems from a lack of understanding of the importance of individual items, unclear team responsibilities and insufficient focus of the PO who is working on several projects in parallel due to lack of staff in the organization and is not dedicated enough to just one team and customer. This further affects the unsurprising planning of sprints, and the definition of deliveries, e.g. increments of the final product to be delivered after the sprint:

"Backlog is very often too general and insufficiently structured and prioritized."

"Poorly prepared backlog, so the next sprint can neither be planned nor started. It happens because Product Owners are overwhelmed with work in other teams or human error or negligence."

"It's because the backlog doesn't load in time. Whenever there is a task that needs to go to the backlog, it is best to type it immediately. If this is postponed, it is usually not registered, so later we have an incomplete backlog. We all know that some tasks are missing, but it is difficult to remember exactly which ones and how many."

c) inadequate internal communication and the absence of feedback

In order for the Scrum team cooperation to be at a satisfactory level, team members need to timely and regularly communicate either face to face or via different online communication tools depending on the situation (e.g. working from home due to Covid 19 restrictions), be able to state their own opinion or necessity to give different points of view, as well as get the feedback on the tasks done to know how to approach tasks and plan time in upcoming sprints and not to repeat the same mistakes:

"Insufficient use of asynchronous communication in the company, meetings are convened F2F or online for all things, which I consider unnecessary."

"Most of the challenges come from poor Product Owner's communication with team members, and the fact that developers write all the tasks themselves."

"Problems often arise when developers do not communicate enough with each other, e.g. frontend and backend developers do not solve the problem of a common task when working on it, they are not thorough enough to check whether the other side of the task has been done. This results in the fact that on a daily Scrum meeting we find that one of these two parts of the task does not fit, and they should have already solved this with each other."

"Problems are mainly caused by insufficient or unclear communication. For example, if something that is important for the software suddenly does not work, it must be emphasized/reported to the team in time and with high priority. And the message is often lost among other daily conversations. A team member may have reported this so he does not feel

additional responsibility, but if he is aware that the team has not paid enough attention to the problem, then his duty is not over, he must urge and impose it as #1 priority or report to PO/SM separately.“

d) poor communication with the customer

Organizations often face customer-related challenges such as inadequate definition of requirements and changing them too often during the production, misunderstanding or unwillingness to use the Scrum framework, inactive customer involvement in software development processes that affect plan changes during sprints, dissatisfaction on both sides, and ultimately potential failure of the product development:

"Situations occur where the two parties (customer-development team) do not clearly define a goal. This results in changing requirements amid sprints and unnecessary waste of time. The customer sometimes has unreasonable demands within small deadlines, not realizing that what he has requested is actually very complex and requires more time for development than he would like. This often puts pressure on the PO and the team, and the PO must mitigate those pressures and reasonably discuss which is the most feasible and logical solution."

"Customer requirements change too often. Customers do not express their opinion in full and then subsequently try to change the agreement."

"The challenge is to convey the culture and way of working to the customer, because without understanding, the customer will not be able to follow you, which will only result in his insecurity, frequent changes, and bad decisions."

e) challenges related to the final product

Challenges in this domain most often occur on two levels, as the appearance of "bugs", which implies unstable and inconsistent code or indicates insufficient detailed testing, and code shortcomings in general:

"Code shortcomings occur due to poor architecture setup and/or inexperience of developers. Also, there are more experienced and less experienced developers in the team who don't work the same way, so it all affects the whole code. "

“To avoid this we need regular supervision of the tech leader who will supervise the developers and advise them in their work, point out potential dangers and revise the code together with them because if communication between developers is superficial and there is no testing after each sprint, bugs are inevitable."

Once they are identified, the challenges need to be dealt with in an adequate way because neither ignoring them nor forcing them to be solved at once will contribute to improving the situation. Therefore, resolving a challenge can also in a way present a challenge:

"We tried to fix everything at once - if we ran into challenges and problems, we would try to fix at least five at a time, and it didn't work. It's better to focus on two or three problems and then it will work."

4. CONCLUSION

Given the importance of software development, approaches have evolved to provide more customer satisfaction, reduce costs, shorten product development lifecycle, reduce errors, and ultimately adapt to changing business requirements during the software development process. Also, taking into account the dynamism in which IT and ICT companies operate, Scrum framework has proven to be the right solution for solving complex problems or situations and delivering products with the highest possible value. However, results of the research conducted among IT and ICT companies in Croatia that use Scrum framework for software development identify a range of challenges in its application, from inadequate knowledge and support to the use of frameworks and artifacts, role allocation, use of time, internal and external communication processes and customer relationships, to deficiencies in the final product. Such challenges result in a number of other problems and make product development extremely difficult. More attention should be paid to understanding the processes used and support from management, improving the competencies of staff in the field, monitoring trends and keeping pace with technological advances, as well as developing understanding with the customer. And if the problems do arise, they should be analysed and approached appropriately at the individual and organizational level.

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THE SOCIO-ECONOMIC MANAGEMENT CONTROL AFTER THE COVID 19 PANDEMIC

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ABSTRACT
In an uncertain context related to the Covid-19 pandemic, as well as several other headlines (for example: climate change, multiple social movements…), the world economy has been seriously affected by a recession which has cast its shadows over the national economy, as well as on businesses and enterprises. This paper aims to address the principles and professions of socio-economic management control, which plays a strategic role in decision-making, and especially after the obligation of the remote working (or distance work) which involves companies to digitize. In this framework, we will try to find the answers to the following questions: How can we know if a company has the right person at the right place, and has the right resources, in the right places? How to measure the contribution of skills acquired through training and education, or even more, the gain in productivity? What does the coordination between the management controller and the HRD bring to the company? what are the tools and impacts of digitalization on business performance?
Keywords: *socio-economic management control, human resources, hidden costs, digitization, Big data, ERP, performance, business*

1. INTRODUCTION

In 2020, the severity of the coronavirus pandemic has prompted governments in more than 200 countries around the world to take drastic preventive measures, to the detriment of their economies. Therefore, the COVID-19 crisis has the potential to generate lasting and damaging social and economic impact. This crisis reminds us of the crisis of October 24th, 1929, when the prices of the New York stock exchange suddenly collapsed. It was the beginning of a crisis that is rapidly spreading around the world, with very serious social consequences. Faced with the accumulation of unsold stocks and the collapse of profits, companies are firing a large number of employees. In 1933, twenty-five percent (25%) of the active population of the United States was unemployed, mainly in the industrial cities, and with the collapse of consumption, agriculture was also strongly affected, because the populations consume less and the prices of agricultural products fall in turn. This decrease in prices leads to a decrease in consumption and therefore in economic activity, which has led to deflation. And we should not forget the year of 2008, the date when most developed countries entered recession following the financial crisis which finds its cause in loans granted for real estate acquisitions in the United States. This crisis is marked by the cash flow difficulties of banks in the United States and Europe on the one hand, and by a slowdown in international trade and threats of bankruptcy affecting companies on the other.

Often, economic crises cast their shadow both on populations and on companies, and let's start from the idea that the company is an entity made up of material and static capital (assets, machine, etc.), and another which is immaterial and dynamic (human resources), we are confronted with a very strong requirement, which is to improve the performance of the company while being based on the human factor, and taking into account, the conditions of a context qualified by the unpredictability of changes, and the increased risk of business failures. Morocco has adopted the policy of open doors for world trade, as well as the association agreement with the main economic partners, in particular the United States and the European Union (in the vertical sense), and Arab-African countries (in the horizontal sense), in fact these are events that modify the key success factors of Moroccan companies, in a period of economic crisis marked by a rise in unemployment, and a loss of investment opportunity, and a strong wave competition, nationally and internationally. "*Most organizations operate in increasingly unstable competitive environments. They have to deal with rapid changes that require them to be more and more reactive to face these changes: strategic, organizational, structural and cultural*"[1]). For that reason, Morocco has taken simplification measures such as: foreign trade procedures, the investment charter, the commercial code, the customs code, the law on free trade of prices and competition, the regular contribution to the consolidation of the multilateral trading system, the implementation of new sectoral policies based on the comparative advantage of the Moroccan economy (industrial emergence plan 2015, vision 2020 for tourism, vision 2015 for trade, Green Morocco plan for agriculture, Halieutis plan for fishing, etc.) which aim to induce sustained and sustainable growth. But as the proverb said: (Winds go against what ships wish), the Moroccan economy is being hit hard by the impact of the COVID-19 related economic downturn, both globally and globally. in Europe, its main trading partner. She is also facing the effects of the spread of the pandemic at the national level. The health effect of the infection is in addition to its economic effect. These translate into unprecedented and daunting challenges for the country as it tries to mitigate both the health and economic impact of the pandemic. In particular, the country should find the right balance between its action to avoid the social and economic effects of the pandemic while ensuring that the economy is ready to recover quickly after the pandemic ends. To face against these circumstances, the company finds itself obliged to adapt to these unusual conditions, knowing that the phenomenon of organizational transformations which companies have to face is not new, since change seems to be a constant in the business life. " *The degrees of coherence and correspondence between the internal characteristics of the organization, the modes of operation, the modes of adjustment, the types of environment to which the company can be subjected, allows it to configure itself in a specific way*"[2]. According to Pailot, companies must take into account multiple elements, both internal and external, to structure themselves effectively. "*The notion of organizational configuration is correlative to the multiplication of typologies or taxonomies which strive to identify, according to an associative principle, levels of coherence and correspondence between internal characteristics of the organization, modes of operation, types of environment whose combination makes it possible to highlight the existence of archetype, fields of force, forms, in short of specific configurations. […] The criticisms often leveled against configurational typologies cannot cause us to forget that they most often only represent ideal-types, in the Weberian sense of the term, whose descriptions are exactly clear in view of bring out clearly the features in a pedagogical perspective"*.[3]

[1] Brillet Franck et Hulin Annabelle .(2010), « Vers un renouvellement des dispositifs prévisionnels des ressources humaines : la question de la complémentarité entre prévision et prospective. », Revue management et avenir 2010/6 (n° 36), p. 245

[2] Nadège GUNIA. (2002), « La fonction ressources humaines face aux transformations organisationnelles des entreprises : Impacts des nouvelles technologies d'information et de communication », thèse de doctorat en sciences de gestion, Université Toulouse I – Sciences sociales, Ecole doctorale des sciences de l'entreprise, Toulouse, page 9

[3] Pailot P. (1999), « Configuration organisationnelle », Encyclopédie de la gestion et du management, ouvrage coordonné par le Duff R, Dalloz – Sirey, pp173-174

This work focuses on the human factor as a crucial internal element within the company, since the understanding and control of this factor has completed interest in the mastery of the technical and financial elements at work in all industrial activity.

1.1. The company and the human factor

Generally, in organizations, the human factor is a factor in its own right, and then on the other side, we have such serious things as: profitability, technical and technological equipment... Our search engine is based on the idea that: it is human potential, which is the active factor in the creation of added value, by applying its knowledge and its desire to do, on machines, on tools, on raw materials... , even if we hear that there are companies in which there are only robots and only artificial intelligence, there is still a person somewhere, who programmed and configured robots, and who will maintain them, it's the one who will build them, so we are obviously with the human factor throughout the company, and we consider that everything that is financial and technical, in its self, is inert, without human intervention, and the human factor remains insufficient without the existence of technical and financial capital. *"Since 1976, we have developed within ISEOR a change management method that leads to so-called socio-economic management, because it consists of simultaneously improving the economic performance of the company and its social performance. Multiple companies, from various sectors of activity, have implemented innovation actions to reduce their dysfunctions and recycle their hidden costs into added value"*.[4] Socio-economic management, is the slogan that marked the seventies (1970), it is a mode of management that focuses on the human factor and the economic factor at the same time, and our challenge in this research is to demonstrate that these two factors are complementary and inseparable, that is to say, if there are the best skills in the world, and the company does not have the means to hire them, then these skills remain unusable, and vice versa, if it has the best tools in the world, and an incredible financial mass, but nobody wants to work on this technical and financial capital, we are not going to have good results, so our objective is how can we articulate the two at the same time and that each will find his account.

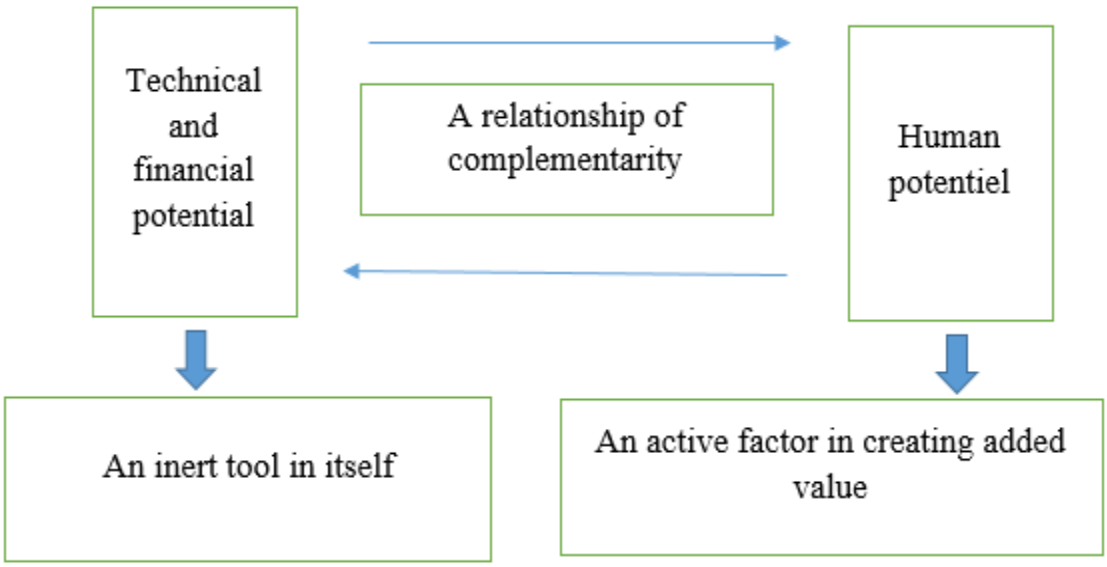

Figure 1: The relationship between human potential and financial potential5

[4] H. Savall, V. Zardet ; « Maîtriser les coûts et les performances cachés, Edition Economica, 2015, 6ieme édition, P : 11
[5] Figure designed by us

"The performance of companies in an economy where the immaterial and the partnership are at the heart of the processes requires precise management of human resources. Management control participates in this through the construction of specific indicators that it groups together in social dashboards."[6]

1.2. The function of production and the function of socio-economic management control; what relationship?

The production relations in the different socio-economic formations determine the need to improve the management control functions of the production process. Control as a control function is subordinated to the solution of the problems of the production system. Therefore, the purpose of control corresponds to management objectives, which are determined by the economic laws of development. Socio-economic management control is a function of the economic and social process management system, it mainly applies to economic and social management within the enterprise. Control as a function of social management is a system of observing and verifying the process of functioning of the corresponding object in the social sphere of society in order to establish its deviations from previously determined parameters.

1.2.1. The role of socio-economic management control in the company

Among the major concerns of companies is the reduction of charges and costs, and what makes the mission even more difficult is when they are confronted with costs that have no traceability in the information system. the so-called hidden costs. *"A so-called hidden cost when it does not appear explicitly in the company's information systems such as the budget, general and analytical accounting or the usual dashboards. Our method for analyzing the hidden costs of an organization includes five headings of socio-economic indicators: Absenteeism; Work accidents; Staff turnover, product quality (goods and services) and direct productivity (quantities produced)"*[7]

1.2.2. The foundations of socio-economic management:

According to the logic of socio-economic management adopted by ISEOR (The Institute of Socio-economics of Companies and Organizations), it is considered that companies are infected with a virus called TWF (Taylor, Weber , Fayol), which consists in separating those who design and those who produce, so we have, on one side the designers, engineers and others, and then on the other side the operators who carry out the production, which gives rise to a lot of disempowerment and submission of the actors, that does not mean that this current does not work, but it works on a precisely hidden account, which is quite staggering, and therefore, the objective of ISEOR is to help companies to put in place a theory, to counter the harmful effects of this Fayollo-Taylorian organization and its principles, the aim is to say that organizations are complex, this complexity must be respected in order to successfully transform the organization. "*Generalized rise in the skills of all the actors of the company, such is the fruitful path but also the difficult challenge to be taken up by the company and the organization, which is no longer guided or protected by the Fayollo-Taylorian doctrine soon to be centenary. Indeed, the TFW virus (Taylorism, Fayolism, Weberism) is still alive in organizations. It advocates depersonalization and hyperspecialization which fragment the organization and disengage the actors as well as the dichotomy between design and production activities"*[8]

[6] Alazard C et Separi S. (.2010), « Contrôle de gestion : manuel et applications », édition dunod, page 523
[7] H. Savall, V. Zardet ; « Maîtriser les coûts et les performances cachés, Edition Economica, 2015, P : 15
[8] H. Savall, V. Zardet ; « Maîtriser les coûts et les performances cachés, Edition Economica, 2015, P : 13

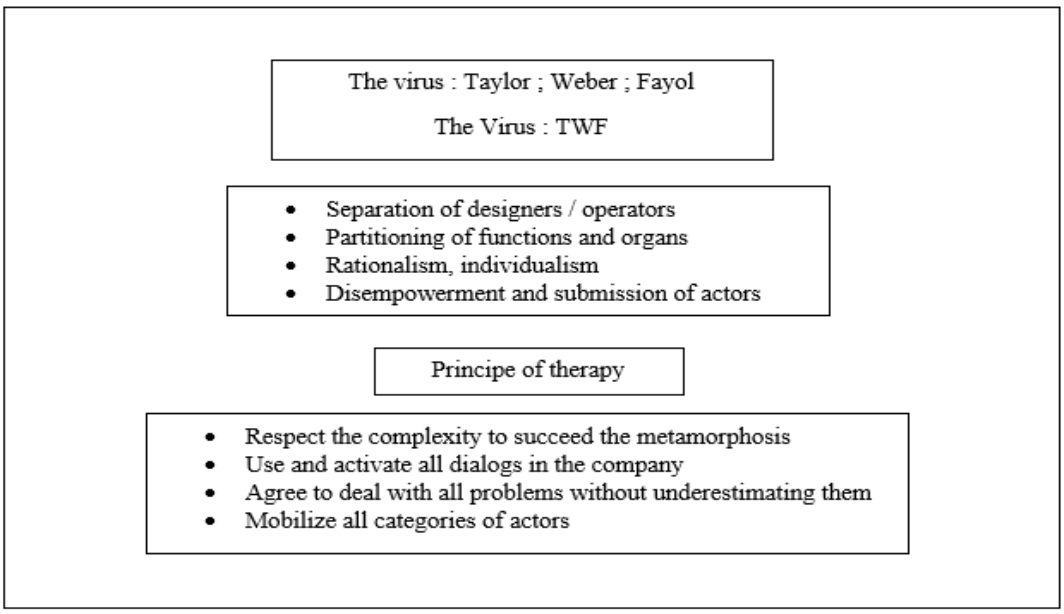

Figure 2: TWF limits and ISEOR therapy[9]

In any company, there are problems and operational difficulties, what we call: malfunctions, which in turn lead to additional costs (hidden costs), and to remedy them, it is necessary to mobilize all categories of actors, starting with the logistics and maintenance agent, up to managers and shareholders. So the idea is to rearticulate the human and the economic and the technical, by restoring energy flows and by activating all areas of dialogue in companies.

1.3. The hidden costs and dysfunctions

There is a reciprocal relationship between a malfunction and a hidden cost. In fact, a malfunction leads to costs that are not identified in conventional information systems, but which influence the final result. A hidden cost is the monetary translation of dysfunction regulation activities, it is not the dysfunction as such, but it is the additional costs spent to resolve it. All this can be summarized in the following diagram:

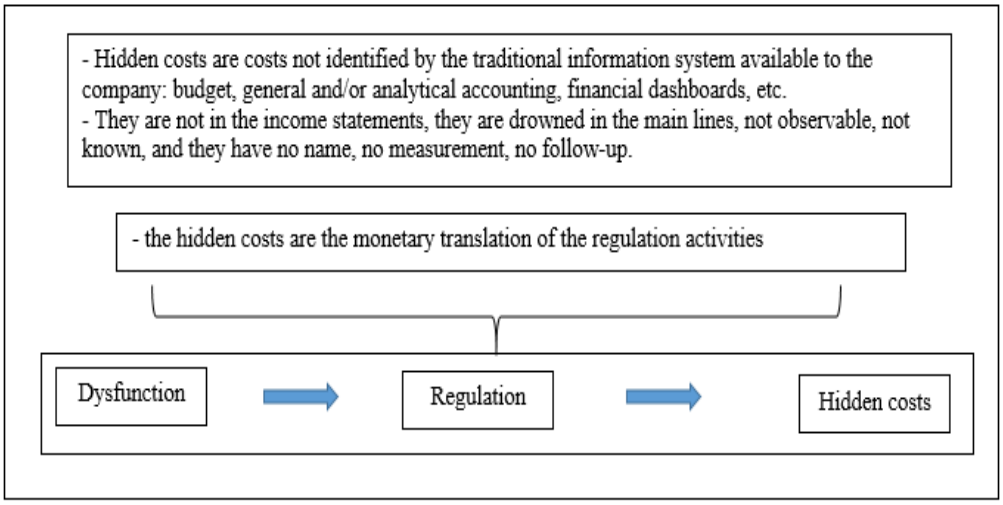

Figure 3: Dysfunction and hidden costs[10]

[9] Figure designed by us
[10] Figure designed by us

In this perspective, the human factor must be apprehended in order to be able to take part in the creation of added value, and expectations in terms of performance and control of socio-economic management go beyond the application of control rules. Management. "*The competitive environment is also profoundly renewed on an almost permanent basis. Crossed by major demographic, economic and social forces, the environment must be known, analyzed and interpreted by companies and their managers*".[11] The global economic crises that we have been experiencing since 1929 have given a new conception of human capital, highlighting its essential role in the sustainable performance of organizations. But the questions that arise are as follows:

- How do you know if a company has the right people, and has the right resources, in the right places?
- How to measure the contribution of skills acquired through training, or even more, the gain in productivity?

1.4. Management control (MC) and human resources management (HRM)

1.4.1. Definition

"Human resources management (HRM) is a set of functions and practices aimed at mobilizing and developing staff resources for greater effectiveness and efficiency, in support of the strategy of an organization (association, company, public administration, etc.)".[12]

1.4.2. The relationship between management control and HRM

So the management of human resources is a set of tasks, such as participation in determining the need, the call for applications, and then the selection, recruitment, training and support of staff leading to decisions that give results expected by the company. The economic valuation of these results is subject to socio-economic management control.

a) The strategic aspect:

"The management of human resources being more recognized as a strategic dimension of the company, the world of finance considers more and more the risk factor on the financial performance of the company, (as being) associated with a bad management of individuals."[13]

b) The social aspect:

(Jackson and Schuler, 1995; Ducharme, 1998), according to the theory of human capital, the knowledge, skills and competences held by individuals represent, in the same way as other corporate assets, a source of economic value for the firm. often superior to traditional assets such as machines, buildings, etc. (J-Y. Le Louarn, & T. Wils, 2001). Human capital has value and allows the organization to generate value through increased productivity and better adaptability. Human capital includes the capabilities, knowledge, skills and experience of personnel.) *"D. McGregor (1960) proposed a theoretical model of two types of human behavior: theory X and theory Y. It is on the model of theory Y that management control by results was built. This therefore assumes that such a theory is concretely at work in organizations. It is based on a Y model of human behavior, going hand in hand with participatory management by objective (PMO), which itself is based on the theories of*

[11] Strategor . (2004), « Politique générale de l'entreprise », édition Dunod, page 17.
[12] Meier O. (2009), « Dico du Manager », édition Dunod, paris, page 95
[13] Chrétien. L., Arcand. G, Tellier. G et Arcand M. (2005), « Impacts des pratiques de gestion des ressources humaines sur la performance organisationnelle des entreprises de gestion de projets », Revue internationale des relations de travail, N° 1 Février, page 109

individual motivation developed by F. Herzberg (1991) and A. Maslow (1954). »[14] The human factor plays an important role in the success and dynamism of organizations. Development or failure are often due to the degree of mobilization and motivation of men. It is therefore very important to have a clear vision of the organization, via socio-economic management control.

c) The aspect of performance

The purpose of socio-economic management control is to articulate the HR logic (staff, jobs, skills, training, recruitment, remuneration, etc.), and the financial logic (optimization of salary costs), and to present the quantitative and qualitative indicators. performance measurement. *"Performance management must be a compromise between adapting to external changes and maintaining organizational consistency to make the best use of resources and skills."* [15] The performance of a company constitutes a comparative advantage compared to its competitors both in its strategy and in its organization, and the measurement of this performance constitutes a lever to guide the behavior of the actors of an organization as well as to act on their motivation. The term performance is a word coming from the English "to perform", itself derived from the old French "performer" meaning to accomplish, *"performance therefore requires an interdependent global vision of all the internal and external, quantitative and qualitative parameters. , technical and human, physical and financial management".*[16] *"We are talking about the financial performance of a company measured using ratios; but in the same company, the heads of the commercial function or those of the production function will have different ideas about the performance criteria."* [17]

In the managerial sense, the term performance means all the efforts made to develop the financial result of a company, while optimizing the consumption of its available resources, "*the term performance is defined as the combination of efficiency and 'efficiency'*". [18] The performance of a company is based on a global and integral vision of all the parameters, whether internal and external, quantitative and qualitative, technical and human. The manager seeks overall performance, while integrating several levels of evaluation on the different cycles of the company:

- Purchase-supplier cycle: this is the availability of raw materials at the best quality and at the best price. ;
- Sales-customer cycle: it is the competitiveness on the market or the value-cost difference;
- Human resources cycle: it is the good management of the personnel (competence, organization, recognition, evaluation;
- Immobilization cycle: it is to ensure a good heritage for the company;
- Finance & cash cycle: this is profitability;
- Production and manufacturing cycle: it is a permanent development of productivity, and a continuous improvement of quality;

Several studies (Argyris, 1952; Ridgway, 1956) showed that the establishment of a control system could give rise to dysfunctional behaviors inconsistent with the objectives of the organization, it therefore appears that the problem of control is above all that of the control of

[14] Loning, H, Malleret, V.,Méric, J., Pesqueux, Y., Chiapello, E., Michel, D et al. (2008), « Le contrôle de gestion, organisation, outils et pratique », édition dunod, page 174.
[15] Alazard C et Separi S. (2007), « Contrôle de gestion : manuel et application », édition dunod, page 20
[16] Alazard C et Separi S. (2010), « Contrôle de gestion, manuel et applications », 2 éditions dunod, page 16
[17] Bourguignon A. (1995), « Peut-on définir la performance », une revue française de comptabilité », N° 269-juillet/aout 1 page 61
[18] Alazard C, Separi S. (2007), « Contrôle de gestion, manuel et applications », édition Dunod, page 15

individuals (Merchant, 1998). *"Men act according to reasons, that is to say considerations which can serve to justify the action carried out, which have a certain normative force, which are therefore opposable and not exclusively personal. The organization must therefore face up to these human behaviors and take action. To do this, it will rely on management systems whose action will often be oriented towards the search for more performance."* [19] For forty years (40 years), ISEOR (Institute of socio-economics of companies and organizations) has identified five (5) major families of dysfunctions, which are fairly standard and that we will eventually find in other approaches therefore: absenteeism; work accidents; staff turnover; non-quality (or lack of quality); and then the direct productivity gaps or (the direct under-productivity), *"The company is considered as a complex whole comprising five types of structures (physical, technological, organizational, demographic, and mental) in interaction with five types of human behavior (individual, activity group, categorical, affinity group, collective)"*[20] These families of malfunctions directly impact the six major hidden cost items, which are: overconsumption of products or services; human overtime; salary supplements; non-production of goods or services; non-creation of potential; the risks. *"These are the dysfunctions, which can be classified into six families: working conditions, work organization, time management, communication-coordination-concentration, integrated training, strategic implementation. These six families constitute both explanatory variables of functioning and areas of solutions to the dysfunctions identified in the diagnosis of the company".* [21] For example, absenteeism, staff turnover, quality problems, will give us overconsumption of product or service, so we will call on a lot more temporary workers or fixed-term contracts, which is an additional cost. we will consume more raw materials if we are more in industrial or manufacturing production, which generates more human overtime and extra wages.

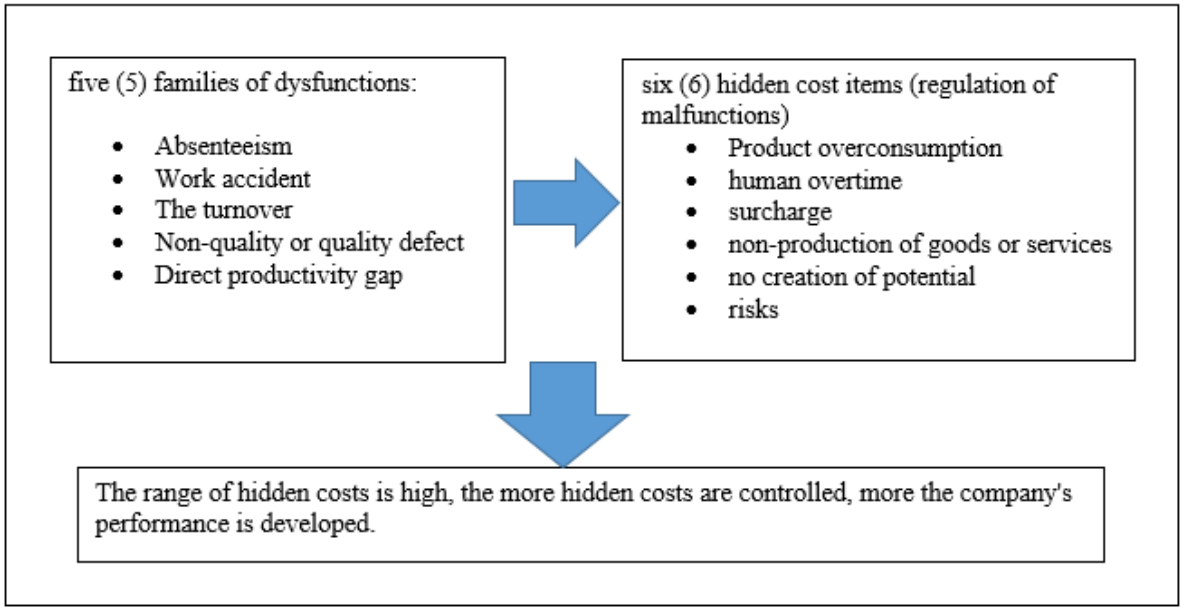

Figure 4: the dysfunction – hidden cost ratio[22]

Some studies have shown that: to be effective, performance management must be aligned with the management systems used within the organization, as well as some others have shown the

[19] Brillet Franck et Hulin Annabelle (2010), « vers un renouvellement des dispositifs prévisionnels des ressources humaines: la question de la complémentarité entre prévision et prospective. », Revue Management et Avenir 2010/6 (N° 36), p 251
[20] H. Savall, V. Zardet, (2015), « Maîtriser les coûts et les performances cachés, Edition Economica, P : 15
[21] H. Savall, V. Zardet, (2015), « Maîtriser les coûts et les performances cachés, Edition Economica, P : 20
[22] Figure designed by us

importance of complementarity between management practices human resources. Socio-economic management control is the subject of several works that demonstrate its added value to the performance of the company, and this through its positive impacts on human resources (Bernard Martory 2009). The main purpose of this work is to weave the links between the various works that precede it, while bringing a relevant touch to the Moroccan context.

1.4.3. Research question

Let's start from the idea that management control and human resource management are two profoundly different approaches, since management control is more oriented towards production aspects, improving productivity and optimizing costs and budgets. he human resources approach is interested in the subjects of culture, training, social climate, etc., which leads us to ask the following questions:

- How can we assess the consistency between the strategic plans of the company and the planning of its human resources?
- What is the relationship between; performance – cost – process of the HR function?
- What does the coordination between the management controller and the HRD bring to the company?

1.5. Socio-economic management control after COVID19

After the global health crisis, caused by the COVID19 pandemic, everyone is faced with an obligation of confinement which lasted a good period, during which the need to find a new working solution was imposed, since we cannot not stand idly by in the face of the crisis and all work has come to a complete halt, hence the adoption of remote working, it was an effective solution to overcome this critical phase. Remote work (or working in distance) requires the use of new technologies and computer tricks, something that has brought us back to the digitalization of work. The question of the role of a group of individuals comes from sociology and psychology (Katz, D., Kahn, R. L, 1966, Goffman, 1973). Every individual is the bearer of an identity that is specific to him, but which is shaped and shapes the role he is called upon to play in a given social context. According to Goffman, the individual, in interaction with others in a given context, therefore builds an identity through his role, that is to say through a series of activities and behaviors expected by his status. within a given context. The individual is thus led to play a role in order to conform to a social order. But, still according to Goffman, distancing himself from the role in which he is confined, he can, thanks to a pre-existing identity, and to his own values, play another role, the one he wishes to occupy. In other words, the role is not given, but is constantly transformed in the social context in which the individual or group of individuals evolves. In the field of socioeconomic management control, the role of the socioeconomic management controller, initially considered as a homogeneous structure of individuals, has been widely studied in the literature. The socio-economic management controller is an individual or group of individuals interacting with a social order of the organization. His role, which shapes his identity, is in line with what the organization expects of him, especially in the social aspect.

2. DIGITALIZATION

2.1. What is digitization?

According to (Ross, Beath and Sebastain, 2017), We consider a company is digital, or digitized, when it has introduced innovative digital tools into its work process, such as ERP, Big Data, l artificial intelligence, social networks, etc., while meeting consumer expectations and developing more innovative products and services than competitors.

2.1.1. ERPs

ERP (Enterprise Resource Planning Systems) are a management system that consolidates information and data from the various departments and functions of the company with a view to having a global vision of the operation of the company and an understanding horizontal and targeted flow of information to improve the quality of the decision-making system. Thus, the auditor and operational role of the management controller is lightened thanks to the ERP, and gives way to that of the decision-maker and the management of the strategy, he has direct access to the information necessary for the exercise of his activity, also, he saves time in terms of collecting information, he can easily update them, he can also edit reports such as dashboards easily and at any time. Indeed, the majority of management controllers claim that it is thanks to new information management technologies that their role has gone from being a simple technician to that of an indispensable adviser for decision-making. (Siegel and Sorensen, 1999)

2.1.2. Big Data

The easy access to new information technologies, the multitude of data sources have led researchers to find new techniques to collect, store, analyze and interpret information, thus the concept of Big Data was born. or big data, big data or massive data. Big Data is a set of digital data from various sources for personal or professional purposes: emails, documents, databases, images, videos, sounds, texts, financial transactions, exchanges on social networks, smartphones, GPS locations, etc. Otherwise, Big Data is a giant and voluminous database allowing real-time access to several information from different sources that cannot be managed by simple and traditional tools and software. To better understand this huge database that is Big Data, you have to go around its 5Vs: Volume, Speed, Variety, Veracity and Value.

- Volume: corresponds to the huge streams of information generated every second, just think of all the emails, tweets, photos, videos, that we produce and share every second.
- Velocity: corresponds to the speed with which data is produced and moved. To better understand this speed, just think of a simple message on social networks: in the blink of an eye, it is written, transmitted, shared and goes viral. Indeed, Big Data must provide the right answer at the right time thanks to high-performance software with great computing power.
- Variety: this corresponds to the different types of data stored: only 20% of data is structured: such as sales transactions per customer… the rest is unstructured, such as images, videos, messages… Big Data has this capacity to distinguish, to analyze, to appear and to recognize and to classify this information.
- Veracity: this element refers to the credibility of the data and whether they are reliable: since Big Data is a massive database of all kinds and types of information, it is difficult to verify the validity, the accuracy and precision of this information
- Value: this is the most important V, it is the added value of Big Data, the one that creates what is called competitive advantage, it is also the profitability drawn from the harvest of the information, indeed, there is no point in having tapped into this giant database without making a profit or having a return on investment

2.1.3. Artificial intelligence

Artificial Intelligence (AI) is a process of mimicking human intelligence that relies on the creation and application of algorithms executed in a dynamic computing environment. Its purpose is to enable computers to think and act like human beings. To achieve this, three components are needed:

- IT systems
- Data with management systems
- Advanced AI algorithms (code)

To get as close as possible to human behavior, artificial intelligence needs a large amount of data and processing capacity.

2.1.4. Social networks

Social networks (social media) are all the websites, mobile applications and platforms that allow you to create social links online. These are systems that offer their users tools and interfaces conducive to interaction. There are a lot of social media today. Some are dedicated to particular themes, others are limited to geographical areas or communities (school or business social networks, for example, etc.). Among the best known are:

- Facebook,
- Instagram,
- Twitter,
- LinkedIn,
- Viadeo,
- Pinterest,
- Tiktok,
- Youtube

3. THE ROLE OF SOCIO-ECONOMIC MANAGEMENT CONTROLLER AFTER COVID19

3.1. From the role of supervisor to the role of partner

The role of the social management controller is to monitor the activities within the firm, and especially the social activities. From the perspective of agency theory, the main role of the management controller is to ensure that the actions of the operational manager take place in accordance with the interests of the manager, and without deviation from the centrally desired objective. This old mission is still relevant today, and is actually hidden behind an apparent piloting aid (Bourguignon, 2003; Fornerino and Godener, 2006). This steering assistance function close to operational staff is the opposite of the monitoring function: the management controller is the one who advises and helps in decision-making, mirror or "business partner" of the manager on whom he depends (Ardoin and Jordan , 1979; Sathe, 1983; Chiapello, 1990; Löning et al., 2003; Lambert and Sponem, 2009). According to Sathe, these two roles are not incompatible, and can be exercised by different people (Sathe, 1983).

3.2. From the role of supplier to the role of technician.

In order to obtain this reliability of information, the socio-economic management controller is often forced to devote a large part of his time to "dirty work" (Lambert and Morales, 2009; Morales and Lambert, 2013): the repair of errors generated by the operational staff or the socio-economic management controllers themselves, which is mandatory for the sake of reliability. In other words, raw data from information systems must be reprocessed or corrected before it can be usefully interpreted and used in decision-making.

4. DISCUSSION AND CONCLUSION

The question that arises is that in a digitized company, what is the role of the socio-economic management controller? We can say that digitalization can simplify the work of the socio-economic management controller, while attenuating his mission as controller, i.e. he will be considered as an adviser to the manager fully. When a company goes digital, a new distribution of tasks appears, and this is where the socio-economic management controller will be obliged to play the role of conciliator between his control mission (to report to the manager the data he needs) and advice (to analyze the data that is controlled by digital tools). This situation can be remedied by striking the right balance between the necessary monitoring role to make the data

more reliable, and the role of essential partner to give meaning and value to the data that can be used directly by managers. In this context, which requires the use of new technologies to ensure qualified and efficient remote work, socio-economic management controllers try to actively influence the digitalization of their companies by participating in management committees dealing with issues related to technological issues. , to ensure the relevance of information and the performance of their companies, in favorable and desirable working conditions, hence the principle of BIG DATA is essential from multiple sources of data outside the company. In addition, the socio-economic management controller spends considerable time collecting data in the company, and this is where digitalization can play a favorable role for him, because it will allow him to minimize the time for collecting data. data through the use of digital tools, and likewise he will devote more time to analysis and advice, but the concern for the reliability of the data collected remains ever present, because they are collected by operational staff who are sometimes qualified by my negligence and lack of accuracy. This reorientation on the role of data reliability led in some cases to the refocusing of the function. Where in recent years, we had rather witnessed a decentralization of the function, and a diversification of the roles assumed, between the local controllers close to the operational ones, and the central controllers in small number, closer to the top management, and transmission belt towards the external actors of the company, we are once again witnessing teams repositioned at the headquarters of the companies, responsible for taking care of everything! Very often, moreover, the local management controller has not disappeared, but he depends on the central management controller, and he is "placed" with the operational staff rather in the role mentioned by Bourguignon (2003) of decentralized supervision. So there is a rather important idea to take into account, it is the profile of the socio-economic management controller, because in a digital environment, in addition to managerial, accounting and financial skills, the socio-economic management controller must master knowledge in the field of IT and information systems, because this component has become a key success factor. Experiences have shown that in companies that master sophisticated and efficient digital tools, which allow quick access to the results of data searches, where all the conditions are in place for the management controller to reduce the time spent data collection, to focus more on an advisory and analytical role within the company (the study by Järvenpää (2007)). To conclude, we can say that the role of management controller in general, and the role of socio-economic management controller in particular, is in permanent motion, and to accompany this character of mobility, digitalization remains very crucial in terms of support and supporting businesses and institutions, especially in a world characterized by a risky and uncertain future.

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LIFELONG LEARNING, ADDITIONAL EDUCATION AND ATTENDANCE OF SEMINARS AND EDUCATION OF EMPLOYEES IN PRIVATE AND STATE-OWNED ENTERPRISES IN THE REPUBLIC OF CROATIA

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ABSTRACT
The aim of this paper is to find out whether employees in private and state-owned companies in the Republic of Croatia are ready to study all their lives, enrol in additional school or college and whether they like to attend seminars and trainings. Education is the starting point of the company's progress and with the individual efforts of each employee the basis for gaining a competitive advantage and creating knowledge of society as a whole, knowledge in companies and individual development of each employee. Lifelong learning of every employee is one of the ways to achieve the company's business goals. The sum of the individual levels of knowledge and daily learning of all employees makes up the overall level of knowledge in a company. Human resources in companies are the bearers of all business activities and all employees and managers should be aware of the importance of lifelong learning for individual employee development as well as for company development. The survey on employees' attitudes towards lifelong learning was conducted on a sample of 273 respondents in private and state-owned companies in the Republic of Croatia. According to the results of the research, a high percentage of employees are ready to study all their lives, enrol in additional school or college and like to attend seminars and trainings.
Keywords: *lifelong learning, additional education, seminars and trainings, employees, managers*

1. INTRODUCTION

Lifelong learning, additional education and training are becoming a need of employees to be more competitive in the labour market and more useful in everyday business to the employer where they currently work. "Adult education is aimed at acquiring and developing key competences in lifelong learning and at acquiring the knowledge and skills needed to acquire sets of learning outcomes or qualifications. In accordance with the Adult Education Act (Official Gazette, No. 144/2021), adult education is part of the education system of the Republic of Croatia." (Ministry of Science and Education: 2022). During the work of employees in various companies, there may be a need for retraining of completed professional qualifications of employees. Whether employees are ready to enrol in an additional school or faculty will be shown by the results of a survey conducted on 273 respondents (employees) in private and state-owned companies in the Republic of Croatia. For employees to develop their competencies, it is desirable to actively participate in seminars, trainings and workshops organized by the company in which they are employed, but they can also participate on their own initiative in trainings and seminars to improve employee skills and knowledge. The Adult Education Act (Official Gazette, No. 144/2021) defines lifelong learning as all forms of lifelong learning whose purpose is to acquire competencies for personal, social and professional needs and for the needs of the labour market, and according to the same Act, adult education is defined as an activity of formal adult education performed by an authorized legal entity according to approved programs, with the aim of acquiring people's competencies for personal, social and professional needs, and for the needs of the labour market.

Lifelong learning is defined as intentional learning to improve quality of life (Dunlap and Grabinger, 2003). The sum of all individual knowledge and competencies of employees in a company makes the overall level of knowledge in that particular company and those companies that have a higher overall level of knowledge will gain a competitive advantage over other companies. Managers in the companies they run should take care of the company's needs for specific knowledge of employees, the required level of employee education for certain jobs, and continuous and useful employee training. The learning of all the people in the world and all the employees in companies around the world never stops. The need of the company for staff who can cope with the most challenging business conditions, unstable internal and external environment of the company (due to constant and unpredictable changes in business) and to change the diverse needs of customers or clients. According to research by Miklošević et al, managerial functions of organizing and planning are subject to numerous changes in business due to the COVID 19 pandemic. It becomes more difficult for managers to plan and organize all business activities due to sudden and unpredictable sick leave. Due to the daily illness of employees, it becomes more difficult to organize seminars, employee training and teamwork to limit the number of participants and maintain distance between people, i.e. adherence to all prescribed epidemiological measures required for the COVID 19 pandemic (Miklošević et al, 2022). Porter (1985) emphasizes the strategy of differentiation as a competitive advantage of the company, which implies that the company offers a unique product. How will the company offer a unique product? Without human resources, who develop their career and professional progress with constant learning and effort, the company can't be more competitive than others. Human resources are the bearers of all activities in companies, they can influence the company to go in the direction of making a profit and meeting the needs of customers and clients, and they can also influence the company to become unsuccessful. For employees to be satisfied with their jobs and give the maximum in their workplace, they need to be satisfied with working conditions, the attitude of managers towards them, the working atmosphere and ultimately the salary for their efforts and work. Unsatisfied human resources will not even strive with their competencies to gain a competitive advantage of the company in which they work, they will not be motivated to achieve personal success that will benefit the company in which they work. The sum of each individual success and effort of employees makes the total knowledge in the company, the overall competencies of a particular company and the level of ability of the company to manage to meet the needs of all its customers or clients. Employees represent the company in which they work, affect the company's image in public and in the eyes of customers, so managers need to take constant care of human resources, their development and job satisfaction. On the other hand, if employees are satisfied and motivated to work, they will contribute more to the company in which they work, will have more motivation for daily learning and commitment, and attend training and seminars and, if necessary, complete additional school or college. Employers should reward the efforts of employees, invest in employee development and appreciate the efforts of each employee who contributes to the betterment of the company in which one is employed, which is reflected in a positive work atmosphere, employee satisfaction and business results. Sikavica et al (2008: 600) note that employees cannot show and develop their strengths and contribute to the development of competitive advantages of their organizations if employees are not motivated, if there are not enough employees in the company, and if the organization does not invest in improving their knowledge, skills. motivation and behaviour. According to Turkalj et al (2016: 17), managers face greater challenges than ever to allocate all available resources in order to achieve positive business results of the company.

2. LITERATURE REVIEW

Lifelong learning (LL) refers to the ability to continuously learn and solve new problems using available information while retaining prior knowledge (Zhao et al, 2022). The authors Ravlić and Zelenko (2011: 669) state that lifelong learning includes all activities related to lifelong learning, with the aim of improving knowledge, skills and abilities. Sikavica et al (2008: 724-725) point out that continuous education of employees is one of the most important forms of human resources management and development, and that modern organizations are investing more and more of their resources in education and training of employees. Management is increasingly realizing that continuous employee education is one of the most effective ways to achieve competitive advantage. Naimpally et al (2012) define lifelong learning as continuous inclusion in formal and non-formal education and ensuring that a person has the skills and abilities needed to continue their own self-education after completing formal education. Teamwork in companies contributes to the efficiency of the organization, the dissemination of new ideas and greater synergy within the company (Stanić et al, 2016). During employee meetings with management, new ideas are generated, experiences and observations of employees are exchanged, and mutual communication between employees and managers is improved. According to research by Miklošević et al (2022), employees want their superiors or managers to find more time to talk to them, to be more polite to them in communication and to keep an eye on their ego during the communication process. Lack of managerial time is seen by employees as a major obstacle in the communication process and a major reason for one-way communication between employees and managers. Malik, F. (2006) states that companies in developed and underdeveloped countries need good management and that management is the most important function in society. Bahtijarević-Šiber (1999: 16) points out that human resources are the total abilities, creative possibilities, knowledge, motivation, skills and loyalty of an organization (or society) and that human resources are the total intellectual and psychological energy that the organization engages to achieve goals and business development. In organizations, it is just as important to plan people, their skills and knowledge as it is to plan finances, and sometimes even more important. Finances are never forgotten, and until recently, people were very easily forgotten as the most important business and development resource that needs to be very carefully planned and managed even more carefully. (Bahtijarević-Šiber, 1999: 189). Managers in companies need to be the first to show by example that continuous learning is important to them and that employees can only advance based on their competencies, commitment in the workplace and expertise. Every learning is applicable during the work experience of employees and managers should encourage employees to develop their skills, involve employees in attending seminars and support employees on the path of learning, effort and commitment, which will bring many benefits for individual development and business development. There are many benefits to lifelong learning for both employees and the company. "Continuing education, professional and flexible people, high motivation, empowerment and participation, teamwork, adequate culture are simply a prerequisite and an effective way to achieve business and development goals." (Bahtijarević-Šiber, 1999: 15). Sikavica et al (2008: 123) point out that the success of an organization largely depends on the quality of human resources, i.e. their knowledge and abilities. Quality and capable employees, and especially management, will successfully respond to all challenges from the environment. That is why it is important for every organization to have qualified, educated and capable employees. We live in a time of a learning organization, and individuals and organizations as such must learn as well. The manager as a leader must be at the forefront of learning. "The knowledge of an organization is determined by the knowledge of its individuals, and through organized learning a synergy of knowledge can be achieved that again generates new knowledge and so on indefinitely if a secure future is desired as an individual, as an organization and as a whole community." (Sikavica et al, 2008: 474).

Formal forms of strategic management learning are not effective because they contain many assumptions that cannot be met in the real world because every situation is different. (Vrdoljak Raguž et al, 2013: 71-72). Lifelong learning includes both formal and non-formal forms of learning. With the completion of a certain level of education, it is necessary that every person, or every employee, learns informally, to develop their abilities and skills. Diverse work experience is also a way for each employee to learn, then attend seminars, workshops and complete additional school. The most important thing is that the employee is aware that he needs daily learning and that he will be more competitive in the labour market and able to cope with all challenges and demands in today's business, which is permeated by numerous changes, challenges and specific requirements. For a company's success, the ability of its owner to turn the collected information about customer needs into knowledge that can be used to make good business decisions is essential. (Goldstein, 2009: 53). Customers are focused on managers and employees and the goal of every company is to have as many loyal customers as possible to always ensure good sales of products or services of a particular company. Companies have a large amount of information in their business, which should be summarized and converted into knowledge (Business Intelligence). However, if the company does not have satisfied employees, all of the above will not be possible. Human resources are the bearers of all business activities in the company and the drivers of all changes in the company and the pillar without which managers cannot meet the needs and desires of their customers and clients. Mikloševič et al (2022) point out that, in addition to salary, employees also value intangible factors of job satisfaction, and the leading intangible factor of employee satisfaction at work is a good work atmosphere. The knowledge that employees acquire quickly becomes obsolete and it is necessary to master the ability to quickly accept new knowledge through the process of lifelong learning. Lifelong learning has a positive effect on employability (Sudarić, 2012: 74). By investing in human resources, primarily in lifelong learning, the set goal can be achieved (Kadlec et al, 2021: 669). Education and work skills have become a lifelong process in modern society. The characteristics of sustainable human resource management can vary from long-term orientation, employee care, employee participation, employee development, and employee collaboration. (Stankevičiūtė and Savanevičienė, 2018: 3). Many authors emphasize the importance of lifelong learning, as one of the ways to achieve business goals of the company. The competitiveness of each individual can be increased with daily and lifelong learning. Employers are looking for specific knowledge and skills when choosing employees to hire in their company, the demands of employers are increasing and more complex and those employees who are constantly making efforts to increase their knowledge will certainly be more attractive to employers in the labour market.

3. LIFELONG LEARNING OF EMPLOYEES, ADDITIONAL EDUCATION OF EMPLOYEES AND EDUCATION OF EMPLOYEES

Education is the foundation of the development of every society and individual. Human resources in companies are the bearers of all business activities, the source of new business ideas and the development of existing ones and will always be needed in the company, regardless of the development of new technology and digitalization of business. Whether employees are ready to learn all their lives at their jobs and whether they are ready to attend another school or college compared to the current one, and whether they like to attend seminars and trainings, will be shown by the results of a survey of 273 respondents, employees in state-owned and private companies in the Republic of Croatia. Lifelong learning lasts a lifetime for each individual, leads to the improvement or completion of individuals 'knowledge, skills and attitudes and depends on all available educational influences, including formal and non-formal." (Knapper and Cropley, 2000). Today, more than ever in all companies, employees are required to be agile in their daily work, responsible for the work done and continuous training

of employees by attending seminars and trainings. Managers who want to develop human resources capabilities in their companies are aware of the impact of human resources on the success and development of the company. For employees to be more competitive in the labour market, they should possess the key competencies that employers require for certain jobs. In today's turbulent times, in which changes and business are fast and unpredictable, to meet customer needs, employees should quickly adapt to market demands and the needs of employers for certain employee profiles. Employers have a need for agile staff, who are ready to learn all their lives, educate themselves if necessary, develop communication skills, attend seminars and trainings and contribute to the development of the company in which they work through personal development. The sum of all total competencies and knowledge of employees is reflected in the success of the company in which they work and makes the overall knowledge and competitive advantage of the company. Therefore, it is very important that employees have the will and desire for personal professional development, continuous learning and training and retraining, if necessary, because only in this way the company in which they work will gain a competitive advantage. Knowledge is the intangible capital of the company and of each society as a whole. By attending seminars and trainings, employees acquire certain new and specific knowledge, which they will later use in their daily work, in practice. Competencies refer to knowledge specific to an area that is applicable in the present and future. (Le Deist and Winterton, 2005). Competences that employees have and that need to be upgraded and developed throughout their lives are something that no one can take away from them, it is an intangible asset without which they cannot compete with employers and that wealth should be constantly developed and increased throughout life and working life. According to Turkalj and Miklošević (2017), human resources are the bearers of all business activities in the company, they are responsible for the growth and development of the company, improvement of business processes and satisfaction of end customers. People are the only economic and business resource that can be self-developed and where the costs of developing an organization can be fully transferred to an individual or shared with him. Human resources, their knowledge and abilities are the only resource that is not reduced by use but grows. (Bahtijarević-Šiber, 1999: 26). Sikavica et al (2008: 91) state that the dominant problem and the most important task of management is the management of human resources, intellectual capital and knowledge, or "intangible" assets, and it turns out that it is three to four, and sometimes ten or more times of “tangible” assets. Human resources need to invest in their own knowledge and skills, in addition to investment in employees by employers. It is no longer enough for employees to simply carry out the orders of their superiors, but they must act proactively (Miklošević and Turić, 2012: 625).

4. RESEARCH METHODOLOGY AND RESEARCH RESULTS

The survey was conducted in March and April, on a sample of 273 respondents (employees) employed in private and state-owned enterprises in the Republic of Croatia (N = 273, without regional restrictions). Private companies also include the founders of their own companies. Only employees were examined, regardless of the number of years of age and education. The following scientific methods are used in the research: method of proof, sample method, description, comparison, survey method and statistical methods.

The following research questions were asked:

- *RQ1: Are employees ready to learn all their lives?*
- *RQ2: Are employees willing to enrol in additional school or college if required?*
- *RQ3: Do employees like to attend seminars and trainings?*
- *RQ4: What do employees think, will they need to finish extra school or college in the future?*
- *RQ5: What do employees estimate, will they work until retirement in their current job?*

The following hypotheses have been set:

- *H1: Employees are not ready to learn all their lives*
- *H2: Employees are not ready to enrol in an additional school or college*
- *H3: Employees like to attend seminars and trainings*

Table 1 shows the respondents by age. The youngest respondent (employee) is 19 years old and the oldest respondent is 63 years old. 25% of respondents are up to 35 years old, 50% of respondents are up to 40 years old, while 75% of respondents are up to 48 years old, the age difference between the youngest and oldest respondents is 44 years.

N	Valid	273
	Missing	0
Mean		41.00
Median		40.00
Minimum		19.00
Maximum		63.00
Percentiles	25	35.00
	50	40.00
	75	48.00

Table 1: Age of respondents
(Source: author's work based on the results of the research)

22.0% of men and 78.0% of women participated in the research, as shown in Table 2.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	60	22.0	22.0	22.0
	female	213	78.0	78.0	100.0
	Total	273	100.0	100.0	

Table 2: Gender of respondents
(Source: author's work based on the results of the research)

According to the completed professional qualifications of the respondents (Table 3), most of the respondents have completed college (50.5%), followed by high school (31.9%). A smaller number of respondents have completed a doctorate (2.9%), while 14.7% of respondents have completed a master's degree.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school	87	31.9	31.9	31.9
	college	138	50.5	50.5	82.4
	master's degree	40	14.7	14.7	97.1
	doctorate	8	2.9	2.9	100.0
	Total	273	100.0	100.0	

Table 3: Completed level of education of respondents
(Source: author's work based on the results of the research)

Table 4 shows the type of employer of the respondents with whom they are employed. The largest number of respondents is employed in a state-owned company (59.7%), followed by a private company (31.9%), while a smaller number of respondents (8.4%) are founders of their own company.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	state owned company	163	59.7	59.7	59.7
	private company	87	31.9	31.9	91.6
	founders of their own company	23	8.4	8.4	100.0
	Total	273	100.0	100.0	

Table 4: Completed level of education of respondents
(Source: author's work based on the results of the research)

The total length of service of the respondents is shown in Table 5. The employee with the lowest length of service has 1 year of service, and the employee with the highest length of service has 39 years of service. 25% of respondents have up to 10 years of work experience, 50% of respondents have up to 16 years of work experience and 75% of respondents have up to 22.5 years of work experience.

N	Valid	273
	Missing	0
Minimum		1.00
Maximum		39.00
Percentiles	25	10.00
	50	16.00
	75	22.50

Table 5: Total work experience of the respondents
(Source: author's work based on the results of the research)

Respondents were asked if they were willing to learn all their lives (Table 6). A high percentage of respondents answered that they are ready to learn all their lives (80.2%), while 19.8% of respondents are not ready to learn all their lives. The positive awareness of the respondents about the importance of lifelong learning is visible.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	219	80.2	80.2	80.2
	no	54	19.8	19.8	100.0
	Total	273	100.0	100.0	

Table 6: Readiness of employees for lifelong learning
(Source: author's work based on the results of the research)

Furthermore, employees were asked if they would enrol in an additional school or college (Table 7), if necessary for the job they are employed in. A high percentage of respondents stated that they would enrol in an additional school or college (70.0% of respondents), while 30.0% of respondents would not enrol in an additional school or college, these are employees with many years of service or respondents with the highest level of education.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	191	70.0	70.0	70.0
	no	82	30.0	30.0	100.0
	Total	273	100.0	100.0	

Table 7: Readiness of employees to enrol in an additional school or college
(Source: author's work based on the results of the research)

Respondents were further asked if they would like to attend seminars and trainings (Table 8). 85% of employees like to attend seminars and trainings, while 15% of employees do not like to attend seminars and trainings. A high percentage of employees like to attend seminars and trainings.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	232	85.0	85.0	85.0
	no	41	15.0	15.0	100.0
	Total	273	100.0	100.0	

Table 8: The desire of the respondents to attend seminars and educations (Source: author's work based on the results of the research)

Table 9 shows the assessment of employees as they estimate whether they will work until retirement in their current job. 24.9% of respondents answered that they think they will work until retirement in their current job, 39.6% of respondents think that they may work until retirement in their current job, while 35.5% of respondents think that they will not work until retirement in their current job.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	68	24.9	24.9	24.9
	no	97	35.5	35.5	60.4
	maybe	108	39.6	39.6	100.0
	Total	273	100.0	100.0	

Table 9: Employee assessment of the duration of employment in the current job (Source: author's work based on the results of the research)

How employees estimate whether they will need retraining in the future is shown in Table 10. A small percentage of respondents (12.1%) estimate that they will need retraining in the future, 39.2% of respondents think that they may be requalification of completed school is required, and the largest number of respondents (48.7%) think that they will not need retraining of completed school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	33	12.1	12.1	12.1
	no	133	48.7	48.7	60.8
	maybe	107	39.2	39.2	100.0
	Total	273	100.0	100.0	

Table 10: Employee assessment of the need for retraining of the completed school (Source: author's work based on the results of the research)

Table 11 shows whether there is a statistically significant difference in respondents' attitudes towards readiness for lifelong learning.

Table following on the next page

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Readiness of employees for lifelong learning	Equal variances assumed	9.546	.002	-1.419	271	.157	-.08263	.05822	-.19725	.03199
	Equal variances not assumed			-1.574	111.759	.118	-.08263	.05251	-.18667	.02141

Table 11: Difference according to the gender of the respondents in their attitudes about the readiness for lifelong learning
(Source: author's work based on the results of the research)

Whether there is a difference according to the gender of the respondents in their attitudes about the readiness for lifelong learning is shown by the independent samples t test. The F value is statistically significant, so we look at another value of t. T is related to p> .05, which means that there is no statistically significant difference in the attitudes of the respondents about the readiness for lifelong learning according to gender. According to the survey results, it is concluded that a high percentage of respondents (80.2%) are ready to study all their lives, a high percentage of respondents would enrol in additional school or college (70.0%) and a high percentage of respondents like to attend seminars and education (85.0%). One third of respondents (35.5%) are of the opinion that they will not work in their current position until retirement, while a small number of respondents think that they will need to retrain after finishing school (12.1%) in the future. Given the results of the research, the first hypothesis (*H1: Employees are not ready to learn all their lives*) is not accepted, because a high percentage of employees are ready to learn all their lives. The second hypothesis (*H2: Employees are not ready to enrol in an additional school or college*) is also not accepted, as a high percentage of employees are willing to enrol in an additional school or college. The third hypothesis (*H3: Employees like to attend seminars and trainings*) is accepted, because a high percentage of employees like to attend seminars and trainings.

5. CONCLUSION

Lifelong learning is very important for the progress of the individual and the company and involves formal and non-formal knowledge, abilities and skills. When all employees are aware of the importance of lifelong learning and in a situation where the individual invests in their knowledge as well as the employer, then the company will have the opportunity to gain a competitive advantage. Every employee becomes more competitive in the labour market if he continuously increases the level of his knowledge and if he strives to acquire the necessary skills and abilities that employers expect. The sum of all individual levels of knowledge and learning of each individual makes the total level of knowledge in the company, needed to meet the needs of even the most demanding customers and clients. According to the survey results, employees in private and state-owned companies in the Republic of Croatia are ready to study all their lives (80.2%), are ready to enrol in additional school or college (70.0%) and like to attend seminars and trainings (85.0%). A smaller percentage of respondents (12.1%) believe that they will need to retrain after graduation in the future.

The recommendation to employers is continuous investment in human resources as an intangible resource without which it is impossible to achieve organizational goals, and the recommendation to employees is daily learning and commitment to acquire a high level of knowledge, specific skills and agility, to be more competitive in the labour market.

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ANALYSIS OF LENDER TRUST IN A RISK SITUATION

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ABSTRACT

Debt is a lucrative business based on a financial exchange between two trustworthy parties. Since recent years, the debt financing industry has grown in terms of traded volumes. Global debt recorded an evolution of 3.45% with 258 trillion USD in the first quarter of 2020 compared to 249.4 trillion USD in the first quarter of 2019. This work aims to study trust in the lender-borrower relationship. We established an experimental framework in which the respondents had to choose between two risky choices during a debt transaction. For this purpose, we conducted a Pairwise Lottery Choice questionnaire at two levels (control and experimental situation) via the computer-assisted dissemination method Computer-Assisted Web Interviewing (CAWI) to 113 students in which they had to answer risk-free questions (control situation) followed by risky broadcasts (experimental financial situation). The results of Mc Nemar's chi-square test and the Random Effect Logistic Regression showed that the students expressed distrust behavior when moving from non-risky context to the risky context. The study revealed the absence of the impact of age and gender of the sample on its borrower's trust. In addition, we found a breach of the expected utility principle. Finally, the study showed that trust is a very sensitive psychological state. The topic are based on specific cognitive biases closely associated with trust / mistrust: the reference point, the affect heuristic and time preferences.

Keywords: *Trust, Recovery, Debt*

1. INTRODUCTION

The concept of trust has been widely mentioned in economic, psychological, sociological, and political science studies (Laurent, 2019). Defining the notion of trust has been a challenge for scientists (Bachmann & Zaheer, 2006; McKnight & Chervany, 1996; Williamson, 1993). Most definitions are based on a well-defined context, trust remains associated with a specific case or situation. Economists give great importance to the concept of trust (Bromiley & Harris, 2006; Fukuyama, 1995). For Putnam et al. (1994), trust represents the infrastructure of the economy. The notion of trust has been explicitly studied in a financial microeconomic context. The financial activity develops and strengthens in climates characterized by the presence of strong trust between agents (Guiso et al., 2004). Trust is a catalyst for economic agents to adopt and develop financial actions such as investment (Berg et al., 1995; Guiso et al., 2008), savings (Agnew et al., 2007), and debt (Jiang & Lim, 2018). The debt transactions between two parties explicitly illustrate this process of trust which was established to ensure the transfer of a financial flow from a lender to a borrower, under a repayment agreement on maturity. In the event of partial or total degradation of confidence during a debt transaction, the lender relies on a legal and financial mechanism aimed at recovering the debt, often known as the collection activity. This article seeks to detect the presence of the lender's confidence in the face of his borrower in a risky situation, by adopting a theoretical evaluation model for the proposed

choices. In other words, perform a paradigm based on a decision with two risky possibilities (situations 1 to 12). For this, we will rely on the internet-assisted interview method (CAWI) to put the respondents in a situation of *In vivo* interaction. The structure of the paper is presented as follows: Section 2 discusses the relationship between indebtedness and trust. Section 3 presents the experimental design and the hypotheses to be verified. Section 4 exposes the obtained results. Section 5, presents the contribution of behavioral economics, and section 6 proposes a discussion and a conclusion.

2. DEBT AND TRUST

One of the major pillars in a debt activity is trust. Duarte et al. (2012) found that trustworthy borrowers are highly likely to accept the sums requested from lenders. Jiang & Lim (2018) studied the impact of trust on household debt. They found that households that express trustworthiness relative to others are less likely to have problems related to collection activity, such as late payment of bills or accumulation of debt. Recently, with the development of technology, debt has taken on a form of electronic exchange between several anonymous parties. According to Claessens et al. (2018), the fintech sector has experienced rapid growth in recent years, particularly “Fintech Credit”. It is an online activity that includes all types of credit granted beyond commercial banks' reach. The "Fintech Credit" market has experienced accelerated development in recent years, the volume of transactions has increased from 11 billion USD in 2013 to 419 billion USD in 2017 (World Bank, 2019). Peer-to-Peer Lending (P2P Lending) is one of the types of fintech loans that have experienced great growth. It is an instrument that brings together two anonymous individuals (lender-borrower) in an electronic exchange platform. The system trust of P2P Lending has been the respondent of several research works. Chen et al. (2014) found that the quality of the information presented to the borrower is an important element in the establishment of trust between the lender and the borrower, the quality of the service, and the level of protection offered by the P2P Lending platform are two key factors for the lender to trust the procedure and increase their willingness to lend. Thakor & Merton (2018) studied trust in lending organizations: the bank and P2P Lending platforms. Besides, Banks are more trustworthy than P2P Lending platforms, thanks to these establishments' institutional and financial weight. The rational analysis approach considers debt as a profit-making activity, in which the lender adopts a cost-benefit analysis and gives a sum in return for an anticipated profit on the loan in the form of interest. Trust is linked to the level of risk associated with the debt operation, in the event of high risk, the lender refuses to grant the loan. The emergence of the discipline of behavioral economics has made it possible to question the evidence of the rationality of agents, particularly in terms of decision-making. According to the principles of this discipline, individuals are unable to explicitly evaluate rational choices in situations of risk. The work has shown that the judgment and action of an individual faced with a debt situation are different from the behavior of a rational agent. The use of behavioral models of decision-making will provide further explanations to understand the behavior of the lender in a risky situation, especially when trust becomes a motivation for the lender to react in an irrational form.

3. EXPERIMENTAL DESIGN AND HYPOTHESES

Trust remains an essential pillar in commercial relations. The fluidity and speed encountered in certain transactions are often characterized by a strong presence of trust. For this, we want to detect the positioning of trust in situations of choice of indebtedness and recovery. Rational agents will implement a choice analysis tool based on the calculation of maximum utility. The presence of trust is restricted only when it is associated with rational choice (Williamson, 1993).

The first experiment is developed in the form of the within-group design, that is to say, that the respondents will participate in the experiment twice: first, they will answer the questions-situations in a neutral framework (participate in a game of chance), the answers collected are associated with the capacity of the respondent to evaluate the risk and to adopt the rational choice. Secondly, a small change will affect the statement of the experience while keeping the same answers, this time the respondent will embody the role of a lender who seeks to recover a sum lent under a risky context. The design of the experience consists in understanding the impact of trust on the choices of the respondent and its relationship with rationality. Indeed, contrary to the primary situation, the respondent-lender will be faced with two risky choices to evaluate (Status quo, Recovery), of course, the recourse to the choice of recovery will characterize the lack of confidence that the respondent feels towards the lender-borrower. The second level of experience will give importance to the action of the respondent-lender in the face of the recovery action, and his behavior in a behavioral game. Thanks to the Psytoolkit platform (Stoet, 2010, 2017), the respondents will answer the questions-situations presented from their homes (in vivo). We will analyze the analytical deviations. The hypotheses to be verified are intended to capture the behavior of the lender in a risky situation **(H1): In the event of risk, the lender becomes less confident in the borrower,** and to examine the existence of a behavioral change associated with the gender and age of the respondent **(H2): the gender and age of the lender impact the level of trust in a risky situation.**

4. RESULTS

The dissemination of the experience was carried out via digital channels such as social networks and Peer-to-Peer Messenger Applications. The number of participants who completed the questionnaire was 113 students of Moroccan nationality, 97.3% are young people under 40 years old. The share of participating women (n = 65) exceeds that of men (n = 48) at 15.04%. Participants have a good command of the internet tool and a good level of the French language. The first hypothesis to be verified is to determine the lack of trust in the event of a risky situation. We presented the respondent with 12 double-choice situations. The parameters that have changed were at the level of the utterance framework. The first situation whose risk and neutral carries the following statement: (You participated in a game to win 1000 MAD. You are offered the following 2 choices: Choice 1 and Choice 2. Which do you think is the most favorable choice?), the second situation is characterized by the presence of a financial risk, the statement is presented in the following form: (You have lent a friend 1000 MAD. What strategy would you apply to recover it?). The use of the non-parametric Mc Nemar test will make it possible to consider the respondent's behavior faced with the choice between two risky responses in a game of chance (the situations from 1 to 6) and faced with the choices between two risky debt strategies (the situations from 7 to 12). Mc Nemar's chi-square test is applicable when we want to identify a statistical change between the pre-treatment and post-treatment situation. In other words, the objective is to determine whether the variation of the "statement" parameter has an impact on the respondents under treatment. The behavior of the respondent to the question of indebtedness will make it possible to detect the presence of an aversion to risk, therefore the absence of confidence. This will be explicitly possible when comparing the answers provided in the first session in which the respondent expresses neutrality about risk (the questions of the game) and in the second session in which the respondent expresses an aversion to the risk of losing the amount lent. Trust will therefore be determined according to the choices made between the two situations. The answers collected also make it possible to detect the irrational behavior of the respondents, in particular when the choices made do not agree with the rational actions. The analysis of rationality will be dealt with explicitly in the discussion phase.

Pairwise Lottery Choice			Mc Nemar Chi-Square		
			Statuquo	**Recovery**	**Total**
(1000, 0,5 ; 0, 0,5)	**Combinaison 1-7**	Choice 1	8	18	26
(1000, 0,5 ; 0 ,0,5)		Choice 2	40	47	87
(1000, 0,5 ; 0, 0,5)	**Combinaison 2-8**	Choice 1	10	5	15
(900, 1)		Choice 2	35	63	98
(1000, 1) after one year	**Combinaison 3-9**	Choice 1	10	9	19
(900, 1) immediately		Choice 2	38	56	94
(1000, 0,9 ; 0, 0,1) after one year	**Combinaison 4-10**	Choice 1	6	5	11
(900, 1) immediately		Choice 2	29	73	102
(850, 0,6 ; 0, 0,4) immediately (150, 0,5 ; 0, 0,5) after one year	**Combinaison 5-11**	Choice 1	17	12	29
(750, 0,8 ; 0, 0,2) immediately		Choice 2	39	45	84
(650, 0,7 ; 0, 0,3) immediately (350, 0,5 ; 0, 0,5) after one year	**Combination 6-12**	Choice 1	21	11	32
(650, 0,75 ; 0, 0,25) immediately (350, 0,45 ; 0, 0,55) after one year		Choice 2	30	51	81

Table 1: Non-parametric Mc Nemar test

The six cases show a statistical significance ($p < 0.05$) between the first situation and the second situation. Most of the respondents opted for the "recovery" strategy even if its adoption is sometimes in some cases an irrational strategy. This shows that the respondents when they embody the role of the lender become more cautious and less confident. The second hypothesis consists in understanding the impact of the gender and age of the lender on the level of confidence in a risky situation. We will analyze all the questions that deal with the behavior of the respondents faced with the situation of indebtedness. First, we will check the dependence between the gender of the respondent and the choice of the strategy adopted, insofar as the second strategy "recovery strategy" represents the choice requested by the respondent who is not confident in his borrower. The chi-square test indicates the absence of a statistically significant relationship between the gender of the respondent and his adopted confidence behavior. In other words, the choice of the status quo or recovery strategy is not linked to a specific genre, whether under the axiom of order in a situation of reflexivity χ^2 (1, N = 113) = 1.010, p = 0.315, or in totality situation χ^2 (1, N = 113) = 1.258, p = 0.262, time preferences in different situation χ^2 (1, N = 113) = 0.385, p = 0.535 or indifference χ^2 (1, N = 113) = 0.217, p = 0.641, the continuity axiom χ^2 (1, N = 113) = .213, p = 0.644 and, reversal of preference χ^2 (1, N = 113) = 0.798 , p = 0.372. This leads us to conclude that the behavior of trust is not determined solely by gender. With regard to age, the chi-square test demonstrated the absence of a statistically significant relationship between the age of the respondent and the choice of strategy. That is to say that the age of the respondent does not impact his behavior of confidence with regard to a situation of indebtedness. The choice of the status quo or recovery strategy is not linked to the age of the respondents under the axiom of order in a situation of reflexivity, χ^2 (6, N = 113) = 4.289, p = 0.638, in a situation of totality χ^2 (6, N = 113) = 4.445, p = 0.617, nor in time preference in a situation of difference χ^2 (6, N = 113) = 4.739, p = 0.578, or indifference χ^2 (6, N = 113) = 4.722, p = 0.580, and the continuity axiom χ^2 (6, N = 113) = 2.808, p = 0.833, and reversal of preference χ^2 (6, N = 113) = 6.886, p = 0.331. We found that the feeling of trust is not private to a specific gender or age level, but rather linked to the risk that surrounds the debt situation. In order to reinforce our result, we will opt for econometric analysis. The model used is Random Effect Logistic Regression. In the experiment, the respondent goes through six situations.

Each situation is linked to two treatments, the control treatment (participating in the game of chance) and the experimental treatment (lending a friend). The responses associated with the treatments are binary (Choice 1, Choice 2 for the control treatment) and (Status quo, Recovery for the experimental treatment). Our objective is to determine the unobserved variable C_{it} "trust" and its contribution to risk. That is, identify trust/distrust behavior based on financial risk. We will consider R_{it} is the observable variable, in which:

$$\begin{cases} R_{it} = Statut\ quo, when\ C_{it} = 1 \\ R_{it} = Recouvrement, when\ \ C_{it} = 0 \end{cases}$$

The respondent opts for the status quo choice, when he trusts the borrower $C_{it} = 1$, on the other hand the recourse to recovery is linked to a behavior of distrust $C_{it} = 0$. The random effect logistic regression model is presented under the following equation:

$$\mathrm{P}\ (\mathrm{C_i} = 1|\mathrm{Y_i}) = \frac{\exp\ (Y_i^*)}{1 - \exp\ (Y_i^*)} = \ \beta X_i + \delta_i$$

Variable	Logistic Regression with Random Effect					
	Treatment 1	**Treatment 2**	**Treatment 3**	**Treatment 4**	**Treatment 5**	**Treatment 6**
	Axiom of order-reflexivity	***Axiom of order-totality***	***Temporal preference - difference***	***Temporal preference - indifference***	***Axiom of continuity***	***Reversal of preference***
	Coef. B	Coef. B	Coef. B	Coef. B	Coef. B	Coef. B
Age	-0,137	-0,149	-0,107	-0,27	-0,994	-0,201
	(0,136)	(0,216)	(0,159)	(0,238)	(0,146)	(0,193)
Gender	0,115	-0,504	-0,373	-0,239	-0,361	-0,432
	(0,295)	(0,473)	(0,355)	(0,465)	(0,336)	(0,432)
Treatment	0,909**	1,950***	1,440***	1,763***	1,176***	1,003***
	(0,294)	(0,478)	(0,370)	(0,484)	(0,329)	(0,352)
Constant	-1,951***	-3,304***	-2,358**	-3,512***	-1,546*	-1,075
	(0,759)	(1,217)	(0,917)	(1,281)	(0,829)	(1,007)
Rho	9,20E-07	0,387	0,144	0,328	0,144	0,374
Wald Chi2	10,55	17,02	15,79	13,77	13,66	9,46
Prob > Chi2	0,0144	0,0007	0,0013	0,0032	0,0034	0,0238
Log Likelihood	-137,36	-116,859	-126,967	-103,699	-141,238	-140,289
Number of observations	226	226	226	226	226	226
Sig : *p <0,1 ; ** p< 0,05 ; ***p < 0,001						

Table 2: Logistic Regression with Random Effect

Where Y_i^* is the latent dependent binary variable ($Y_i^* \approx\ Y_i = 1$), β is the vector of parameters to be estimated, X_i is the vector of independent variables, $\delta_i$is the error term modeled as an independent variable random effect. We note that the Wald Chi2 test is statistically significant in the six situations (p < 0.05), which explains the usefulness of the statistical approach used. The Rho parameter is close to zero due to the homogeneity that characterizes our sample (83.19% are between 21 and 30 years old). Concerning the independent variables (Age, Gender), the statistical significance was not verified, which confirms the hypothesis that the respondent's age and gender have no impact on his confidence. Furthermore, the processing variable, which embodies the change in the context of the utterance, impacts the respondent's feeling of trust/distrust (p < 0.05).

In other words, the respondent's answer was influenced by the statement posed insofar as the riskier the context of the question, the more the respondent expresses a behavior of mistrust.

5. THE CONTRIBUTION OF BEHAVIORAL ECONOMICS

We found that the bonds of trust between the borrower and the lender are very fragile, this sometimes pushes the lender to act irrationally. The feeling of trust is not linked to a specific gender or age, it is just enough that the environment of the transaction is uncomfortable or risky for the lender to become less confident. The use of an indirect collection process and the recovery of part of the debt does not imply a change of confidence. Distrust remains the strategy that characterizes the behavior of the lender when he finds himself in a risky situation. We have noticed that in the event of a risk, the lender often reacts emotionally. This drives us to exploit the relationship between emotion and trust.

5.1. The contribution of prospect theory

By mobilizing the principles of perspective theory in the case of our study. We note that in the first level of the experiment (Financial choice - game of chance) the respondents are neutral because the point of reference is null. Each dirham received is a gain for them. The expected utility will be presented in the following form: $\sum_{i=1}^{m} P_i u(s + X_i)$,, where P_i is the probability of receiving the utility $u(s + X_i)$ and s represents the initial sum that the respondent has before the game, in this case, the sum is zero, and X_i embodies the gain or the expected value. So, the respondent will make a profit when: $\sum_{i=1}^{m} P_i u(0 + X_i) > 0$. In the second level of the experiment (Financial choice - Recovery situation), the expected utility will be presented under the following equation: $\sum_{i=1}^{m} P_i u(1000 + X_i)$. The respondent considers the initial sum to be lent to be his point of reference. The experiment showed a change in the behavior of the respondents when changing the reference point. They are more suspicious and cautious when the benchmark is above zero. In this case, the respondents presented an aversion to the risks of losing the sum lent. This pushes respondents to opt for strategies that generate this sum or at least the maximum sum: $\sum_{i=1}^{m} \pi(P_i) v(X_i)$. $\pi(P_i)$ presents the respondent weight of the probability (P_i) of the payoff received, $v(X_i)$ is the psychological value associated with the sum (X_i). The effect of certainty explains a large part of the irrational behaviors expressed by the respondents. In the combination of situations 2 and 8, we find that the majority of respondents (n = 63) prefer certain and immediate gains (900, 1). In addition, a good part of the respondents (n = 35) preferred to resort to the risk (1000,0.5; 0, 0.5) to recover the entire amount lent. The results expose two visions of analysis, first, the lack of confidence pushes the respondents to abandon part of their loan (reference point) to recover only 90%, $v(900) > v(1000)\pi(0.5)$. Under the constraint of loss aversion, respondents will prefer minimal loss. The reference point was determined at 1000 MAD, the recovery choice pushes the respondent to abandon 100 MAD with a probability of 100%. On the other hand, the choice of the status quo pushes the respondent to recover all the sum lent with a probability of 50%. The second category of respondents preferred to recover the sum in full despite the risk associated with the choice. This encourages us to judge that mistrust pushes respondents to react by adopting the famous saying "*a half loss is better than a total loss*". These respondents opted for the certain and immediate choice in situation 2 when the reference point was zero, but in situation 8 they showed the opposite behavior by adopting the risk of recovering the entire sum. The combination of situations 5-11, shows that most respondents (n = 45) prefer the choice with a high probability of risk aversion and risk neutrality, followed by respondents (n = 39) who prefer the choice having a high probability of a situation of risk neutrality, but which provides a high return in a situation of risk aversion. We find that faced with a risky choice, the respondent wants the more probable results. The combination of choices (6 – 12) offers the possibility of evaluating the weight of the probability in a temporal context.

According to property 3, the utility value of 0 is zero, which leads us to consider that: $v(0)\pi(0.3) = 0$ and $v(0)\pi(0.25) = 0$, the equation will therefore be presented in the following form: $v(650)\pi(0.7) + v(350)\pi(0.5) < v(650)\pi(0.75) + v(350)\pi(0.45)$ The similarity of gains encourages respondents to perform choices based on the probability of recovery, which means that 71% of the respondents opted for the choice of recovery. We find that changing the 5% probability weight between [π (0.7) to π (0.75)] provides a larger psychological effect than changing from [π (0.45) to π (0.5)].

5.2. Understand the contribution of feelings to the choice of respondent

The theory of regret provides explanations for lender sentiment. Generally, the feeling of fear is more intense than regret, which often explains the case of refusal to grant a loan. To avoid this case, our experience presented the situation of the post allocation process of the loan. During the control situation SC (gambling participation), the utility function of the regret theory is presented in the following form: $U_i^{SC}(X, 0)$. In a control situation (participating in the game at random), the reference point from which the respondent builds his analysis is zero (0 MAD), in this case, whatever the value generated by the respondent will necessarily be greater than the value 0 (X > 0). The respondent will express a feeling of satisfaction and joy when pocketing short-term monetary sums. Moreover, during the experimental situation SE the reference point is fixed at the amount lent (1000 MAD) in this case, the utility function of the regret theory will be presented under the following equation: $U_i^{SE}(X, 1000)$. The rational respondent will prefer to recover the sum lent entirely (X = 1000 MAD). If he opts for a choice that gives him a sum lower than the value of the loan (X < 1000 MAD) he will express regret. In the case of our experiment, the behavior of the respondents is guided by the heuristic of affect, it is a mental shortcut that allows to process cognitive operations and to opt for choices based on emotions. only (Zajonc, 1980). This heuristic is behind the actions carried out by the respondents who opted for the recovery situation. G.F. Loewenstein et al. (2001) established an analysis model that links emotions to the cognitive process adopted when making a decision. They propel the role of emotions as an explanatory factor in a decision-making process. Researchers consider that emotions often precede the cognitive evaluation of the situation before the adoption of a behavior. It brings together the psychological and cognitive factors that contribute to the behavior of evaluating a risky choice. In the Risk as a feeling model, the authors propose psychological factors that impact the cognitive evaluation carried out by the individual and his behavior during a decision-making process. First of all, the individual anticipates a result associated with an emotion, in the case of our experiment the respondents who opted for recovery anticipated the loss of part of the sum lent, they expressed an anticipated regret. Then the model adds as a factor the weight of probability and other external factors that accompany the individual when he begins the decision-making process. We found that in the case of the experiment, the respondents were impacted by an emotional aspect, insofar as the risky situation associated with the choices pushes them to opt for more secure and accessible results in the short term by avoiding the 'aversion to risk. Generally, the feeling of fear pushed some respondents to change their choices when the reference point changed, the fact that the amount became 1000 MAD motivated these respondents, who adopted in a situation of controlling short-term choices or having a high probability, to opt for inverse choices, that is to say, choices based on low probabilities and spread over a long period such as the case of the combination of choices (2 – 8). We note that the respondents have based their decisions on an anticipated regret (Zeelenberg, 1999), associated with the choices which make it possible to recover maximum sums and have a strong probability of realization. This sentiment shows that the respondent anticipates a loss in advance of his loan settlement call, so his strategy was to minimize the degree of the loss.

The feeling of regret is sensitive to the weight of the strong probabilities of the choice, insofar as the more the individual expresses an anticipated regret, the more he opts for the choices which have a high probability of realization, neglecting the payoffs offered. The time dimension has a strong impact on their behavior because the choice that is feasible in the short term and the most requested, such as the case of the combination 5 - 11. On the other hand, the feeling of fear is very sensitive to the low probability weight of the choice, the The fact of not losing anything pushes individuals to choose the options whose probability is low but offers the initial amount of the loan. Time does not necessarily impact the choice of respondents influenced by fear such as in the case of the combinations 6 – 12. Indeed, we can attribute these behaviors to the feelings of pessimism and optimism that characterize the state of the respondents during the transition from the control situation (Questions 1 – 6) to the experimental situation (Questions 7 – 12). $\begin{cases} UE_{i,SE} = (Revenu|pesimism) < 1000 \\ UE_{i,SE} = (Revenu|optimism) = 1000 \end{cases}$

In the case of the experimental situation, the respondent pessimistic expresses anticipatory regret, often his decisions are focused on choices that provide pecuniary sums as quickly as possible. Pessimistic respondents are more impacted by the magnitude effect. In addition, optimistic respondents are influenced by fear, this pushes them to choose options that ensure that they recover all the amount lent, optimistic respondents are more impacted by loss aversion. The expected utility of pessimistic respondents is often lower than that expected of optimistic respondents. The nature and degree of impact of emotions push the respondent to develop a cognitive process linked to the decision adopted. The state of the respondent in the pre-decision phase also impacts his choices and his method of economic analysis.

5.3. Preference under a time constraint

In our experience, we have illustrated the time constraint to the choices associated with a one-year deadline. This is a long time to capture the behavior of individuals in the face of risks under this constraint. The combination of choices 3 – 9 offers the respondent the choice between an immediate certain gain of 900 MAD and a delayed certain gain of 1000 MAD. Most of the respondents (n=94) opted for choice 2 when the reference point is zero, but only 40% chose to wait for the delayed gain when the reference point is 1000 MAD, to recover the entire amount lent. On the other hand, the majority of respondents (n= 56) preferred to give up the idea of recovering the whole sum. The respondents were under the effect of magnitude. This behavior is called irrationality because $E(u(1000)) > E(u(900))$.. The combination of choices 4-10 offers the choice of obtaining an immediate sum of 900 MAD or a gain of 1000 MAD with a probability of 90% within one year. 69% of the respondents opted for the second certain and immediate choice of giving up part of the initial sum to recover the rest immediately available $v(900)\pi(1) > v(1000)\pi(0.9)$. The psychological value $v(900)$ is greater than $v(1000)$ when the probability weight π (1) is greater than π (0.9). We can see that the presence of risk reinforces the call for debt as soon as possible. Respondents were impacted by the certainty effect. The combination of 5-11 choices offered subdivided the respondents into two equal groups, 51% (n=57) preferred to receive 750 MAD with a probability of 80% and give up the rest of the amount, while 49% (n= 56) preferred to get 850 MAD with a probability of 60% immediately and 150 MAD with a probability of 50%. The analytical logic of the first group is based on the preference of the received amount $v(750)\pi(0.8) < v(850)\pi(0.6) + v(150)\pi(0.5)$. The second group relies on the preference for the probability weight $v(750)\pi(0.8) > v(850)\pi(0.6) + v(150)\pi(0.5)$. Same behavior was identified in the combination of choices 6-12, 45% kept the same choice / strategy $v(650)\pi(0.7) + v(350)\pi(0.5) < v(650)\pi(0.75) + v(350)\pi(0.45)$+ v(350)π(0.45), on the other hand 37% changed the choice $v(650)\pi(0.7) + v(350)\pi(0.5) > v(650)\pi(0.75) + v(350)\pi(0.45)$.

We find that when the respondent impacted by the magnitude effect often adopts a probability-related analysis [$\pi(0.7) < \pi(0.75)$], paying less attention to the payoffs generated within a year. On the other hand, respondents who are weakly impacted by this effect seek to increase the probability of obtaining the full amount. This explains their preference for the combination $v(350)\pi(0.5) > v(350)\pi(0.45)$. This leads us to conclude that the weight of probability is linked to the degree of the patience of the respondent. An impatient respondent finds that the difference of 5% between (75% and 70%) is greater than that which exists between (50% and 45%).

6. CONCLUSION

The experiment presented an analytical framework that links lender confidence to borrower behavior. As long as the lender chooses a collection strategy to recover the loaned amount in the short term, he expresses a behavior of mistrust. Trust was found to be entirely dependent on the behavior of the borrower. The feeling of trust is very sensitive to external and internal changes that frame a situation. The risk as feeling model sheds light on the nature of certain changes such as the pre-decision emotional situation. The principles put forward by the model of Lowenstein and his colleagues intersect with the theory of somatic marking developed by the neurologist Antonio Damasio towards the end of the 1990s (Damasio, 2006). The theory posits that emotions are expressed in a physiological state before they are in psychological states. Unlike the neoclassical approach in decision-making theory which limits the process to a benefit-cost evaluation mechanism. Damasio has shown that emotions have a central role in this process (Bechara & Damasio, 2005). The experimental design that we have developed allows us to understand the impact of negative emotions (fear, regret) on the behavior of the call for payment. Pessimistic respondents who were guided by negative emotions expressed strong distrust in adopting the recovery strategy. Moreover, optimistic respondents who also expressed a level of negative emotions (fear), always trust the borrower and adopt the status quo strategy. The principle of the rationality of choices was not the motive that drives individuals to proceed with choices, which proves that the actions were guided by emotions than by reason. Trust is related to time value. The time spent for a choice to be feasible influences the confidence of the decision-maker on the relevance of the choice. The lender often prefers short-term choices. Indeed, the longer the loan repayment period, the more the lender decreases his confidence in the borrower. We observe two contradictory behaviors concerning choice under time constraints. The first behavior is expressed by pessimistic respondents, guided by anticipated regret, they opt for choices that provide short-term sums. The second behavior is expressed by optimistic respondents, guided by loss aversion, they opt for choices that preserve the recovery of all the sums lent in the long term. The second group is more confident in the actions of the borrower than the first group. During the experiment, the adoption of choices was not established in the first instance on an analysis of economic rationality. It was based on the psychological situation that frames the state of the respondent. This allows us to conclude that the weight of emotions is more intense in the choice process. The study showed that trust is a psychological state very sensitive in the first degree to intrinsic factors such as emotions and mood of individuals. And in the second degree to extrinsic factors such as the proposed economic situation (in our case, participating in a game and different to lending a pecuniary sum), the duration of the repayment. The psychological situation that frames the mind of the respondents influences their perceptions about the choices made. This leads us to admit that the analysis based on emotions is more intense than the rational reasoning based on cost-benefit. About the situation of uncertainty, the effect of ambiguity reinforced these remarks. We can conclude that the lender-borrower relationship is framed by a psychological aspect sensitive to the loan situation.

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THE CORONAVIRUS: REAL OPPORTUNITY TO ACCELERATE TRANSITION TOWARDS UNIVERSITY 4.0

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ABSTRACT

In the digital era, knowledge economy has experienced a strong rise in power especially with the mutation of major technologies such as Big Data, Connectivity, Cyber security, etc. Considering the rapid changes experienced by different domains and industries, university's rate of change, described as slow, has been challenged. Hence the urgent need for a metamorphosis to a new model, which the crisis of covid has accelerated. The pandemic has disrupted the way education has been delivered, accelerating the transformation already underway toward more online learning and teaching. The pandemic has also had a direct impact on the way research is conducted, the way universities operate (in terms of campus closures and the shift to online learning), and the way universities are governed, with senior staff having to make a range of emergency decisions and allow for greater flexibility in many areas of activity. Based on this reality, the university must rethink its worldview and its added value. It must once again become the place where innovation initiatives are developed. It must focus more on fundamental research, to launch great discoveries and to stimulate real technological breakthroughs. Considered as an economic actor, the university must assert its leadership in the face of the demands of the outside world, the needs of the economy and globalization, at the risk of being overtaken by companies that are creating their own academies; and the need not to concede the fundamental purpose that is, the creation and transfer of knowledge. Even though the systemic development of a given university can hardly be studied generically, some examples for different fields of action might be helpful to stimulate personalized measures. Therefore, we will present a range of loosely chosen best practices of university 4.0 for the areas of education , research , and governance.

Keywords: *Education4.0, The impact of covid, University 4.0*

1. INTRODUCTION

There is no revolution without disruption. The result shatters traditions, actions, relationships, ways of thinking and, of course, teaching. Over time, society has undergone major changes due to technological advances, which have brought about significant changes in its structure. Since the Industrial Revolution, university has begun to contribute to the country's economic development, with an emphasis on working-class pedagogy. University in the 21st century had to face not only the acceleration of technological progress, but also the global health crisis caused by the HIV / AIDS pandemic, which highlighted the shortcomings in teaching skills and the lack of institutional readiness to face the technological challenge in education. We are heading to a ultra-connected universities, that features a sparse combination of technology and people at the service of learning.

In this context of mass education and especially in pandemic diseases it is already a problem for teachers to be able to follow each learner without technology. Given the large number of learners with different profiles in the university, providing each learner with the individualized follow-up needed to improve learning can be very complex and resource intensive. In order to better present our theme, we have opted for the following plan: First, we will address the impact of coronavirus on university and limitations of the current education system in the face of the pandemic crisis, then we will proceed to the identification of the main aspects of the university 4.0, and finally we will close our intervention with an inventory of the mechanisms of the university 4.0 and its added value for our model of development model.

2. THE PARADIGM OF THE FOURTH EDUCATIONAL REVOLUTION (UNIVERSITY 4.0)

University 4.0 somehow sets the phenomenon of digital inclusion in our our day-to-day, where humans and machines line up to discover new theories about innovation. The Education 4.0 paradigm can be defined based on two new trends. One is based on general innovation in education and pedagogy, and the other is based on the integration of technologies introduced into education by Industry 4.0. On the one hand, Education 4.0 is a sight of the future of education that develops the potential of digital technologies, personalized data, and the opportunities presented by this connected world to facilitate lifelong learning. This is an educational revolution that enables learners to become learning architects, characterized by Personalized learning with flexible, dynamic, and adaptive learning paths. Education 4.0, on the other hand, is a direct result of the emergence of Industry 4.0. Education needs to be aligned with Industry 4.0 in order for the next generation of learners to prepare for the Fourth Industrial Revolution. Education 4.0 integrates Industry 4.0 technological advances such as 3D printing, augmented reality, virtual reality, cloud computing, holograms, biometrics, multi-touch LCDs, big data, and QRcode for educational reasons. With this new trend, Education 4.0 will accelerate the transformation of the process of integrating technological advances into education and learning, in order to facilitate the collaboration between Education and Industry 4.0.

3. UNIVERSITY 4.0 AND COVID-19 CRISIS

Today, the world is entering an era of significant change. The learning activities carried out by students and the application of methods and techniques by teachers form the basis of dynamic and changing educational models. This process of structural innovation has relied on the development and transformation of science and technology until it evolved into the current Education 4.0. An important aspect is the development of student skills during the learning process, which allows them to enter the labor market and meet its requirements. The advent of university 4.0 represents an ideal approach to harmonizing education with the Fourth Industrial Revolution. Because it is based on robotics, smart technology, artificial intelligence, augmented reality, gamification, teacher evaluation and student self-evaluation, Big data, use of digital platforms; facilitating our daily lives. Universities are challenging to produce successful graduates in these new forms of education, where students and teachers live together in an environment suitable for Industry 4.0 and cyber-physical systems are used throughout the industry. These technologies should always be part of the curriculum. Learning approaches are always based on new forms of learning and their applications in new working environment. Education 4.0 can enhance the desired skills of graduates and make them innovative and creative employees. It could adapt to the use of new technologies. Some of the features of Education 4.0 as a post-covid reform are:

- The basis of teaching is the collaboration between teacher and student.
- Communication is the main method of learning.

- Problem solving is practiced as realistically as possible.
- One of the main driving forces of learning is games and the creation of real environments.
- Use of ICT as a tool to access, create, organize, and distribute content.

The technology and knowledge transfer of university 4.0 before the COVID-19 pandemic grew in similar proportion to the levels of investment that governments allocated to their Gross Domestic Product (GDP) and to the variables of innovation, development and research in science and technology. In other words, if the country's investment level is low, University 4.0 development and implementation will not be globalized beyond small business and academic spaces. However, the transition from a pandemic has seen dramatic changes in classroom education, e-commerce, and mail-order sales. Most countries have decided to create ways to continue the educational process in different distance modalities. Some have opted for a form of online learning, while others have opted to establish a distance learning strategy in offline mode. *(Tobón et al., 2014, p.90)* This greatly increases the necessity for access to ICT, and the education model introduced in university 4.0 contains smart technology, artificial intelligence, and robotics to adapt to new teaching and learning methods in the new business era. Students switched from face-to-face methodologies to virtual classroom methodologies and encountered an educational system in in which the teaching staff was not ready to accept another educational model and leave the traditional method. Most countries may rely on the appropriate resources and digital platforms to connect remotely. In this case, many thought they needed to speed up to an unprecedented level and implement open radio and television programming. Societies around the world are benefiting from technology every day, as it brings many benefits, especially in education where technology has revolutionized the way we teach and learn. The e-learning education platform has evolved to the point where the environment for creating virtual classrooms and virtual university campuses, provides facilities for students to learn a new era and adapts it to the rhythms of the global market. As a result of the restrictions caused by the pandemic caused by Covid 19, the prediction of vacancies and the acceleration of the application of science and technology that we are already living in our time. There has been such a serious school desertion, caused by reasons such as the lack of access to computer equipment, whether laptops or desktops, the lack of access to the Internet, by ageing teachers who refuse to join virtual education and therefore cannot apply pedagogies that allow students to enjoy virtual classes.

4. CHARACTERISTICS AND TOOLS OF UNIVERSITY 4.0

4.1. Characteristics of university 4.0

4.1.1. Education 4.0

As HEIs will move toward a larger proportion of postmodern and integrative practices, education will likely be focused on a whole-person approach, developing (personal) competencies in co-creative settings, rather than on knowledge and methods only. A true platform dedicated to approaches to learning, Education 4.0 deploys innovative and customizable formats. And customizable formats. It trains citizens of the world through the internationalization of content and courses, student and teaching mobility, and now internationalization at home (IAD).This is achieved through the deployment of multicultural campuses but also through exchanges, projects, and conferences given at a distance. All you need is a connection to follow from Paris a course given in Standford. In the digital era and in the face of technological developments, economic turbulence and societal transformations, the university is anticipating the mutations of society. It anticipates the diplomas and qualifications likely to meet the jobs of tomorrow. Higher education 4.0, in the era of increasing "flexibility", impacted by the evolution of professions and employers' expectations, is future oriented. It aims at the acquisition of universal skills and the ability to rethink, act, anticipate and envisage

alternative solutions to future scenarios. It adopts a cross-sectoral learning that integrates interdisciplinary and interprofessional approach to maximize collaboration and shared perspectives. In addition to the know-how, university education incorporates generalized "Power Skills" modules that can translate behavioral knowledge in university graduates. These are emotional skills such as adaptability, creativity, optimism , emotional intelligence and critical thinking, University 4.0 marks a real transition from a teacher-centered pedagogical mode to student-centered. It is in itself a new paradigm that integrates innovative pedagogical approaches and puts the student at the center of the concerns. It aspires to educate faster, better, cheaper cost, in a more practical way and independently of time and space. The lectures are compacted in the form of online, asynchronous, and therefore adapted to the pace of each via MOOCs, SPOCs and COOCs. They can also be taken via collaborative platforms that support peer-to-peer learning and the co-creation of knowledge. The face-to-face sessions are dedicated to questions/answers, exercises, case studies, application projects. The pedagogy is now based on experience and co-working.

4.1.2. Research 4.0

The transdisciplinary living lab approach explains how a University or HEI 4.0 can attempt to promote to sustainable development through novel research practices. The basic idea is to leverage the campus as a test bed for sustainability, integrating faculty, staff, researchers,and students into the process and using rapid prototyping methodologies for obtaining local solutions for global sustainability challenges. Research 4.0 does not break with its original mission, but it amplifies it. The knowledge produced feeds the economy, through patents and contracts with companies, but also to teaching through the work of doctoral students and researchers. These flows operate in concentric circles from the local to the international level, and ultimately benefit society. The accumulation of knowledge and the cross-fertilization of ideas between the disciplines places the university in a good position to anticipate trends and technological, such as physics and quantum computing. Transferring scientific and technological knowledge into an economic or social activity is a major priority. This transfer takes various forms, including the creation of start-ups and innovative companies. It allows for innovation in processes, products and services which allows a new solutions such as: reduce costs, increase sales, access to new markets, create and markets, and to create and maintain quality jobs. The symbiosis of ideas from fundamental research and applied research based on contact with the company, as well as and the consideration of market needs lead to success. This kind of university implements appropriate incentives and decision making and monitoring processes that support/encourage researchers to produce, extend and "commercialize scientific and technological know-how. Research 4.0 as a key driver of the internationalization of the university's missions, amplifies the quality of production and improves the university's visibility at the international level.

4.1.3. Governance 4.0

The university is a company, an employer, a major actor in its territory a real partner of the local authorities and the public sector.It is a place of creativity and equitable dissemination of knowledge, an essential pillar of equal opportunity. The university can ensure a high qualification of human resources.It promotes university research that creates scientific, technological, artistic and linguistic prosperity,and contributes to the economic and social development. At its head, a decision-making body with a complete autonomy, has the legitimacy necessary for its proper functioning, as well as the agility required to accelerate innovative ideas and projects. The entrepreneurial university is financially autonomous. It is active in securing its own financial resources to meet its ambitions and to lead the expected evolutions.

Strategic planning, efficient management practices, evaluation of quality of services and activities, efficiency of resource management, transparency and accountability are integral parts of the organizational practices of the entrepreneurial university. The governance system that integrates a culture of change, continuous improvement, innovation, and creativity, guarantees the transparency and academic integrity of teaching and research.

4.2. Digital and pedagogical tools of university 4.0

4.2.1. Digital transformations

Nowadays, digitalization is changing everything, and we are seeing main revolutions in education which are distracting the interaction between the different actors in education. The contemporary context of virtual transformations is primarily based on the everlasting integration of technology as a learning tool that promotes the improvement of latest advanced learning methods and intelligent environments:

- Learning Management Systems (LMS):
  Learning management system solutions offer automated administration services for learning related activities (management of resources, training paths, learners, trainers, etc.). LMS additionally gives learners the opportunity of mastering at their very own pace, of consulting mastering assets at a distance, and of individualized mastering. There are proprietary LMS structures which includes 360 Learning, Cross Knowledge, and Dockeos , and opensource platforms which includes Canvas, Claroline, Moodle, and Open edX.
- Mobile learning:
  The growing use of computers, tablets, and smartphones in theclassroom is a new education. According to a study by Pearson Education, nine out of ten (87%) students in US universities do their homework every week using a laptop, electronic notebook, or Chromebook computer.
- Interactive and fun contents:
  The interactive and fun content plunges the learner in a sensory experience (touch, see, listen) with additional information that enriches the learner's experience. Higher education has several uses. In astronomy classes, teachers can use 3D representations of the Earth and the Sun to help learners understand the relationship between the Earth and the Sun.

4.2.2. Pedagogical Transformations

- Active pedagogy:
  Active pedagogy is a broad concept most commonly associated with student-centric, revitalizing teaching methods and teacher-led activities . This is a pedagogical approach aimed at making learners actors in the learning process and actively involved in knowledge building .
- Project-based learning
  Project-based learning is an active pedagogical practice that permits managing learning through the realization of an individual or collective project. This teaching method allows learners to become accustomed to the complexity of the professional world and helps them build personal and professional projects. There are various applications based on this pedagogical approach that put the learner in a complex problem-solving situation.
- Flipped-classroom
  Flipped-classroom is a method that involves of reversing the nature of activities in the classroom and at home (homework).Reverse class requires giving the students independent activities of the low cognitive level to be accomplished at home, in order to favor collaborative work and learning tasks of high cognitive level in the classroom, by placing the students in activity and collaboration .

This pedagogical approach has several uses and aims to provide a learning environment that combines the use of technology with hands-on educational activities.

- Blended learning
  Blended learning is a hybrid concept that mixes face-to-face and online education. blended learning integrates the use of learning theory and educational practice into a flexible, multimodal, multi-linear redesign. Technological innovation and pedagogical change have created a great need for education and learning. To improve learning and adapt to the needs of learners and the industry, educational institutions are moving to the concept of university 4.0.

5. CONCLUSION

The drastic change in daily life caused by the COVID-19 pandemic, combined with the generalized economic crisis, has led to a major disruption in the way, place and time in which student learning occurs. Human beings have had to adjust rapidly to different approch of teaching and learning, and teachers have been obliged to build up new skills and abilities, especially in education-oriented technology, in order to maintain the quality of education. Our work is focused on establishing an approach of university 4.0 based on some basic fields such as education 4.0, research 4.0, and governance 4.0 enhanced through a variety of digital and pedagogical transformations that could be used to ensure a transition towards university 4.0. The concept of university 4.0 could be a great asset for education under the pandemic scenario that the world is facing, as it has permitted teachers to implement innovative strategies, and to search for adequate resources to keep student participation and motivation, thus highlighting the importance of this fourth industrial revolution. The evolution of e-learning education platforms ensures a suitable environment for the virtual classroom, and even for a virtual university campus, since it offers all the facilities that student learning needs in modern eras, and inserts it into the rhythm of the world market. However, universities around the world are also facing the difficult task of dealing with multiple complex trends simultaneously while trying to maintain the ability to take action in times of uncertainty. These changes lead to the application of new educational methodologies, oriented to a profound learning that prepares the individual with the required skills to face the working world.

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THE IMPACT OF TRANSPORT ACTIVITY ON THE MOROCCAN SUPPLY CHAIN DURING THE COVID-19 PANDEMIC

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ABSTRACT

The Covid-19 pandemic has profoundly impacted all areas of our private and public lives, including how we travel and how our goods reach their final destinations. The Covid-19 pandemic is affecting our mobility and transportation functions in unprecedented ways. It serves as a reminder of the importance of the movement of people and goods to our economy and society, but also of the industry's structural weaknesses. The supply chain has been strongly impacted by the devastating effects caused by the spread of the Covid-19 pandemic on the global economy. The degree of impact of these effects has reached companies' supply chains, particularly in terms of transport activity. For this, We carried out a study on the impact of transport activity on the supply chain of 196 Moroccan companies during the spread of the Covid-19 Virus. Thanks to the Chi-square test and the non-parametric Kruskal-Walis test, we found that the supply chain was significantly impacted by the disruption of this activity, particularly in terms of supply, purchase, and transport of goods ($p < 0.01$) and a weak effect on production ($p < 0.1$). We found that the level of the chain disturbance is related to the nature of the transport. The upstream of the supply chain was impacted by the disruption of the transport of information while the downstream of the supply chain was influenced by the transport of goods.

Keywords: *Covid-19, Logistics, Supply Chain, Transport*

1. INTRODUCTION

The year 2019 ended with the news of the outbreak of a mysterious respiratory disease that appeared in China in the city of Wuhan. Since then, the virus, which has taken the official name coronavirus disease 2019, has spread to more than 200 countries and regions around the world affecting more than 85 million people and causing the death of more than 1.87 million as of December 31, 2020. In addition to human lives, the pandemic has severely affected the global economy and caused the sharpest economic contraction since the Great Depression (Tang, 2006; Falchetta and Noussan, 2020; Lin *et al.*, 2020; Loske, 2020; Remko, 2020; Sun *et al.*, 2021). The health measures introduced by the governments of many countries have caused non-essential economic activities to be suspended for several months.

The world is sinking into an unprecedented crisis in the real economy that is affecting two growth engines, supply, and demand. The Covid-19 pandemic has exposed serious vulnerabilities in societies, institutions, and economies around the world (World Health Organization, 2020; Au Yong and Laing, 2021). In addition, The Covid-19 pandemic has revealed the strategic importance of logistics in business value chains and its vulnerability. From the reduction of orders to the partial or total cessation of activities, almost all industries have suffered the consequences of the collapse in volumes transported (Gamil and Alhagar, 2020). The turmoil caused by the pandemic has a direct impact on the global supply chain and its underlying transportation network (Boulitama, Rahli and Sabri, 2021). The closure of borders and the introduction of various security restrictions and protocols that restrict the movement of people and goods have directly impacted transportation and logistics activities (Hobbs, 2020). Limited transportation activity means that the delivery of commercial and essential supplies (medical devices, personal protective equipment, medicines, etc.) to combat the Covid-19 pandemic is exposed to delay and hindered (Dasaklis, Pappis and Rachaniotis, 2012). The new coronavirus is a major test for globalization, the most important supply chains have collapsed, countries have rushed to hoard medical supplies and ban travel, and the crisis has required a reassessment of the entire interwoven global economy. The close relationship between business and governments has made the latter more vulnerable to catastrophic shocks. The Covid-19 crisis challenges companies to anticipate new risks, particularly health risks, within the definition of their Supply Chain strategy (Shortall, Mouter and Van Wee, 2021). The question also arises about the resilience and ability of their supply chains to sustain themselves or recover quickly in times of crisis (Shortall, Mouter and Van Wee, 2021). Ultimately, the overall performance of the company depends on the reliability and regularity of the supply chain, the challenge is to build new logistics strategies by providing them with responsiveness and efficiency. Transport has played an important role in the spread of COVID-19 disease. All walks of life have been hit by successive lockdowns and movement restrictions, but transport has also contributed to the success of frontline workers as they reach those in need in time and deliver relief. Demand and supply of many goods and services have ceased due to reduced liquidity and limited connectivity. However, due to the lockdown, the demand for online delivery has increased, so some businesses are booming, especially those that are mainly based on e-commerce. This article aims to study the role of transportation activity and to understand its importance within a supply chain. For this reason, we will analyze the impact of this activity on the supply chain during a situation of economic instability, namely the situation of the spread of the Covid-19 virus. For this, section 2 briefly discusses and presents the transportation types in the companies. Followed by section 3, which exposes the methodology and the hypothesis followed in this article. Section 4, discusses and analyses the findings. Finally, section 5 is devoted to the conclusion.

2. LITERATURE REVIEW

The activity of transport is presented as the action of transferring a factor of production or wealth from one place to another. It is a physical transfer of flows that the company mobilizes to preserve the continuity of its operating activity.

Figure following on the next page

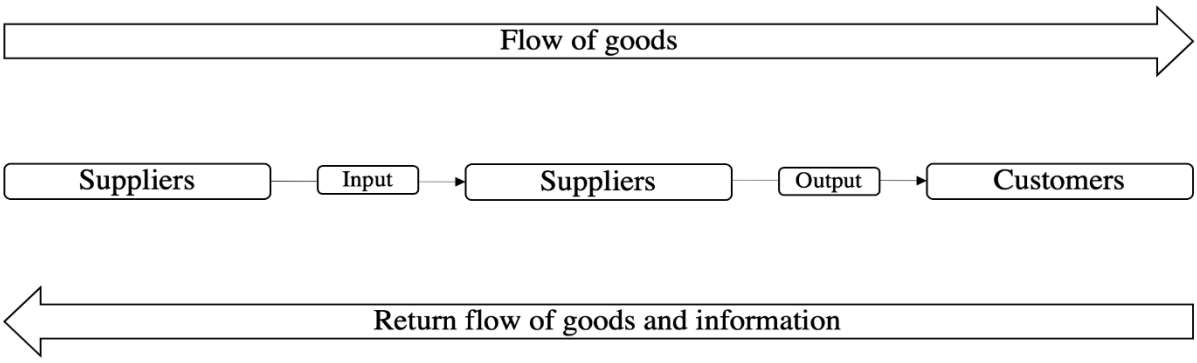

Figure 1: Types of transportation in a simple supply chain
(Source: Stank & Goldsby, (2000))

Stank and Goldsby, (2000) developed a decision model that positions transport in a simplified supply chain (Figure 1). Suppliers rely on the activity of transport to transfer goods and information to producers. It is an input mobilized by the latter to initiate a production process. The producer's supply chain is essentially based on these flows to launch the production process to create outputs in the form of goods or services to market to customers. Similarly, the flow transfer mechanism can take the opposite route by ensuring transportation of the flow of goods from the customer to the supplier (in the event of a return of goods) and of information (in the event of a complaint, etc.). Internally, when it comes to transport decision making, decisions are made from the strategic level to the operational level and from the macro-level to the micro-level. Indeed, the emergence of new objectives for the transport function has created a need and a framework that identifies and organizes decision-making in the transport of production flows in an integrated supply chain environment, in other words, the evolution of the transport activity pushes companies to adapt to change by adopting internal management methods capable of maintaining its variations, particularly at the level of their logistics chains. This by adopting a cost-benefit analysis or an innovative approach based on digitization etc... There are several levels of transport within the company:

- *Staff transport:* brings together the activity that deals with the movement of staff from their home to the place of work or even travels for specific missions. Companies often recruit a driver with the mission of carrying out this activity only or subtract this task from a company adopting transport as its main activity.
- *The transport of goods*: represents the best known and most studied form in the company. It represents the activity of moving goods from the production area to an intermediate (depots) or final (customer) destination.
- *The transport of information:* it embodies the activity of the transfer of immaterial flows between the company and its partners (Bank, Suppliers, State, etc.). The courier is responsible for maintaining the transport of information between the company and its partners. Recently, ERP systems have replaced a good part of the mission of the courier.

These modes of transport enter the supply chain by facilitating the company to carry out its activity with all effectiveness and efficiency. Moreover, Potter and Lalwani (2005) find that there has been little change in transport management techniques. The analysis of the supply chain relies heavily on the transport of goods, rare are the works that have studied the importance of the transport of personnel or information on the performance of the supply chain. Transport activity has undergone a profound change affecting both its technical structures and its organizational foundations. it represents an essential element for the company to measure its supply chain (Devernay, 1997). Indeed, the adoption of a specific type of transport is often linked to the structure and nature of the company's activity.

Most academic works focus primarily on the transport of goods only (Achahchah, 2018; Coyle et al., 2015; Liu, 2011). Lay et al. (2002), studied the performance of the supply chain at the level of transport of goods. We will focus on the process of transporting all flows in a supply chain, in particular the factors of production, information, and goods.

3. METHODOLOGY & HYPOTHESIS

Transport is a predominant activity for companies. All companies rely on transport to ensure the operation of their supply chain. The spread of the pandemic crisis has disrupted this activity. For this, our hypothesis consists in understanding the degree of disruption of the transport activity within the supply chain of certain Moroccan companies. The objective of the hypothesis is to shed light on an analysis of the different types of transport that a company adopts to keep the good circulation of its logistics chain. For this, we have adopted an inverse approach in which we will identify the repercussions of the supply chain impacted by the deterioration of the transport activity under the effect of the Covid-19 pandemic, this will allow us to conclude the essential role of this normal activity. The hypothesis is presented in the following form: "The *impact of transport activity on the functioning of the Moroccan supply chain"*. To verify this hypothesis, we put online a self-assessment questionnaire intended for Moroccan companies. We obtained 196 responses from the Google Forms Web Survey platform.

4. RESULTS AND DISCUSSION

The analysis of the questionnaire allowed us to verify the impact of the transport activity on the supply chain of Moroccan companies that participated in the questionnaire. We used two valid statistical methods in the analysis: the Chi-square statistical test and the non-parametric Kruskal-Walis test. Figure 1 presents some characteristics related to the companies in the sample. We find that 72% are concentrated in the most popular regions of Morocco (Casablanca-Settat Region, Rabat-Salé-Kenitra Region, Tangier-Tetouan-Al-Hoceima Region). 61% of the companies operate in the secondary sector, and 38% are companies active in the field of services. 86% of the achieve a turnover less than or equal to 200 Million Dirham, these are indeed Small and Medium Enterprises.

Business operating activity	***%***
Acitivity Sector	
Primary	1%
Secondary	61%
Tertiary	38%
Région d'activité	
Casablanca-Settat	36%
Rabat-Salé-Kénitra	28%
Tanger-Tétouan-Al Hoceïma	7%
Fès-Meknès	6%
Marrakech-Safi	6%
Oriental	5%
Souss-Massa	5%
Béni Mellal-Khénifra	3%
Dakhla-Oued Ed Dahab	2%
Guelmim-Oued Noun	2%
Chiffre d'affaires d'activité	
Turnover < 10 000 000 DH	42%
10 000 000 DH < Turnover < 200 000 000 DH	43%
Turnover > 200 000 000 DH	15%

Table 1: Graphical presentation of the characteristics of the sample (Source: Authors)

4.1. Analysis of the Chi-square test

The chi-square statistical test aims to match two qualitative variables, we applied this test to determine the statistical significance of the existence of a transport disruption on the supply chain level of our sample.

Supply chain level		Transport Disruption		χ^2	Φ
		Yes	No		
Procurement	Yes	82	45	11,719***	0,001
	No	27	42		
Purshasing	Yes	58	14	12,559***	0,002
	No	69	55		
Production	Yes	30	23	2,137*	0,144
	No	97	46		
Stockage & Entreposage	Yes	16	8	0,042	0,015
	No	111	61		
Haulage	Yes	56	18	6,169***	0,013
	No	71	51		
Distribution	Yes	42	28	1,098	0,295
	No	85	41		

***p < 0,01 ; ** p < 0,05 ; *p < 0,1, *df* = 1

Table 2: Chi-square test in a crosstab
(Source: the authors)

The results show the presence of statistical significance between the presence of transport disruption and the level of the supply chain related to supply ($p < 0.01$). We find that 55.6% of companies were impacted by disruptions in transport activity at this level, of which 75.2% were negatively affected. The second level shows a statistical significance between the transport disruption and the logistics level associated with the purchase ($p < 0.01$). 64.7% were negatively impacted by the effect of transport disruption, of which 45.6% felt the impact in terms of purchases. The statistical significance was determined at the level of the supply chain related to the haulage ($p <0.01$), 64.7% of companies were affected by the disruption of transport, of which 44% found difficulties in transporting goods to their customers. We also note the presence of a statistical significance at the level of production ($p < 0.1$), it is indeed a negative impact of the disruption of transport to the production activity. This is explained by the relationship that brings together the transport of raw material and personnel and production because without raw material and personnel there is no production. In addition, 76.3% of companies negatively affected felt that the disruption did not directly impact production.

4.2. Analysis of the non-parametric test: Kruskal-Walis

The Kruskal–Walis non-parametric test is the alternative to the analysis of variance test. We will use this test to verify the hypothesis. The test is used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. The statistical results show a static significance between the disruption of transport and the level of the logistics chain associated with supply, $H (1) = 11.659$ $p = 0.001 < 0.05$; The level of the supply chain associated with the purchase $H (1) = 12.447$ $p = 0.000 < 0.05$ and the level of the supply chain linked to the haulage $H (1) = 6.138$ $p = 0.013 < 0.05$. This leads us to reject the null hypothesis and to accept the alternative hypothesis which considers that there is an impact on the disruption of transport on the Moroccan supply chain. The results reveal the importance of transport activity in the proper functioning of the supply chain. Indeed, the Covid-19 crisis has shown that Moroccan companies experienced a disruption in their chains when transport activity temporarily stopped.

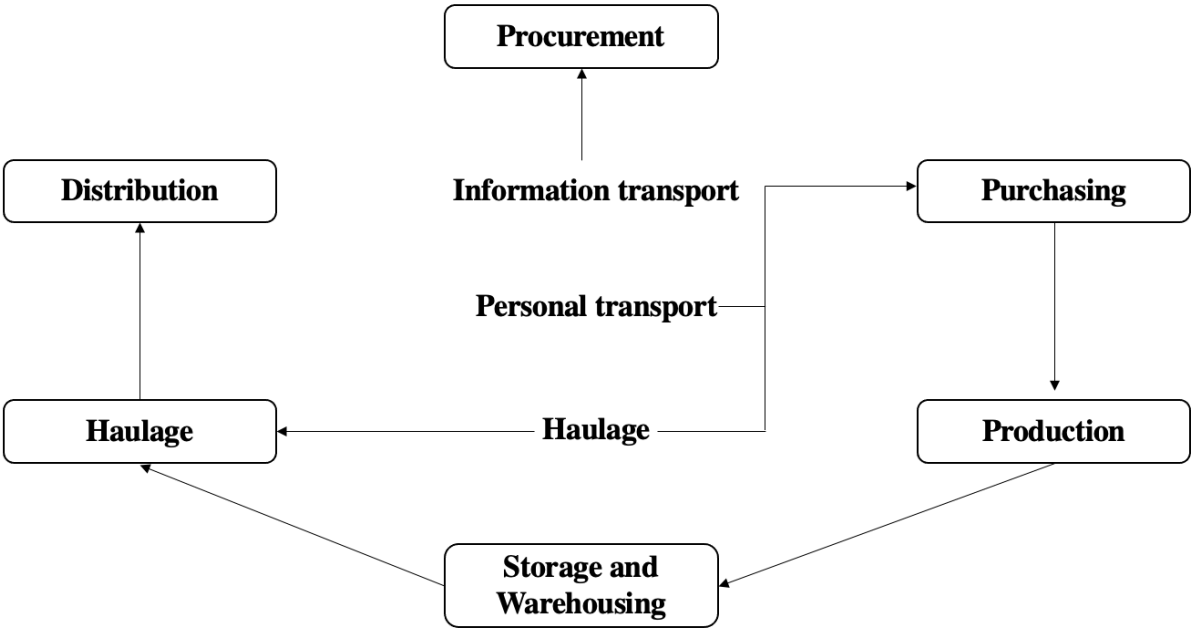

Figure 2: Diagram of the impact of different types of transport on the logistics chain (Source: Authors)

We note that the transport disruption has affected the upstream and downstream of the supply chain. Indeed, the transport activity associated with the supply is generally linked to the transport of information, that is to say, the reception and/or the transmission of information whose mission is to preserve the continuity of the operation of the Supply Chain. The purchase level is linked to a transport activity for the purchase of tangible raw materials (for industrial companies) or intangible (for service companies such as business information), or personnel (purchase of labor). The level of the transport logistics chain is linked to the transport of goods. We can conclude that the upstream part of a supply chain is linked to the acquisition of essential factors for production (labor factor, informational factor, capital factor). The company ensures the availability of the necessary information and the personnel concerned to start production. The downstream part of the supply chain is linked to the classic function of transport, companies rely on their fleets to ensure the transport of goods from their production points to the customer.

5. CONCLUSION

This work proposes an attempt to grasp the role of the transport activity on the performance of the supply chain of the Moroccan companies. The spread of the pandemic has made it possible to identify the importance of this activity for the firms. The results showed that a supply chain is based on three types of transport: information, factors of production, and goods. The combination of these three actors made it possible to preserve the proper functioning of the supply chain. Indeed, we can conclude that during the Covid-19 pandemic, companies began to look for alternatives to replace the dysfunction that affected these actors. The use of new technology has made it possible to resolve certain shortcomings such as the application of teleworking for certain tasks, thus limiting the transport of personnel. The application of technological solutions to maintain the flow of information internally, but the presence of physical transport remains essential in most cases, particularly with public administration and bank branches...etc. Similarly, companies rely more and more on organizations specializing in the transport activity to guarantee the transport of their goods and preserve the proper functioning of their supply chains, this has made it possible on the one hand to reduce the high costs generated by the acquisition of clean means of transport and on the other hand to focus on their essential activities.

The study has some limitations, including the lack of a theoretical framework that enriches our discussion. In addition, the transport activity is closely linked to the financial and managerial development of companies, which can differentiate the results obtained according to the level of development. Moreover, no one denies the importance of transport activity and its direct impact on supply chains. Finally, the development of the digitalization of the supply chain made the dependence of companies on the transport activity less and less than before, especially at the level of the transport of information and personnel.

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TWO TALES OF WOMEN'S UNPAID HOUSEHOLD PRODUCTION: EVIDENCE FROM MOROCCAN HOUSEHOLDS

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ABSTRACT

We build on Sevilla-Sanz et al. (2010) to study the plausibility of the doing-gender hypothesis by confronting microeconomic unitary and bargaining models with empirical evidence from the 2011-12 Moroccan Time-Use Survey. Instead of wages, and assuming major dysfunctions in local job markets especially the documented disconnect between education attainment and employment outcomes, we disentangle the human capital components of the wage function to study their effects separately. We use intra-household differentials in education and individual job market proxies (age, potential years of experience, occupation status, etc.), and keep regional disparities as an important control. We find that the Moroccan case exhibits conflicting results: the wife-to-husband education differential does not reduce women's share of housework, thus leaning towards the gender hypothesis, whereas both female and male occupation statuses align with the microeconomic theory. This finding might suggest that the central explanatory standing of education attainment as documented in applied economic literature on industrialized countries, might not earn center-stage status in the case of developing countries like Morocco.

Keywords: *Bargaining models, Doing-gender hypothesis, Family economics, Housework specialization, Job market, Moroccan time-use survey, Regional disparities, Social norms, Tobit, Unitary models*

1. INTRODUCTION

The Stiglitz Report (2010) aimed at shedding light on non-observed economic realities. In doing so, it revived interest in time-use surveys[1]. These surveys have stressed the empirical significance of household production and particularly the share of women's domestic production in the country's economic output. The Moroccan agency showed that aggregated household production for 2011/12 – as per the restricted scenario (cleaning, cooking, laundry and childcare)– reached 34.5% (285 billion MAD) to 62% of GDP (513 billion MAD), depending on the hourly wage factor retained for the valuation. Furthermore, gendered specialization prevails with 92% of the housework done by women. Women's market and nonmarket time averages 6h21min/day, 79% of which is dedicated to housework. Whereas men total a 6h08min/day average with only a 12% share to housework. We find this to be a compelling case for a micro-econometric contribution that accounts for intra-household dynamics as an explanatory mechanism. Our work adds to the empirical literature on gendered division of unpaid household labor.

[1] Hence, the surveys performed by the French INSEE (Roy 2011, 2012a, 2012b) and by Morocco's national bureau of statistics HCP in 2011-2012 (HCP, 2014)

We show evidence of social norms resistance to standard cost-benefit analysis of both unitary models that posit comparative advantages and bargaining models that use wage and human capital as a proxy for power within the household. We build on Sevilla-Sanz et al. (2010) and study intra-household disparities in education to test the implications of *unitary* and *bargaining* models of the household, henceforth referred to as *the traditional hypothesis*. Also, we include job-market relevant characteristics (potential years of experience, age and occupation status) to help account for relative ability or skill differentials within the household. Finally, we compare coefficients estimates across OLS and Tobit specifications and provide comparisons across sample selections to elucidate the impact of marriage. The case of Morocco is particularly interesting for being both an African developing country and a closer Mediterranean example with Arabic/Muslim culture. A land of frontiers and crossings, prone to cohabiting contradictions merits a closer empirical look through the scopes of doing gender and traditional hypotheses. We use the Moroccan Time-use Survey (ENET) to construct a measure of specialization or gendered share. The ENET survey provides both male and female time uses during a reference day across 144 slots of ten minutes. We focus on housework and follow a definition that encompasses cooking, indoors and outdoors cleaning, laundry, running errands, shopping and providing necessities, repairs and maintenance, management tasks (bills, utilities, banking, administrations, etc.)

2. THEORY IN CONFLICT

2.1. Establishment of a new wave of microeconomics

The traditional hypothesis are microeconomic models pertaining to a tradition that studies the family and related issues through the lens of the economic toolbox. Samuelson (1956) is considered a pioneer of this pathway. Though it was him who first pointed out to the fact that the consumer studied by economists isn't an individual agent but a family group, it's the Columbia-Chicago's *New Home Economics* (NHE) that would establish the family as a serious economic field of research. The credit falls to the groundbreaking work of Mincer (1960, 1962, 1963)[2], Becker (1965)[3] along with Lancaster (1966). It offered to the social science community an interesting conceptual framework to mobilize. Following that, later refined versions were produced by a second-wave theoreticians Grossbard-Shechtman (1984); Chiappori (1988); Rapoport, Sofer, and Solaz (2011). Apps and Rees (2009) provides a useful classification of the foundational works of microeconomic analysis of the household. The authors set three discriminative criteria: i) The nature of the analysis; does it assume a unique player, or does it model the interaction of multiple players? ii) The objective; does the model try to question the foundations of the theoretical corpus, or extend the field upon which the economist's toolbox is applicable? iii) Is household production included as a distinct activity within the household or not? Beyond the standard model of the household as labor provider/consumer of market goods and leisure, a new literature has evolved, including: i) *Cooperative games models*: Samuelson (1956) and refined versions of his "*consensualist"* work produced by Apps and Rees (1997, 2002), Basu (2006), Browning and Chiappori (1998), Chiappori (1988, 1992); Becker (1981), and Nash equilibrium-based works of McElroy and Horney (1981) and that of Manser and Brown (1980). ii) *Non-cooperative models*: Leuthold (1968), Ashworth et Ulph

[2] Mincer (1962) studied the determinants of women's labor-supply in family contexts (number of children, own earning power, spouse's earning power, etc.); and established the positive effect of wages on the labor supply of women. He was first to introduce the three uses of time: work at home, leisure and market work. And was also a precursor of the time allocation models (Mincer 1963) which flourished with Becker.

[3] Becker sought to model family decisions (Becker 1974b, 1976) as a rational utility maximizing behavior leading to equilibrium in different social attributions of the family (marriage, child rearing, household production, intergenerational transfers). Another relevant aspect to our study is that the *Beckerian* view sets a clear mechanism as the driving force behind marriages: the expected and optimized surplus to both partners in comparison with their previous state of celibacy (Becker 1973, 1974a). Hence, the corollary of labor specialization within the household to achieve a marital output or household commodities (Becker 1965), put into play by the concept of spouses' complementarities.

(1981), (Konrad et Lommerud 1995, 2000), also based on Nash's equilibrium. iii) *General equilibrium models*: Walras-inspired models, (Apps, Savage and Jones, 1981; Ulph review of Apps,1983) and the general equilibrium-based models of marriage of Becker (1973, 1974a) and Grossbard (1984).

2.2. Social norms, challenging empirical literature

Moroccan sociological surveys (Tozy et al., 2012) do demonstrate the explanatory importance of intra-household dynamics in the context of a Moroccan society in motion[4]: the family evolves towards a nuclear structure, women's education is more pervasive, progressive laws, surge of women's participation rate, etc. According to Tozy et al. (2012), the management of family affairs generally relies on a *consultative cooperative decision-making* mode, as most respondents believe in the positive contribution of egalitarian behaviors in consolidating the social cohesion. However, some dimensions[5] of family decision-making still resist this trend and assert more wife-to-husband obedience modes. It is not clear therefore if this decision-making mode clashes with gendered social norms or accommodates them; consultation does not obstruct specialization. Field study of female factory workers in Casablanca (Bouasria, 2013) has shown that roles within the family are shaped by a dialectical dynamic of symbolic concepts such as identity, altruism and honor. Although many of those women are the principal earner of the family, there is no linear transition from traditional values to a position of power based on economic contribution. Rather, it is a sort of a *bended conservative dynamic* that results in different structures of negotiation. Thus, not permitting to establish the emergence of a unique family model. Therefore, roles, powers, economic contributions are movable loci within a negotiable socioeconomic field of the family. In the same line, Killewald (2016) uses US longitudinal data to show that men's unemployment is the major threat to marriage stability, instead of the economic empowerment of women. Even with when controlling for structural changes in female labor force participation. Thus, it is not the economic independence of women that induces instability but the deviance from social norm regarding the role of men.

3. RESEARCH DESIGN

3.1. Data, the Moroccan Time Use Survey

L'Enquête Nationale sur l'Emploi du Temps (ENET) covered 9,210 Moroccan households between 2011 and 2012. The survey describes and evaluates the different tasks performed by members of the surveyed household. It reports demographic, economic and socio-cultural variables. The survey is based on three questionnaires, qualitative and quantitative: one family questionnaire, one individual questionnaire for the female and male adults in the household and a final questionnaire for one child. The survey covers a whole year to account for cyclicality, economic fluctuations. It monitors a full 24-hour-day per person. All days of the week are accounted for. For the purpose of our study, we discard one-person households and keep those with two adult persons and above. That sample is considered a *pooled sample* of female and male adults and serves as a general benchmark that captures all factors and trends that we might lose when restricting the selection on married couples only.

3.2. Econometric specification

We extend the work of Sevilla-Sanz et al. (2010) to the Moroccan case. Instead of relative wage dummies, we introduce variable for differences in educational attainment $\boldsymbol{EDUdf_i}$ for household *i* that takes a value of $\boldsymbol{EDUdf_{i1}} = 1$ when the wife is equally educated relatively to her husband

[4] Other surveys nuance such conclusions (HCP 2005, 2006) and reveal that the family holds on to some traditional features (economic solidarity, large family structures, reputation, honor and endogamy).

[5] Percentages of participative cooperation decrease regarding women's job search (59%), budget management (55%) or asset management (64% - 66%) ; in favor for a male-dominance (~1/3 of respondents).

and a value of $\boldsymbol{EDUdf_{i2}}$ =2 when the wife has a higher level of education. We capture ability and skill disparities between spouses via individual job market characteristics $\boldsymbol{Z_{iw}}$ for wives and $\boldsymbol{Z_{ih}}$ for husbands. The vector $\boldsymbol{X_i}$ groups all household level covariates (count of children under 15, household income, etc.), regional controls along with dummy variables for the nature of the observed day (weekdays versus weekends, normal days versus exceptional occasions). Notwithstanding the fact that information on wages is unavailable, we think that education, age and potential years of experience ($\boldsymbol{Z_i}$) are direct socio-demographic and non-market factors more suitable for intra-household analysis. Firstly, this permits to eradicate the mismatching or discrepancies between education and wage levels; knowing that overqualified joblessness is a major job market dysfunction in Morocco. Highest unemployment rates are reported for the highly educated[6]. Conversely, wage levels do not reflect education attainment. Therefore, the implementation of education differentials expresses an undistorted factor of household behavior. Secondly, beside the fact that they provide for trend analysis over the life cycle, as continuous variables, the measures of age and potential years of experience indicate the level of accumulated symbolic and social capital. Particularly in cultural contexts characterized by a vertical structure of authority and legitimation. A clear instance is the equivocal judiciary implementation of the regulation regarding the marriage of minors, a law that was not fully embroidered in local culture. The suggested regional controls account for the limits to the expansion of market structures in developing countries like Morocco. We follow Gimenez-Nadal and Molina (2014) and Sevilla-Sanz et al. (2010) and consider regional effects as an important factor in our discussion of the results. The basic argument is that localities with different levels of market integration or market development face limits to the marketization of housework services and goods as a supply-side, while defining at the same time the earning power of individuals from the demand-side. Less developed regions indicate lower levels of cost of living, and less market job opportunities. Therefore, we anticipate a prevalence of non-market activities as an increase in $\boldsymbol{y}$. The other argument for the careful consideration of regional effects is the fact that Morocco inherited a geographically centralized economy from the colonization era. Contemporary mega-infrastructure projects tended to converge with this heritage, consecrating the *Northern Atlantic Coastline* as the economic core (Tangiers-Kenitra-Rabat-Casablanca-Safi), albeit timid reforms. We estimate both OLS and Tobit specifications for the following equation:

$$y = EDUdf_{i1} \,.\, \beta_1 + EDUdf_{i2} \,.\, \beta_2 + Z_{iw} \,.\, \delta_{iw} + Z_{ih} \,.\, \delta_{ih} + X_i \,.\, \rho_i + \varepsilon_i \qquad (1)$$

where y takes two similar expressions:

- When the sample is restricted on married couples.
-

$$y = \frac{Hwife}{Hwife + Hhusband}$$

- When the sample is extended to pooled sample.
-

$$y = \frac{Hfemale}{Hfemale + Hmale}$$

[6] Around 19.7% to 25.5% across different types of high education graduates. A recent study of the Haut Commissariat au Plan revealed the mismatches between the Education system and a weak job market (Forthcoming).

where:

- H_{wife} , H_{female} : Housework time for household *i* for the wife (the adult female member).
- $H_{husband}$, H_{male} : Housework time for household *i* for the husband (the adult male member).

The dependent variable is the ratio of female housework over the sum of both female and male housework time. We can interpret the dependent variable as the woman's share of housework, or as a gendered ratio of household specialization; where values 0 and 1 accounts for complete specialization, and 0.5 accounts for no specialization. According to theory, we expect the coefficients β_1 and β_2 to be negative and stable across specifications with $|\beta_1| < |\beta_2|$. Although, the point of our analysis is to test whether the effect increases as the intra-household difference in education widens ($\beta_1 \neq \beta_2$). In practical terms, we estimate our coefficients and resort to *Wald Test* for $\beta_1 = \beta_2$. As the reference region is fixed at 1, Tangiers-Tetoutan-Al Hoceima, we anticipate that regional dummies will show positive coefficients (i.e., gradual increases in female housework), particularly for regions away from the *Economic Atlantic Axis*. Regional dummies factor in many confounding unobserved variables (geography, dialect, cultures, military bases, etc.), we focus our attention on the distance-to-the-core geoeconomics' interpretation.

4. RESULTS

In Table 1, we estimate weighted equations 1 to 3. On the right-hand side we focus on the dummy variable of education differential where the base case is "*wife less educated*". We compare "*wife equally educated*" to "*wife more educated*" and proceed with a Wald test of the coefficients across Tobit and OLS estimations, and across sample. As per the Tobit specifications, we apply censoring to the lower limit only, as we face a phenomenon that predominately shows females to provide most of the housework. Therefore, censoring to the upper limit does not seem to be sensical. We accept that males report zero values in housework but show reservations regarding female zero values. Thus, and conversely to the former case, we interpret the latter as censored data. The Tobit and OLS estimates in (1) and (2) are close to equal (~1.9% decrease), significant at the 5% level when a woman is more educated than her male counterpart and exhibit the expected signs. We fail to reject the coefficients' equality hypothesis, the woman being more educated does not induce any greater reduction in housework compared to when she is of the same education level as the male adult. Equation (3) is estimated over a stricter sample, the coefficients' sign reverse to positive with stronger statistical significance when wife is more educated than husband. We can reject the equality of coefficients at the 5% level: wives with more education relative to their partners have additional housework more than their equally educated homologues, adding 2% to their housework share, relatively to the base case. This finding comforts the doing-gender hypothesis along with the compensation of deviance from social norms. In summation, the effect of relative differences in education does not resist the conditioning over married only.

Table following on the next page

	Baseline Specification		
	Pooled Sample		*Married Couples*
Housework Female Share	*Tobit (1)*	*OLS (2)*	*OLS (3)*
Education Differential *(Ref Wife less educated)*			
Wife equally educated	*-0.0072*	*-0.0074*	*0.0019*
	(0.0059)	*(0.0058)*	*(0.0073)*
Wife more educated	*-0.0191***	*-0.0189***	*0.0206***
	(0.0080)	*(0.0078)*	*(0.0093)*
Constant	*0.8897****	*0.8907****	*0.8835****
	(0.0042)	*(0.0041)*	*(0.0057)*
Controls	*No*	*no*	*no*
Regional Fixed Effects	*No*	*no*	*no*
Observations	*7224*	*7224*	*4140*
R-squared		*0.0010*	*0.0013*
Prob>F($\beta_1=\beta_2$)	*0.1363*	*0.1412*	*0.0306*

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Estimators are weighted using the household-level probability sample weights reported by the HCP.

Table 1: Housework specialization and education differentials
(Source: Own calculations)

In Table 2, relative difference in education does not hold when controls over individual and household characteristics are introduced. Age expresses a quadratic relationship to woman's housework share. The age variable puts men and women in a symmetrical opposition of life cycles; where men seem to increasingly reduce the ratio of housework as they age, up to an extremum where the effect reverses back to neutral. The complete opposite applies to women's life cycle, increasingly augmenting their share of housework before regressing to a null effect. Other notable effects : Occupation status (activity type) for men and women seem to have significant impact in line with expected microeconomic implications. Potential years of experience female seem to have a significant positive impact albeit very week (+0.14%), and not resisting the sampling restriction over marriage. Regional effects show positive and significant coefficients robust to varying specification for regions that are in a distance from the *Atlantic economic coastline*: L'Oriental ~ +4%, Fez-Meknes ~ +2%, Marrakech-Safi ~ 3% to 3.5%, Guelmim Oued Noun ~ +5.4%. This corroborates the expected geographical disparities. Lastly, controls over the nature of the day the observations were made does have a strong, robust and significant reduction in the housework load that falls on women. Finally, the male (husband) not having a healthcare coverage seem to be associated with somewhat robust positive effect around ~ 1.4% to 2% increase; the interpretation of which does not come clearly to mind.

Table following on the next page

	Full Specification			
	Pooled Sample		Married Couples	
Housework Female Share	Tobit (4)	OLS (5)	Tobit (6)	OLS (7)
Education Differential *(Ref Wife Less educated)*				
Wife equally educated	0.0070	0.0068	0.0040	0.0039
	(0.0061)	(0.0060)	(0.0074)	(0.0074)
Wife more educated	0.0101	0.0100	0.0106	0.0105
	(0.0084)	(0.0082)	(0.0097)	(0.0096)
Age Male	-0.0084***	-0.0082***	-0.0061***	-0.0061***
	(0.0010)	(0.0010)	(0.0021)	(0.0021)
Age Male Squared	0.0001***	0.0001***	0.0001***	0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Age Female	0.0079***	0.0077***	0.0053***	0.0052***
	(0.0013)	(0.0013)	(0.0020)	(0.0020)
Age Female Squared	-0.0001***	-0.0001***	-0.0001***	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Activity type Male *(Ref active Employed)*				
Jobless	-0.0470***	-0.0469***	-0.0954**	-0.0958**
	(0.0151)	(0.0149)	(0.0379)	(0.0380)
Student	-0.0031	-0.0032	-0.2449***	-0.2453***
	(0.0111)	(0.0109)	(0.0290)	(0.0287)
Other Non-actives	-0.0483***	-0.0490***	-0.0897***	-0.0897***
	(0.0181)	(0.0179)	(0.0299)	(0.0299)
Activity type Female *(Ref active Employed)*				
Jobless	0.0734***	0.0720***	0.0802***	0.0801***
	(0.0195)	(0.0193)	(0.0236)	(0.0237)
Housewife, Home staying person	0.0780***	0.0768***	0.0476***	0.0478***
	(0.0148)	(0.0146)	(0.0184)	(0.0184)
Student	0.0043	0.0043	0.0850*	0.0847*
	(0.0230)	(0.0226)	(0.0463)	(0.0463)
Other Non-actives	-0.0629*	-0.0579*	-0.0141	-0.0125
	(0.0348)	(0.0337)	(0.0424)	(0.0419)
Potential Years of Experience				
Male	0.0001	0.0001	-0.0005	-0.0005
	(0.0004)	(0.0004)	(0.0006)	(0.0006)
Female	0.0014***	0.0014***	0.0007	0.0007
	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Number of Children < 15 yrs. *(Ref=0)*				
1 child	0.0122	0.0116	0.0264*	0.0260*
	(0.0081)	(0.0079)	(0.0135)	(0.0133)
2 children	0.0121	0.0118	0.0246*	0.0244*
	(0.0086)	(0.0085)	(0.0139)	(0.0138)
3 children	0.0107	0.0105	0.0275*	0.0275*
	(0.0097)	(0.0095)	(0.0149)	(0.0148)
4 children and more	0.0036	0.0035	0.0239	0.0240
	(0.0115)	(0.0113)	(0.0158)	(0.0156)
Rural vs *(Ref Urban)*	-0.0022	-0.0024	0.0005	0.0002
	(0.0061)	(0.0061)	(0.0073)	(0.0072)
No Healthcare Policy, Male	0.0211***	0.0207***	0.0145*	0.0142*
	(0.0071)	(0.0070)	(0.0084)	(0.0083)
Weekend vs *(Ref Weekdays)****, Male***	-0.0046	-0.0045	-0.0069	-0.0069
	(0.0058)	(0.0057)	(0.0070)	(0.0070)
Special Occasion vs *(Ref Normal)****, Male***	-0.1039***	-0.1035***	-0.1277***	-0.1275***
	(0.0082)	(0.0081)	(0.0103)	(0.0103)
Weekend vs *(Ref Weekdays)****, Female***	0.0088	0.0086	-0.0012	-0.0012
	(0.0057)	(0.0056)	(0.0070)	(0.0069)
Special Occasion vs *(Ref Normal)****, Female***	-0.0307***	-0.0298***	-0.0359***	-0.0348***
	(0.0090)	(0.0089)	(0.0118)	(0.0116)
Constant	0.8584***	0.8630***	0.8953***	0.8971***
	(0.0358)	(0.0352)	(0.0508)	(0.0506)
Regional Dummies	yes	yes	yes	yes
Observations	7224	7224	4140	4140
R-squared		0.1211		0.1270
Prob>F($\beta_1=\beta_2$)	0.6889	0.6779	0.4398	0.4373

*Robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Estimators are weighted using the household-level probability sample weights reported by the HCP. Non-significant dummies not displayed: household Income, type of household, Ramadan. Regional dummies are collapsed, effects discussed in the results section.*

Table 2: Housework specialization, education differentials and human capital proxies (Source: Own calculations)

We fail to reject that the coefficient for "wife more educated" is different from that of equally educated individuals, across all specifications. Therefore, we cannot assert that difference in education in favor of women tilts the balance towards less housework. It should be noted that both education differentials modalities seem non different from the base case, as if education did not matter at all when controlling for the occupation status (activity type).

5. CONCLUSION

Assuming major dysfunctions in local job markets especially the documented disconnect between education attainment and employment outcomes, we disentangle the human capital components of the wage function to study their effects separately. We use intra-household differentials in education and individual job market proxies (age, potential years of experience, occupation status, etc.), and keep regional disparities as an important control. We find that the Moroccan case exhibits conflicting results: the wife-to-husband education differential does not reduce women's share of housework, thus leaning towards the gender hypothesis, whereas both female and male occupation statuses align with the microeconomic theory. This mixed finding does not permit to champion a theory instead of the other. And might suggest that the central explanatory standing of education attainment as documented in applied economic literature on industrialized countries, might not earn center-stage status in the case of developing countries. A future extension of the research would be to compare the effects of those human capital components separately across non-peer countries.

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THE INFLUENCE OF THE TERRITORIAL SPORTS ECOSYSTEM ON THE SOCIAL INCLUSION AND PROFESSIONAL INSERTION OF YOUTH IN MOROCCO

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ABSTRACT

The overall objective of this paper is the conceptualization of sport as a territorial ecosystem, clearly defining the roles and participation modalities of the different actors and stakeholders. The intention is to guarantee a consolidated social inclusion and a socio-professional integration creating sustainable territorial development through sport. In this perspective, the sport ecosystem represents a precious asset for research. Sport can represent a good factor for the inclusion of socially disadvantaged groups, especially young people, and can be a truly powerful educational tool in promoting social inclusion and professional integration. In this logic, this paper aims to find a new, innovative way to explain different elements of sport and social inclusion and to improve the proactivity of the young people. The topic is important, because of the problem of increasing number of young people that have problem of social exclusion, less physical activity and unhealthy lifestyle. Therefore trough the conception of a territorial sport ecosystem it is possible to act preventively on a "disease" that after installed can become incurable. This paper first presents the theory and concepts related to territorial sport ecosystem and social inclusion before providing case studies that demonstrate the theories in sports contexts. The purpose is to offering insights to propose - thanks to a rigorous theoretical and empirical study - a model of territorial development through the creation of a sports ecosystem, and understand how well the sports logic can coexist with the social inclusive logic.

Keywords: *Professional insertion, Social inclusion, Social inclusion through sport, Sustainable territorial development, Territorial sports ecosystem*

1. INTRODUCTION

"*The knowledge of sport is the key to the knowledge of society*[1]", said Norbert Elias in his book entitled Sport and Civilization. Sport, mirror of the society in which we live, "*is in the diversity and complementarity of its dimensions a factor of well-being and health, a strong lever of human development, an activity generating investments, jobs and value creation, and a factor of inclusion, of social cohesion and fight against misery, exclusion and marginalization*[2]". Sport, through its disciplines, federations, clubs and associations is a social phenomenon. On an individual or collective level, it plays a determining role in what is called "*living together*". It is also a factor of social inclusion and can recreate social links and share values. In fact, The world today confronts the individual and especially young people with many pitfalls that can threaten the smooth running of their life in society: school dropout, disinsertion, unemployment,

[1]Sport and Civilization, white paper on sport. CNOSF, 2006
[2]Message of HM King Mohammed VI to the participants of the National Conference on Sport, Skhirat, 24 October 2008

use of psychotropic substances… Sport aims to prevent the emergence of such problems by intervening as early as possible when these situations arise. in this logic, a territorial sport ecosystem can represent a good factor for the inclusion of socially disadvantaged groups, and can be a truly powerful educational tool in promoting various values such as tolerance, solidarity, cooperation, and an intercultural vision of our societies. By bringing people, who do not usually interact, to know each other, to speak, to share a sense of belonging, sport can be really useful. It allows this people coming from different segments of the population to go over hate speeches they could hear around them and thus combat any form of social exclusion. This paper aims to propose a model of territorial development through the creation of a sports ecosystem enable all young people from disadvantaged social backgrounds to find the path to success, by promoting equal opportunities through support and privileged access to training or employment. In these landlocked territories economic and social difficulties are multiple. The presence of such as ecosystem is decisive. The main objective of our research is to study the way in which the actors of a territory integrate the stakes of territorial development into their management methods thanks to the implementation of socially responsible approaches in the field of sports. And to propose a territorial development model through the creation of a territorial sports ecosystem guaranteeing a consolidated social inclusion and a socioprofessional insertion creating value and quality jobs. And recognize the ways in which sport participation can address issues of social exclusion and inclusion; and be alert to the possible unintended consequences of sport programming.

2. CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1. Conceptual framework

2.1.1. Sport

Many authors, in the field of STAPS and outside, propose a definition of. It is defined as "*a set of physical exercises in the form of individual or collective games, which can give rise to competition and which are practiced by observing certain rules*[3]". Pierre de Coubertin, founder of the Olympic movement, defined sport as "*the voluntary and habitual cult of intensive muscular effort, supported by the desire for progress and which can go as far as the risk*[4]". So we can see that there are five essential and fundamental notions to define this concept: "*initiative, perseverance, intensity, search for improvement and disregard of possible danger*[5]".

2.1.2. Ecosystem

James Moore drew on the concept of the "*biological ecosystem*" (Arthur Tansley, 1935) to give meaning to a new concept that questions the coordination of the market through competition or hierarchy. Indeed, in the biological ecosystem, different living species coexist and interact to maintain themselves and the site. For example, if one species of predator or prey evolves, the other does the same to preserve the balance of the environment. The "*business ecosystem*[6]", and has since become part of everyday managerial language. "*It refers to a community of actors gathered around technical specifications defined by a dominant company*[7]". However, the academic world has been much more lukewarm about it, "*the BES has had to find its place in a particularly dense conceptual field (network, strategic alliance, virtual enterprise, etc.) makes it impossible to give an explicit and complete definition of BES*[8]". For Moore, the "*business ecosystem*" introduces the idea of co-evolution and coopetition of the actors of a market through cooperation in the development of collective strategic solutions for the ecosystem.

[3] Dictionary LE PETIT LAROUSSE; Dictionary 2009, edition-Larousse, Paris 2008, p.961
[4] Pierre de Coubertin, Pédagogie Sportive, 1922.Préambule,
[5] Idem
[6] James Moore (1993), Predators and prey : a new ecology of competition, Harvard Business Review, mai-juin.
[7] F. Fréry, A. Gratacap, T. Isckia (2012), Les écosystèmes d'affaires, par-delà la métaphore, Revue française de gestion N° 222
[8] Idem

"*This idea is valid for the most complex problems or situations where individual actors do not have the skills, resources and knowledge to produce solutions alone*[9]".

2.1.3. Territorial development

The concept of territorial development is so complex, it is sometimes assimilated with the concept of land use planning, sometimes with that of local and regional development, it is strongly intertwined with the concept of human and sustainable development and it borrows much from several strategic and operational managerial approaches.According to BAUDELLE and AL, (2011), territorial development can be defined as follows: "*It is a voluntary process that seeks to increase the competitiveness of territories by involving actors in concerted actions that are generally cross-cutting and often have a strong spatial dimension*[10]". Also, starting from the global and systemic definition of the territory seen previously (Alexandre Moine), it seems to us that territorial development would be a set of socio-economic, environmental, cultural and institutional processes, composed for and by men and women who, thanks to resources and know-how, try to make their collective and individual lives evolve on this territory. The territory is therefore at the heart of the development issue, with all its resources, its constraints and its material and immaterial specificities such as the actors and their way of functioning.

2.1.4. Social inclusion

Social inclusion is a term increasingly used to encapsulate a range of issues concerning poverty, social injustice and inequality, issues that would seem to universal and prevalent in all societies. As represented in Fig. 1, Column 1 lists definitions of social inclusion, when definitions of social inclusion multiply and diverge from one another, then the concept of social inclusion becomes interchangeable with other concepts (column 2). Column 3 reviewing the many different purposes and aims attributed to social inclusion.

Figure following on the next page

[9] Malek BOUHAOUALA. French mountain sports tourism: A specific social and economic ecosystem. Juristourisme No. 198 of June 2017. Éditions Dalloz. Pp. 23-27

[10] AUDELL et al. Territorial development in Europe. Concepts, issues and debates. Rennes, Presses Universitaires de Rennes, coll. Didact Géographie, 2011, 281 p

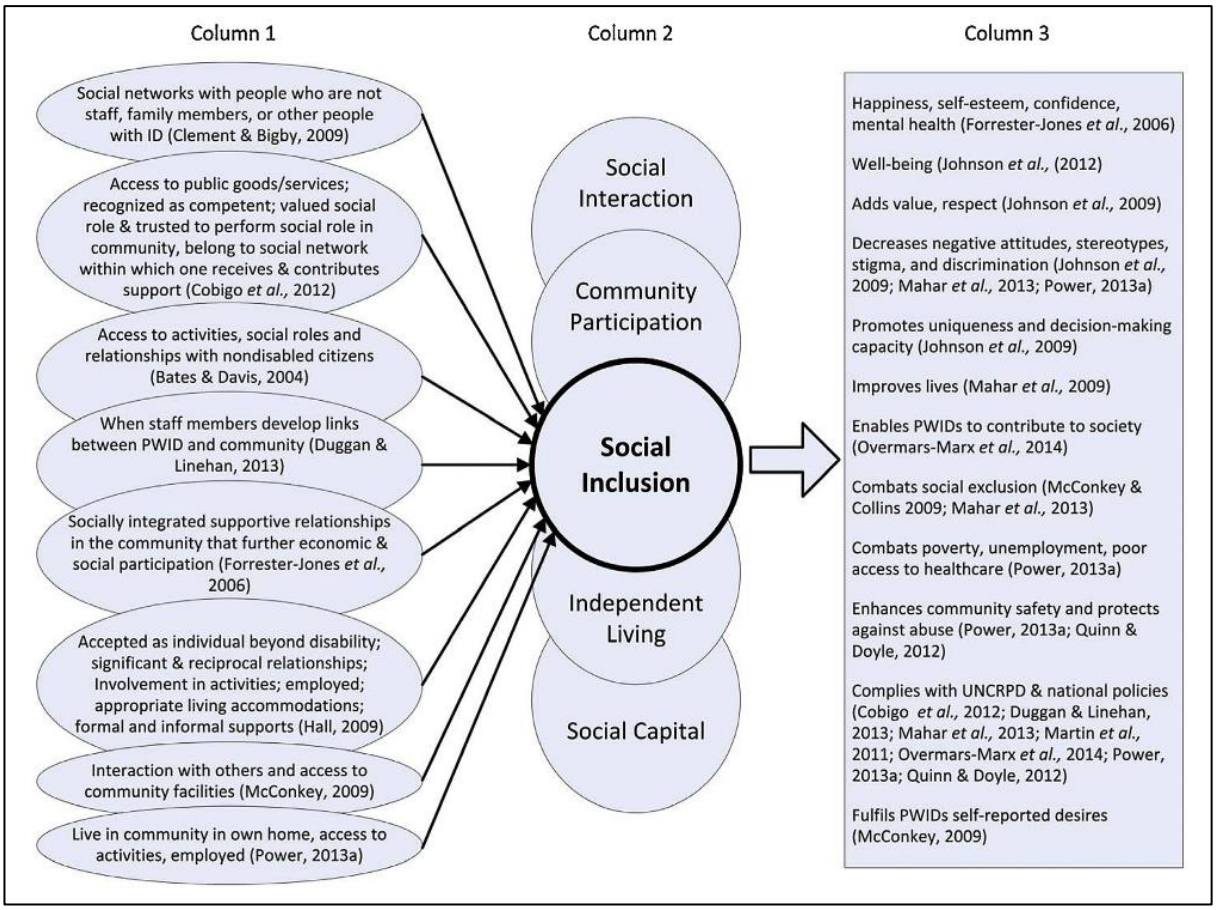

Figure 1: Social inclusion, definition, terminologie, and aims. (Simplican et al [11])

2.2. Conceptual analysis

2.2.1. social and economic ecosystem

In recent decades, several authors and researchers have begun to conceptualize the notion of ecosystem outside of the biological context (Arthur Tansley, 1935), particularly in the field of business (James Moore, 1996), where the actors involved in a business ecosystem interact in the same way and aim for a common goal. Thus, James Moore cited some characteristics of a business ecosystem, namely :

- The actors (including companies) are of different natures.
- Ecosystem innovation is often radical and open (collective).
- None of the actors in the ecosystem has all the skills, resources, and knowledge.
- Each of the actors masters his or her field and has the capacity to adapt quickly.
- Alignment of all players on the same vision.
- Existence of a system of inter-firm relationships allowing the sharing of contributions.
- The existence of pivotal or leading companies,
- Coexistence of exploration and exploitation players.

Malek Bouhaouala in his article (published in 2017) proposed a conceptualization of mountain sports tourism as an ecosystem that allows us to go beyond visions by sector or by professional field. In this regard, in this configuration, the socio-economic actors no longer perceive themselves as competitors, but rather as partners.

[11] Stacy Clifford Simplican, Geraldine Leader, John Kosciulek, Michael Leahy. Defining social inclusion of people with intellectual and developmental disabilities: An ecological model of social networks and community participation, Research in Developmental Disabilities, Volume 38, 2015, Pages 18-29, ISSN 0891-4222, https://doi.org/10.1016/j.ridd.2014.10.008.

He adds that it is very difficult to talk about a business ecosystem for the case of sports tourism in the Auvergne-Rhône-Alpes region (AURA) because there are also social concerns carried by the communities. This is why he talks about a social and economic ecosystem (SEE)[12].

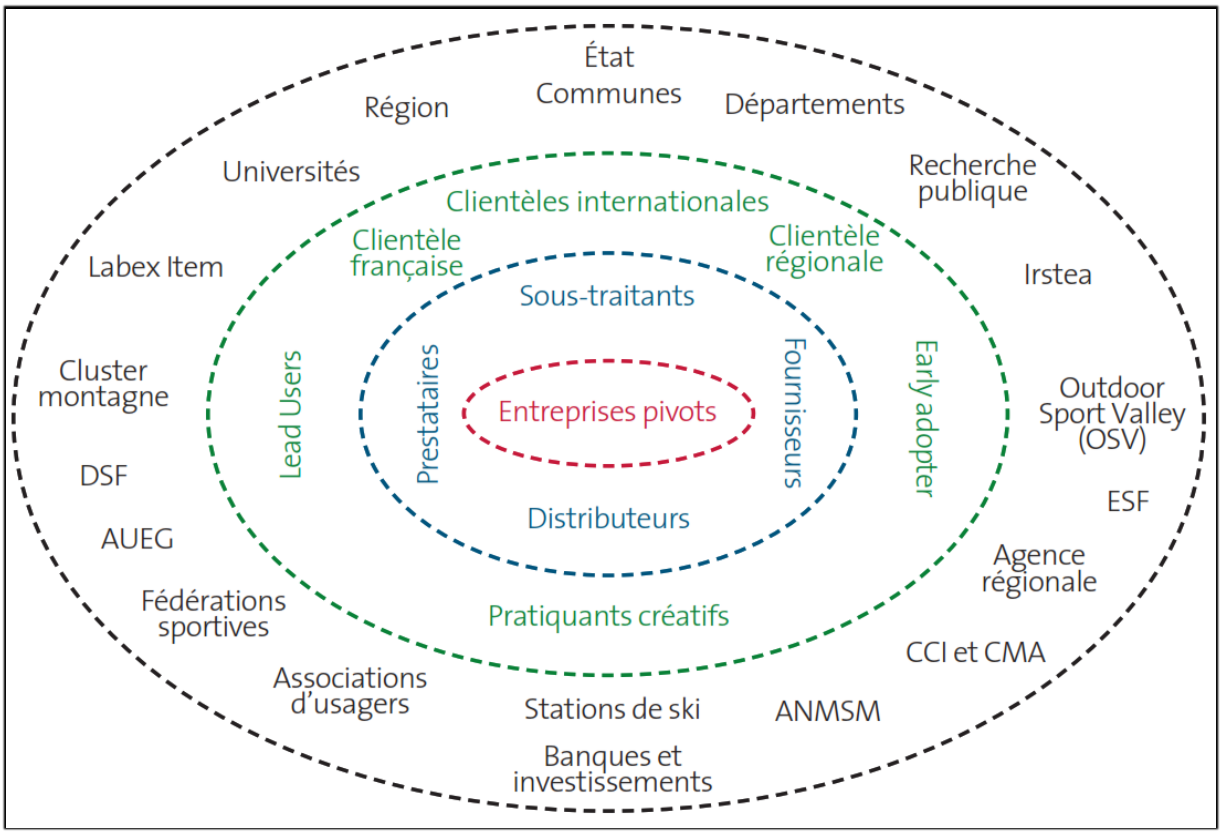

Figure 2: Scheme of the SEE of mountain sports tourism in AURA. (Malek Bouhaouala)

Mountain sports tourism is therefore an economic and social ecosystem specific to the territory, which cannot be relocated and constitutes advantages for the economic and social development of the territory. It is characterized by an anchorage in the regional territory, a dependence on the comparative and built advantages that the mountain represents, a dependence on the know-how of the local populations, and an involvement of the elected officials and the territorial authorities.

2.2.2. Social inclusion

The model of social inclusion, focuses on two domains; interpersonal relationships and community participation. (Asselt-Goverts, Embregts, & Hendriks, 2013; McConkey & Collins, 2010a), are central to a person's quality of life (Schalock et al., 2005), and both are necessary for social inclusion. These two domains should overlap and mutually support one another, which the model captures by the circulating arrows that course through both domains. "*The model separates the definition of social inclusion from the processes that may produce social inclusion as well as the subjective feelings that may result from inclusion. Instead, he focus on specifying the components of interpersonal relationships and community participation*[13]".

[12] Malek BOUHAOUALA. Le tourisme sportif de montagne français : Un écosystème social et économique spécifique. Juristourisme n° 198 de juin 2017. Éditions Dalloz. Pp. 23-27

[13] Stacy Clifford Simplican, Geraldine Leader, John Kosciulek, Michael Leahy. Defining social inclusion of people with intellectual and developmental disabilities: An ecological model of social networks and community participation, Research in Developmental Disabilities, Volume 38, 2015, Pages 18-29, ISSN 0891-4222, https://doi.org/10.1016/j.ridd.2014.10.008.

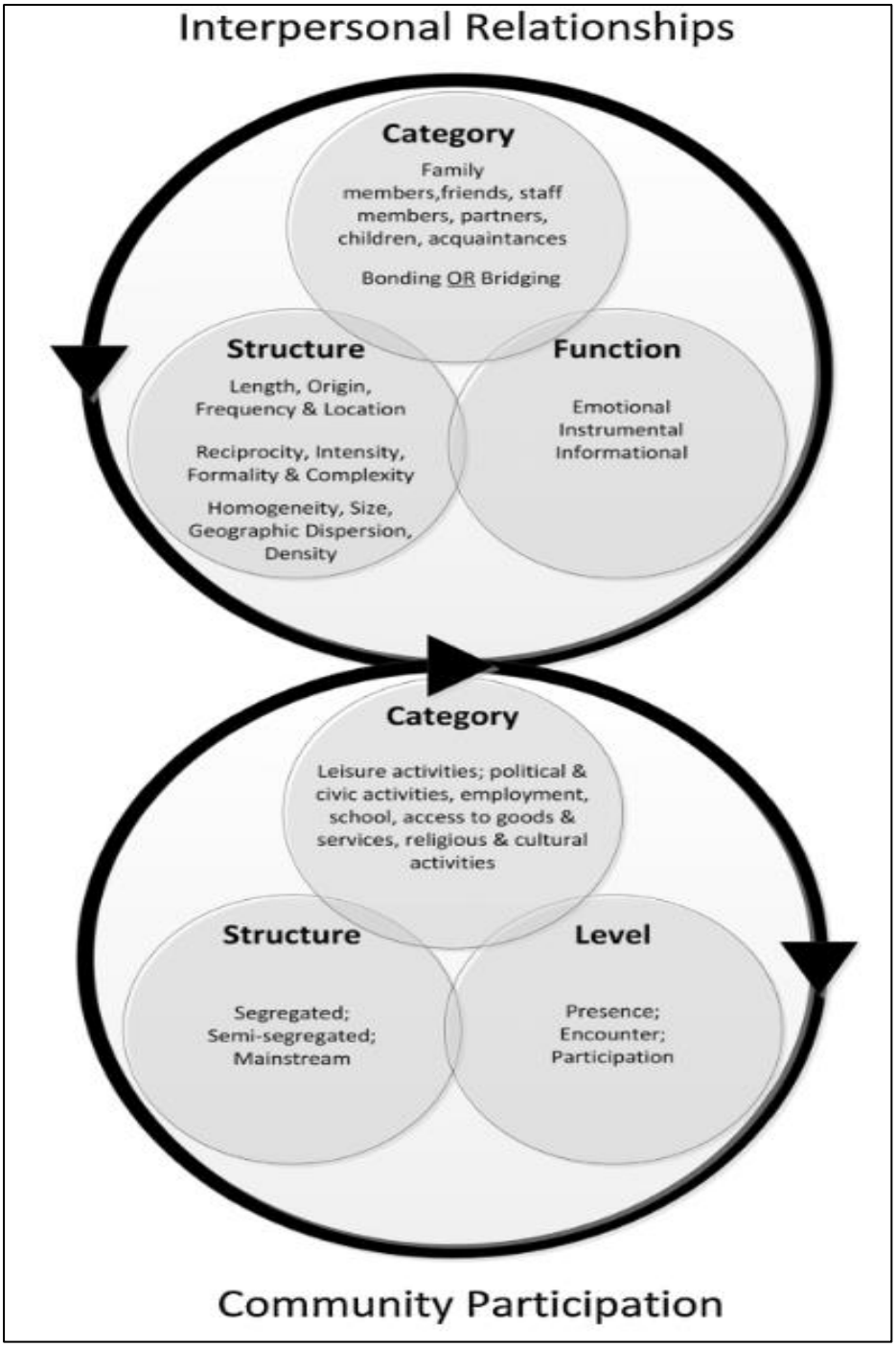

Figure 3: Social inclusion model.(Simplican et al)

2.2.3. Ecological pathways to and from social inclusion

The ecological approach to social inclusion capture how individual, interpersonal, organizational, community, and socio-political variables influence interpersonal relationships and community participation (Overmars-Marx et al., 2014; Verdonschot et al., 2009). "*Ecological conditions can promote or impede social inclusion. Additionally, the outcomes of social inclusion may be positive or negative. the model of ecological conditions and outcomes is not exhaustive, but rather suggestive of the ways in which future research could use an ecological approach to social inclusion*[14]".

[14] Idem

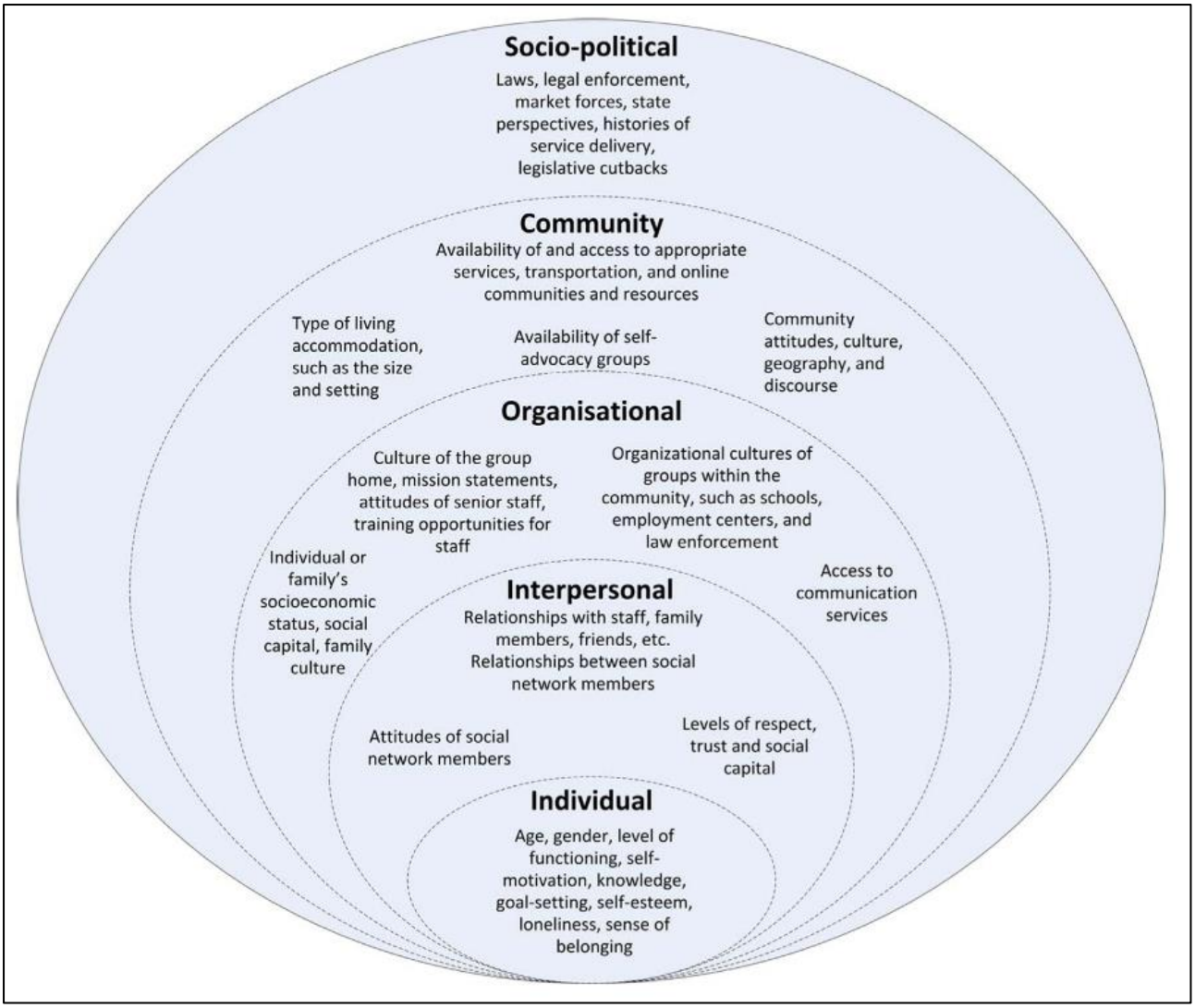

Figure 4: Ecological pathways to and from social inclusion. (Simplican et al[15])

3. MODEL STUDIES

3.1. Sport and social inclusion

Given that sport participation provides a focus for social activity, an opportunity to make friends, develop networks, and reduce social isolation, it seems well positioned to support the development of social capital. A series of connected dimensions of social inclusion can be extrapolated from the literature that provides a useful framework for considering the potential contribution of sport to social inclusion/exclusion (Bailey 2005).

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[15] Idem

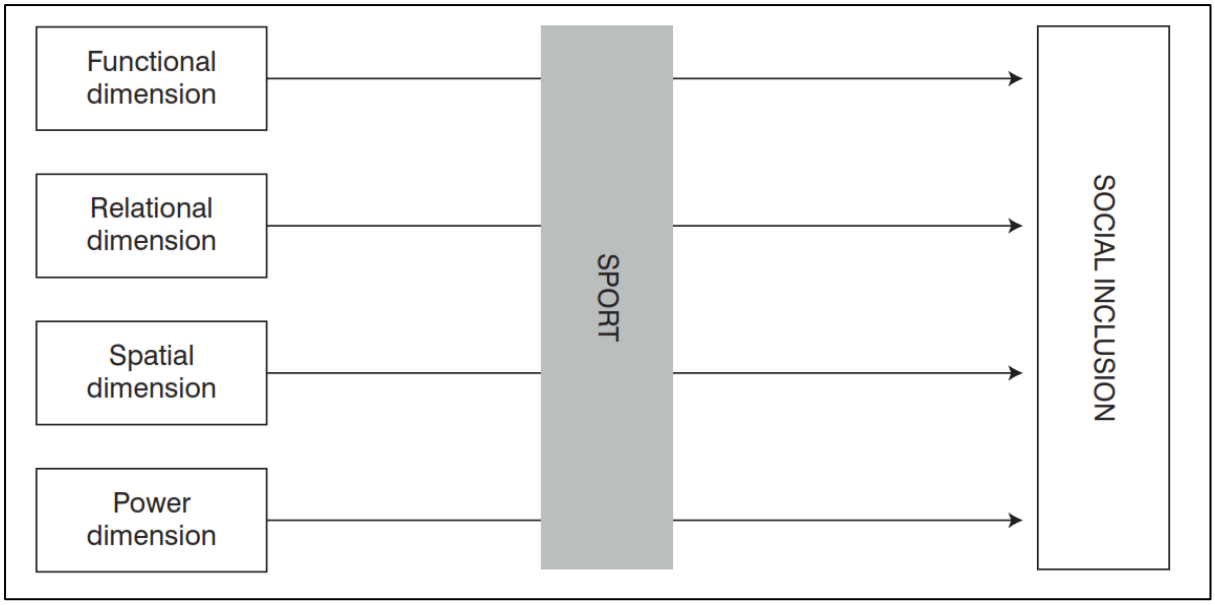

Figure 5: Social inclusion through sport. (Bailey[16])

Sport participation has recently been advanced as a method will lead to some form of personal change, and subsequently this personal change will result in broader, positive societal impacts. "*As such, social exclusion may be reduced when individuals belong to and interact within groups and organisations; sport programming has the capacity – if designed and managed well – to empower and support disenfranchised and marginalised individuals. In other words, sport can be an excellent tool for re-engaging marginalised individuals into society because it can be reflective of the kinds of activities that an individual must be involved in for societal participation; furthermore, sport provides a supportive environment within which to encourage and assist these individuals in their social development and integration*[17]". The literature on sport and social inclusion can be divided into two categories: one focuses on inequality in sport participation, while the other focuses on the individual and collective benefits of sport participation. These two approaches are primarily different perspectives, in that the first focuses on "*social inclusion in sport*", while the second focuses on the individual and collective benefits of sport participation "*through sport*". The "*social inclusion in sport*" perspective focuses on the unequal participation in sport, often of disadvantaged social groups, such as women, the poor, the jobless, the disabled and minority ethnic groups, all of whom are as "socially excluded". The central concern of this perspective is how to involve under-participating groups in sport activities. The other approach, "*social inclusion through sport*", focuses on the benefits that individuals and communities are expected to derive from participation in sport activities, thereby reducing broader social exclusion. This type of research assesses the ability of sport to contribute to the fight against social exclusion, as well as other social benefits. This is the approach most adapted to our research aims and it is the one we are going to follow in this paper, because it is the most adapted to the aims of sustainable territorial development.

3.2. Presentation of the models

A well-cited hypothetical model by Bovaird et al. (1997) shows how benefitsof sport may be interrelated.

[16] Richard Bailey. Youth sport and social inclusion. In Positive Youth Development Through Sport. International studies in physical education and youth sport. Edited by Nicholas L. Holt? by Routledge. P 88. 2007

[17] Jon Welty Peachey and Emma Sherry. Sport and social inclusion. In Managing Sport Development An international approach. Edited by Emma Sherry, Nico Schulenkorf and Pamm Phillips. P 135. 2017

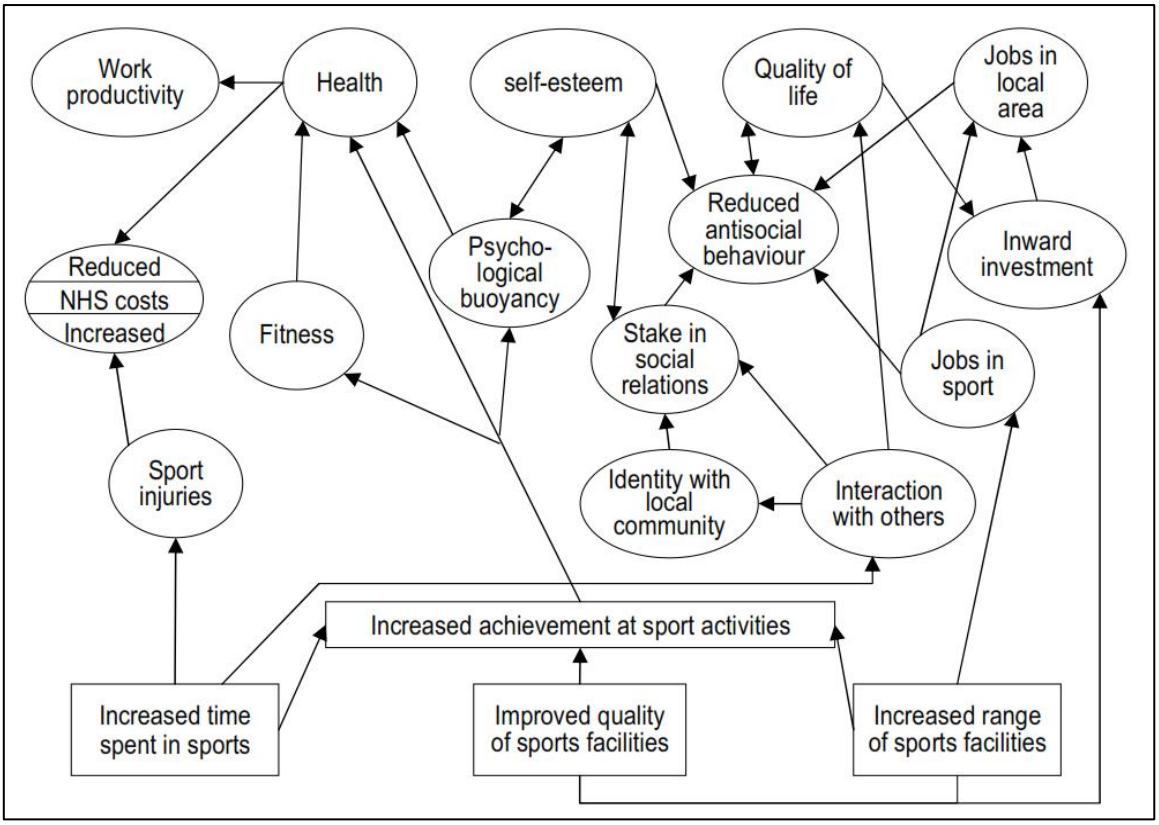

Figure 6: Hypothetical chains of benefits of sports. (Bovaird et al., 1997[18])

The strength of the explanation is related to the ability to measure a number of the intermediate outcomes. For example, one of the 'hypothetical chains' is as follows:

- Increased time spent in sports leads to increased interaction with others, which will increase a sense of identity with the local community.
- Increased identity with the community will lead to a greater sense of having a stake in social relations (an increased sense of 'social inclusion').
- An increased sense of a stake in the community will lead to more sociallyresponsible behaviour and a reduction in anti-social behaviour.

Based on their analysis of the available qualitative literature, Holt et al. (2017) proposed a model for PYD through sport whereby either an implicit or explicit pathway can lead to PYD outcomes. "*In the implicit pathway, the provision of a PYD climate is assumed to directly promote the development of PYD outcomes. Such a climate is characterised by strong relationships between young people and adults, strong peer relationships that include opportunities for peer leadership and feelings of belonging, and support from parents. In the explicit pathway, the PYD climate sets the foundation for the development of PYD outcomes through programmes attached to the sport experience that specifically promote life skills and their transference. Holt et al. (2017) proposed that these pathways can lead to the development of personal (perseverance, respect, problem-solving skills), social (teamwork, belonging and inclusion, communication skills), and physical (movement skills, skills for healthy active living) outcomes*[19]".

[18] Bovaird, T, Nichols, G,Taylor, P.(1997) Approaches to Estimating the Wider Economic and Social Benefits Resulting From Sports Participation, Birmingham, Aston Business School Research Institute.

[19] Matthew A. Pink, John W. Mahoney, John E. Saunders, Promoting positive development among youth from refugee and migrant backgrounds: The case of Kicking Goals Together, Psychology of Sport and Exercise, Volume 51, 2020, 101790, ISSN 1469-0292, https://doi.org/10.1016/j.psychsport.2020.101790.

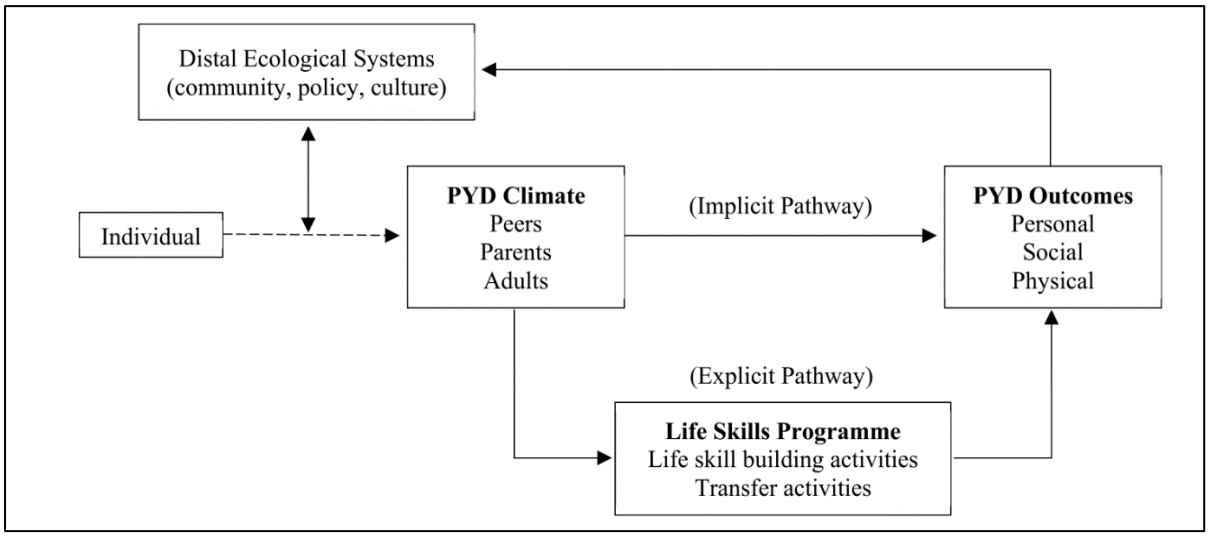

Figure 7: Model of PYD through sport. (Holt et al 2017[20])

The main components of this model are directly based on the results of "*the meta-data analysis of 63 articles, while some conceptual linkages are drawn from the broader PYD literature. The broader theoretical literature clearly and consistently highlights that social-ecological systems influence, and are influenced by, behavior (Lerner, Bowers, Geldhof, Gestsdóttir, & DeSouza, 2012). Sport programs are a microsystem (García Bengoechea, 2002), and interactions in this microsystem can be influenced by features of the broader macrosystems within which sport programs (and those who participate in sport programs) are located. Hence, the entire model is framed within the context of distal ecological systems[21]".*

3.3. Proposal of a conceptual model

The main objective of this article is the conceptualization of sport as a territorial ecosystem, clearly defining the roles and participation modalities of the different actors and stakeholders, in order to guaranty a consolidated social inclusion and a socio-professional integration creating sustainable territorial development through sport.. In this framework we propose an adaptation of Holt's PYD model with the Moroccan territorial and sport context in order to guarantee a territorial development through the creation of a sport ecosystem ensuring a positive youth development on a personnal, social and physical level.

Figure following on the next page

[20] Nicholas L. Holt, Kacey C. Neely, Linda G. Slater, Martin Camiré, Jean Côté, Jessica Fraser-Thomas, Dany MacDonald, Leisha Strachan & Katherine A. Tamminen (2017) A grounded theory of positive youth development through sport based on results from a qualitative meta-study, International Review of Sport and Exercise Psychology, 10:1, 1-49, DOI:10.1080/1750984X.2016.1180704

[21] Idem

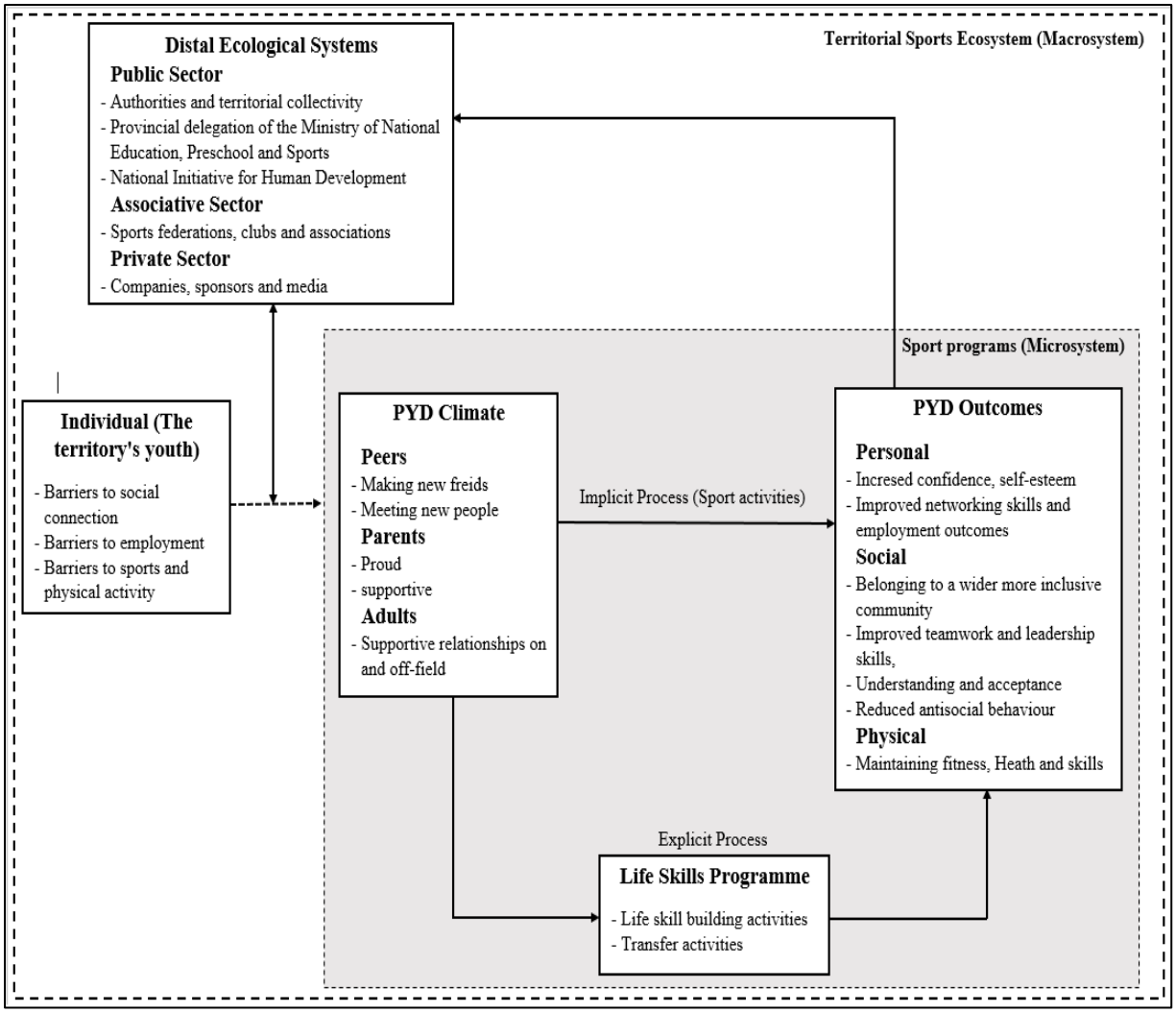

Figure 8: Territorial Sports Ecosystem model of youth social inclusion in Morocco[22]

Positive youth development climate referred to social contextual features within a sporting context. More specifically, Holt defined PYD climate as a "*social environment that enables youth to gain experiences that will contribute to PYD outcomes. The features of the PYD climate were adult (leader/coach) relationships, peer relationships, and parental involvement*[23]". Thee life skills programme refers to the specific activities and techniques desingned to promot life skills. "*A life skills focus involves providing opportunities to engage in life skill building activities and transfer activities*[24]". A series of outcomes were reported, classified in the personal, social and physical domains.

4. CONCLUSION

Our article will offer a detailed vision for the different stakeholders of a territorial sports ecosystem, through the identification of their representations and their perceptions, we will seek to empower them and propose decision support tools for these stakeholders in order to create socially responsible territories.

[22] created by us

[23] Nicholas L. Holt, Kacey C. Neely, Linda G. Slater, Martin Camiré, Jean Côté, Jessica Fraser-Thomas, Dany MacDonald, Leisha Strachan & Katherine A. Tamminen (2017) A grounded theory of positive youth development through sport based on results from a qualitative meta-study, International Review of Sport and Exercise Psychology, 10:1, 1-49, DOI:10.1080/1750984X.2016.1180704

[24] Idem

In addition, the complex and multidimensional nature of our research, as well as the lack of consensus on the perceptions attributed to both sport and social inclusion, leads us to choose a mixed methodological approach. Through this approach, it would be possible to contextualize and understand the opinions of Moroccan actors with respect to our theoretical findings. This methodological approach will also offer a vision of reality and will certainly identify measurement tools adapted to the Moroccan context, which is an important contribution, given the scarcity of scientific research in the field in Morocco.

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FACTORS INFLUENCING THE CRISIS MANAGEMENT PROCESS: LITERATURE REVIEW

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ABSTRACT

Research in crisis management and especially on a specific crisis management process has recently received great attention from academics and practitioners due to the transformation of working methods and their impacts on thought and managerial decisions, as well as the constant need to adapt to a changing environment characterized mainly by uncertainty as a factor of chaos, a complexity that hinders reaction and innovation, a vital element of survival. Therefore, the main objective of our study is to provide the current state of research on the crisis management process through a literature review. Our review helps to better understand and dissect the components of the crisis management process. Similarly, our research identifies organizational, strategic, environmental, and socio-psychological factors that influence the crisis management process and suggests avenues for future research.

Keywords: *Crisis Management, Crisis Management Process, Influencing Factors*

1. INTRODUCTION

Organizations face a rapidly changing environment with complex problems, difficulty in controlling information flows, and in managing various stakeholders (Straub and Jonkman, 2011). The Covid-19 crisis has disrupted the way we normally do things and primarily the way we work (Rudolph & Coll, 2020). To control this situation and to have an effective response, organizations must give importance to the concept of crisis management, which not only makes it possible to detect the signals of crises but also work on the design of measures and devices to protect the organization from a future crisis. The crisis management process can be considered a critical part of strategic management where potential threats should be identified (Gundall, 2005, Khodarahmi, 2009). It does not prevent the damage caused by the crisis, but it allows organizations to manage more effectively and minimize losses. (Mitroof, Pauchant, and Shrivastava, 1988, Shahin, Ulbeyli, and Kazaza,2015). The objective of this article is the presentation of a literature review, a synthesis that allows a better in-depth understanding of the crisis management process and its factors that influence it in a proactive approach, and also to provide leads for future research.

2. THEORETICAL FRAMEWORK

2.1. Crisis management

The word “crisis” comes from the Latin word Krisis which means judgment, choice, or decision, however, the use of the term varies depending on the context in which it is used and the discipline of the researcher (Preble,1997). In the managerial and organizational literature, a crisis is defined as a sudden and unexpected event that threatens to disrupt an organization’s operations and poses a risk to financial capacity and reputation (Coombs, 2015). An organizational crisis is a low probability event and has a high impact that threatens the viability of the organization and is characterized by ambiguity of causes, effects, and means of resolution, and by the understanding that decisions must be made quickly (Pearson et Clair, 1998). Fink (1986) suggests that planning for a crisis is the art of reducing risk and uncertainty that will allow you to better control your destiny. For him, the crisis can include up to four distinct stages: the prodromic phase of the crisis, the acute phase of the crisis, the chronic phase

of the crisis, and finally the phase of crisis resolution. Crisis management can be characterized by five approaches according to Sahin et al. (2015): the evasive approach, the resolute approach, the proactive approach, the reactive approach, and the interactive approach. According to the authors, the evasive approach seeks to anticipate a possible crisis quickly and to find solutions or procedures that could allow the organization to avoid a future crisis. In the solution approach, the crisis is seen as an opportunity that brings positive change to all the organization's activities. The proactive approach is characterized by procedures that provide timely and adequate information on the potential crisis and potential risks; create an early warning system; crisis plans and scenarios are developed; a crisis team is formed. A reactive approach is taken if an unexpected crisis strikes the organization. Measures are taken like reducing production or number of employees, loss of benefits, and leaving without pay. The last approach, that of interaction, is rather considered here as an evaluation approach of the previous stages. We can refer to organizational learning and responding to feedback from the crisis.

2.2. Crisis management theories

Theories of crisis management come from public relations, management, and the science of complexity. They include certain rhetorical theories such as the theory of reparation and the theory of apology.

2.2.1. Attribution theory

People will assign responsibility for events. In the event of a crisis, stakeholders will assign crisis responsibilities internally (organization) or externally (environmental factors). Logically, if stakeholders assign responsibility to organizations for crises, then they will have more negative images of the organization and vice versa. This theory is based on the public and tries to understand the factors of the crisis itself that shape the crisis attributions of the stakeholders.

2.2.2. Crisis situational communication theory

Proposed by Coombs and Holladay is an extension of attribution theory. The underlying idea behind the CSCT is that companies should respond strategically to a crisis based on an understanding of how the public assigns responsibility for the crisis. If the public perceives a crisis to be more intentional, it assigns more responsibility to an organization, and vice versa the CSCT is used to test different crisis response strategies. The CSCT is a public-oriented theory that is being developed.

2.2.3. Image restoration (repair theory)

This theory offers several crisis response strategies. This can range from "denial" to "evading responsibility" and "reducing aggression" and there are several options to choose from among these strategies. Developed by William Benoit, the basic concept of the theory states that an attack can threaten reputation (image). An offensive act or charge of responsibility is a threat to reputation, and the theory uses communication to defend its reputation.

2.2.4. Apology, Corporative apologia

Apologia and apology do not mean the same thing. Apologia is a communication strategy, it is more than an apology. By using Apologia, the organization clearly explains and tries to convince stakeholders that it is right. Apologia is a counter-description in which the person or organization defends itself from having created more favorable content to the allegations. Four strategies can be used when an organization is accused of doing something wrong. These are denial (not implicated in any wrong action), reinforcement (recalling the good things that have been done), differentiation (removing the action from its negative content), and transcendence (placing the action in a new and favorable context).

2.2.5. Contingency theory of conflict management

This theory attempts to explain the communication of an organization with its public groups and specifies the various factors that affect that communication. The concept of "position" implies how an organization responds to competition and conflict with other parties. Positions are on a continuum, and at some point in the continuum there is a defense of interests and at the other end, there is accommodation. The contingency theory applied to the crisis demonstrates the similarity between positions and strategies of response to the image repair crisis and the CSCT. Contingency theory offers other variables to consider, such as threat type and duration.

2.2.6. Complexity theory

Crisis response can be seen as a complex system (which is a subsystem of the organization) with blurred boundaries and diverse agents that come from several parts of the organization and serve one or more crisis response tasks: signal detection, prevention, damage control, recovery, learning and redesign (Mitroff, 2005). The system influences other organizational subsystems and the external environment and, in terms of complexity, when it evolves within its fitness landscape, it modifies the fitness landscape of other systems (Kauffman, 1995, pp. 215-224). Consistent with the description of what Mitleton-Kelly (2004) defines as a complex, co-developed system (CCES). With this in mind, crisis planning simply defines the rules for interactions between system agents, and the "screening environment" (Lewin & Volberda, 1999) in which its agents operate.

2.3. Crisis management process

Crisis management is the process with related steps and procedures that lead to the early prediction of a potential crisis, the identification (detection) of the nature of the crisis situation and the successful resolution in time, and last but not least, facilitating crisis prevention. It does not always avoid the crisis, but organizations can manage it much more effectively with minimal losses (Mitroff, Pauchant, and Shrivastava, 1988; Sahin, Ulubeyli and Kazaza, 2015). It is an ongoing process that begins with prevention by the company and ends with organizational learning (Mitroff, Pauchant, and Shrivastava, 1988; Shrivastava, 1988; Antušák, 2009; Zuzák and Konigová, 2009). With this, we can see the need for an ongoing process with the use of feedback for other solutions and preventive actions. A crisis management mechanism requires the incorporation of the interests of employees and stakeholders. According to Khodarahmi (2009), it is necessary to have clearly defined objectives, which are then modified to the strategic objectives. This fact must be duly justified, in particular, to preserve their trust and loyalty. Therefore, one of the key activities of crisis management is the clear definition of goals and objectives, especially in the crisis management phase. Crisis management intentions and procedures include the creation of programs or mechanisms that prevent a potential crisis, effectively manage losses and damages, and restore business performance (Shrivastava, Mitroff, Miller, & Miglani, 1988; Valackiene, 2011). A crisis management team that can respond effectively and flexibly to the situation plays an important role in crisis management. (Shrivastava and Mitroff, 1987; Pearson and Clair, 1998; King, 2002; Zuzak and König, 2009; Antusak, 2009; Sahin, Ulubeyli and Kazaza, 2015; Mikušová and Horvathova, 2019). Crisis management procedures and mechanisms must be integrated into the organization's overall strategy, which must be revitalized after each new crisis situation (Shrivastava and Mitroff, 1987; Preble, 1997; Spillan, 2000; Antušák, 2013; Crandall, Parnell and Spillan, 2013; Mikusova and Horvathova, 2019). Crisis management can be considered an important, often critical, part of strategic management in which potential threats should be identified (Gundel, 2005; Khodarahmi, 2009). In crisis management and strategy, we can see several common features, which include a coherent analysis of the environment, cooperation with stakeholders, and senior management activities.

Joint efforts lead to the creation of crisis scenarios and plans that can be considered both as a crisis management procedure and as a central element of the strategic planning process (Schoemaker, 1993).

3. METHODOLOGY

The efficient way to conduct this research is to use the Internet and databases. Therefore, Google Scholar was used to searching for references. Initially, the search keywords were "Management" and "Crisis". First, the following articles were analyzed by C. M. Pearson, J. A. Clair (1998), and "From crisis-prone to crisis prepared: A Framework for crisis management" by C. M. Pearson and I. I. Mitroff (1993). Second, after analyzing these references, other keywords such as "Factors" and "Process" were produced and refined. After the final keyword determination, the databases and citation indexes EBSCO, ProQuest Central, JSTOR, and Web of Science were used. These documentary sources have been studied to understand the various interactions of crisis management processes with other elements explored by researchers who have impacts on this process. A total of 115 sources were examined, but this set of 115 sources does not include all the sources that were used in this review of the factors influencing the crisis management process. Other sources, found through cross-references, were examined because of their influential role in the development of crisis management. The main reasons for excluding sources from the journal are duplicates, abstracts that are not relevant, topics with the field of study, irrelevant content, or articles that include only editorial notes. Some of these documentary sources focused on crisis management in general content and some of the proposed approaches to resolving the potential crisis. It was observed that many of these sources, while providing literature reviews on crisis management approaches, also provided empirical studies on proactive crisis management. These studies were also included in this research. The total number of eligible documents and other sources analyzed and synthesized was 71.

4. RESULTS

Research on the crisis management process is undertaken through different approaches by various authors. The following four concepts have been assigned to four main groups resulting from our analysis: 1) the role of environmental factors in the management process, 2) the role of strategic factors in the management process, 3) the role of organizational aspects in management processes and 4) the involvement of socio-psychological factors in crisis management processes. Each group constitutes sections that are the results of our analysis of all the references used.

4.1. Environmental factors

4.1.1. Technology

Technology provides several solutions in times of crisis, as well as allowing radical changes in the working structure of companies (platforms, dematerialization, coworking, etc.). In the context of a crisis, technology can generate innovative ideas to adapt not only to the situation but also to the generation of relevant information both internally and externally. Roles include: establishing situational awareness and a common operational image; establishing information and knowledge management systems; identifying assets (and their sources); tracking and monitoring assets (Human, Supplies, Materials); Managing Personal Identification Information; Automated Integrated Alert System; More robust and accurate system modeling; Standardizing information collection and reporting formats; coordinating action by multiple communities and stakeholders.

4.1.2. Social media

The growth of social media has transformed the landscape of crisis communication because it allows for greater interactivity. Yet, a crisis could also be catalyzed by social media because of its nature. This means that the crisis can be created through social media, as well as distributed through social media, respectively. Yet the potential of social media as a tool for crisis resolution is undeniable. He has the potential to prove a statement, dispel false rumors or simply show the fact. As a result, practitioners are encouraged to be familiar with how social media works and how to best manipulate it to communicate with their stakeholders.

4.1.3. Reputation

The needs to involve the public in crisis management. This can be done in several ways. One includes non-governmental organizations, opinion leaders, and members of the local community. Involving them in the crisis communication strategy to reach appropriate solutions ultimately leads to the absorption of public anger and to regain public trust. One way to regain public trust during or after the crisis is to respect the feelings of those affected by the crisis and recognize their rights to rehabilitate them and involve them in making appropriate decisions. A good reputation accelerates problems and conflicts resolution in times of crisis.

4.1.4. Regulation

Crisis managers should have a good understanding of the nature of local laws and regulations. Knowledge of the laws allows a rapid response to the changes caused by the crisis. In addition, the legal and legislative components are closely associated with the moral and value aspects of society, as those responsible for managing the crisis should be able to control the consequences. Changes in laws and regulations as devices and measures taken by governments in times of crisis can be both an opportunity and a threat to organizations. In addition, they will even improve the performance of the organization, its reputation, and its image, by committing to openness and transparency.

4.1.5. Professional entities

Many professional entities have provided guidance and regulations to improve operations and manage threats, risks, and crises. This includes several professional entities such as the International Federation of Accountants (IFAC), the International Accounting Standard Board (IASB), the Committee of Sponsoring Organizations (COSO), and the Basel Committee on Banking Supervision. These guides summarize all the good practices that organizations can apply to improve the establishment of crisis plans and their performance.

4.2. Strategic factors

4.2.1. Strategy

Several studies show that organizations with appropriate strategic planning are better equipped to manage a crisis. It has also been revealed that any crisis management style applied to a given disaster will determine whether the destruction will be a minor or major disaster. This means that the organization that uses a strategic approach to crisis management style will be proactive in crisis management. Through appropriate strategic planning, each organization at each point should be able to analyze and identify the type of crisis and its source to apply an appropriate crisis strategy tailored to a specific outcome. However, because of the variability of crises and the limitations of the ability of statistical tools to derive information, it is difficult to predict crises unless one is strategic and constantly updated.

4.2.2. Brand

In recent years, brand crises have become increasingly common in the global market. Since brand crises have many devastating effects, how to effectively manage them has become a hot topic among researchers and marketing practitioners. Brand crises are among a company's worst nightmares, causing short- and long-term negative effects, such as immediate loss of own-brand sales, reduced effectiveness of marketing instruments, and consumer confidence (Van Heerde et al., 2007; Xie and Peng, 2009). Even worse, brand crises can also affect the industry as a whole, or even undermine consumer confidence in society (Cleeren et al., 2013; Humphreys and Thompson, 2014).

4.2.3. Governance

Governance plays a crucial role in crisis management. Several previous studies deal with governance concerning crisis management. The majority of studies advocate the role of corporate governance in crisis management. It makes it possible to improve decision-making in times of crisis thanks to the complementarity of expertise by all stakeholders (board of directors, supervisory board, general management, experts, etc.). This is through mechanisms and the clear definition of roles and profiles of people.

4.2.4. Globalization

Managing a crisis in several countries introduces new complexities that create huge challenges for multinationals. What has worked for crisis management in the country of origin may not work well in other countries where the multinational has operations. Managers face competing values, operate in environments with unique media systems, and face reviews of previously unknown non-governmental organizations. How can the company communicate with its stakeholders to reduce the risk of a crisis? What third-party approvals should a company seek when delivering its message? Do these actions differ in the different countries where the crisis took place? Or are they similar?

4.2.5. Innovation

Crises lead to disadvantages such as budgetary constraints, which companies often react to by reducing their innovation activities. On the other hand, crises are opportunities, where some companies exploit the changing needs of the market. To counter negative disadvantages, companies can circumvent budgetary constraints by discerning patents that can be monetized, for example through sales or licensing agreements, or abandoned to save money, enabling companies to maintain their innovation activities.

4.3. Organizational factors

4.3.1. Communication

A communication plan and communication with employees are critical as they desperately need a real story of the crisis. Thus, any delay, misunderstanding, or silence would expose the organization to rumors and false news that aggravate and further complicate the crisis. The communication strategy must be built on honesty with employees and opinion leaders because it is the right way to restore the ravages of the crisis. The process of regaining trust during or after the crisis is the greatest challenge, and it is impossible to win it without the openness of expression and full transparency in the management of the crisis.

4.3.2. Organizational culture

Organizational leaders must manage the messages that stakeholders receive to provide a collective and consistent experience that makes sense during crises. Organizational cultures, as shared detection mechanisms, provide the framework for leaders to develop crisis management

messages. A plausible message must resonate in the shared experiences of members to shape and direct behaviors and actions during a crisis. The resulting messages must remain flexible to evolve as the crisis progresses.

4.3.3. Accounting information system

Several studies show that companies that have been most affected by the crisis tend to adopt more innovative tools in their accounting information systems and use them more widely than those that have been least affected. These tools such as the activity-based costing (ABC), Balanced Scorecard (BSC), Life Cycle Cost, Target Cost, and Economic Value Added (EVA) provide broader and better information to address the uncertainty created by the crisis. More information and better information are needed to reduce this uncertainty. For this reason, companies have adopted and tend to use these tools more intensively, as they provide better information for the internal and external environment of the company. As a result, the decision-making process is improved and management control becomes more effective.

4.3.4. Internal control

the effectiveness of internal control has a positive and significant impact on crisis management skills before and after the crisis, and it has increased the institutional crisis management skills. Internal control is an essential part of the day-to-day management of an organization. It ensures the effectiveness and efficiency of operations, budgetary accuracy, reliability and transparency of financial statements, and compliance with applicable laws and regulations (Güner, 2009). For Basel (1998), internal control is a procedure that affects the board of directors, senior management, and all levels of staff in an organization. Mayo & BPP (1988) postulate that the primary role of internal control is to protect resources from fraud and waste while ensuring transparency in financial reporting. Internal control emphasizes the achievement of the organization's objectives and mission.

4.3.5. Project management

The scale and pace of crises make project management even more complex so that efforts and decisions must integrate new technologies and methods, address rapidly changing infrastructures, and understand the risks involved (Schimak et al., 2020). In addition, each crisis is unique and unpredictable in socio-economic, political, and environmental contexts. For this reason, responders may find barriers to interpreting or responding to crises because they do not have enough information to ensure organizational agility in decision-making (Kroener et al., 2019). A crisis can affect the achievement of organizational objectives (Bannerman, 2008). Organizations must include external disruptions as a problem in project management, and reorganize in a way that does not change the scope and structure of their project.

4.4. Socio-psychological factors

4.4.1. Perceptions and attitudes

A notable model in the socio-psychological field, namely the theory of planned behavior (TPB), developed by Icek Ajzen in 1985, the TPB is today perhaps the most popular social-psychological model for predicting behavior. It can be presented as Behavioural Intent = Attitudes + Subjective Norms + Perceived Behavioural Control, we can add also past experiences. The person's attitude towards the behavior is the person's positive or negative assessment of the particular behavior of interest (Ajzen, 2005). The subjective standard is the perceived opinion of other important people who are close or important to a person and influence their decision-making (e.g., family, close friends, colleagues, or business partners). Perceived behavioral control assesses the perception of how one can control factors that may facilitate or restrict the actions necessary to cope with a particular situation.

Through this model, we can say that people intend to adopt a behavior when they evaluate it positively when they are under social pressure to do so, when they believe they have the means and the opportunity to do so and when they have already experienced crises.

4.4.2. Stress

In a stressful situation, the only objectives that will be taken into account are those related to the immediate present, to the sacrifice of longer-term considerations. As the crisis continues and the number of times decision-makers are under pressure to solve the problem increases, there will be significant changes in objectives. The greater the stress, the greater the tendency to make a premature choice of alternative solutions before adequate information is available for a correct answer. In a crisis, decision-makers are too eager to distinguish between alternative solutions. The greater the stress. the more limited the ability to estimate the range of possible consequences of a particular alternative solution, the more likely it is that a decision-maker will choose a risky alternative solution. There is a curvilinear relationship between stress and performance: does stress increase to moderate levels, performance improves; beyond moderate levels, stress leads to poor or incorrect alternatives. The greater the time pressure, the lower or incorrect the choice of alternatives.

4.4.3. Personal characteristics of the decision-maker

The more motivated people are to achieve a goal, the more likely they are to perceive it as a threat when potentially threatening stimuli are directed at it. There is a link between a decision-maker's experience and how they handle information about a decision. The more a decision-maker is willing to take risks, the less information they will use to make decisions and the faster they will make decisions. The more experience a decision-maker has in supervising a decision-maker, the faster he or she will make decisions. This trend is modified, however, by the increasing age of the decision-maker. The more dogmatic an individual is, the faster his decision-making becomes. People who use the goal-oriented mode to cope with anxiety make decisions more quickly under stress than before stress induction, while people who use the ego-based mode to cope with anxiety do not show such an increase. Decision-makers who see themselves as having control over their environment are less likely to choose riskier solutions. There is a relationship between several personality characteristics and the tendency to choose a risky alternative. The more personnel decisions a person makes in the past, the more accurate their decisions are. The more dogmatic a person is, the more accurate his decisions are. Individuals who are unable to overcome the interference of anxiety in the performance of the task make more errors in decision-making under stress than those who are not under duress, while those who overcome this interference show no change in the situation. The more dogmatic an individual is, the more confident he is in his decision after it has been made. The older a decision-maker is and the more supervisory experience they have, the less confidence they have in a decision they have made and the more willing they are to change their decision when faced with new and conflicting information. There is no difference between the effects of increasing success or failure on a person's tendency to choose risky solutions.

4.4.4. Interactive process

In a crisis, conflict within the decision-making group increases. In groups where there are conflicts over objectives, as opposed to groups where there is agreement on objectives, more information will be shared if a unanimous decision is required. If the decision is taken by a majority, the two groups do not differ much in the exchange of information. Groups experiencing significant conflict in crises are more likely to use creative alternatives than groups without conflict. Groups in conflict situations in crises display more effective execution of decision-making tasks than groups in low or no conflict situations.

The greater the group conflict caused by a crisis, the greater the consensus once the decision is taken. The longer the time available to make a decision, the greater the consensus on the final choice. In a crisis, the volume of communication to be handled by decision-makers is increasing. In the event of a crisis, the number of communication channels available to process incoming information decreases. The greater the communication burden in a crisis, the greater the tendency to resort to extraordinary and ad hoc communication channels. As the communication burden increases at higher levels, there is greater consultation within the organization before the decision- do, and there is a need for someone to function in the role of a display mechanism to facilitate the sharing of information. the organization will adopt various adjustment mechanisms to cope with the overload. In a crisis there is a greater need for effective leadership. In a crisis situation in situation, the distinction between operational and emotional leadership is clear. The effect of the type of leadership role on the performance of decision-making depends on the favorable nature of the decision-making situation.

4.4.5. Group decision-making performance

The crisis undermines the viability of an organization in carrying out its decision-making tasks. As the volume of information in a crisis increases. the search for information becomes less thorough and the selectivity of attention becomes more important. The higher the cost of the information, the less information will be collected. General information shared by the group rather than specific information available only to some members leads to better decisions. The more serious the different elements of a crisis, the fewer alternatives are considered. Stress at moderate levels reinforces the creativity of alternatives proposed by a decision-making group. The tendency to choose a risky alternative increases with continued participation in a decision-making task. As a load of information increases to an optimal point, the degree of integration of decisions increases and then decreases beyond that point. There is a curvilinear relationship between the defective content of feedback messages and the quality of decision-making

5. CONCLUSION

The purpose of this article was to provide an overview of the current state of research on the topic of crisis management and its process by conducting a literature review. It presents four dimensions derived from the comparison of factors generated based on the results of the reference review: organizational factors, environmental factors, strategic factors, and socio-psychological factors. These four dimensions are essential for the future orientation of this field of research. In addition, this dimensioning allows a better understanding of company managers since the crisis management process poses relevant management challenges. It is essential to overcome these challenges, otherwise, the business management process would be less effective, and the company will not be able to successfully withstand crises. These four dimensions have been developed taking into account the main phases of the process, namely the pre-crisis phase, the defense or resilience phase, and the post-crisis phase. This perception is derived from the results obtained by the analysis of this review, the first group of factors puts the crisis management process in its context of evolution and the stakes of its environment that must face them, which form the basis of knowledge about the external variables influencing the process. The second group takes into account the elements of the organization's strategy, through which the crisis management process can benefit as key success factors or distinctive skills. In addition, the second group also indicates the influence of the crisis on these elements and mainly the brand that reflects the strategic positioning of the organization and how they should be taken into account in the process and the organizational structure. The third group covers organization aspects related to the crisis management process. This dimension clearly shows that organizational factors are at the heart of every crisis process and that they are essential to its success as a business.

The third group is an in-depth study of the CMP. In this regard, our literature review shows that researchers who have recently published articles on this area of research are focusing more on CMP, whereas in previous publications, Only a few researchers have acknowledged that the form of CMP is taken into account in their theories. The second dimension assessed relates to strategic factors. In this dimension, we have tried to give a better understanding and a more detailed overview of the influential factors reflected in the first group, including strategy, brand, governance, globalization, and innovation. While past research has focused more on approaches and especially on the reactive approach, focusing on the resilience and adaptation of operational elements and their influence on crisis management, today's publications have already explored this coherence and have even so far developed a new approach of the CMP, namely the proactive CMP. In this regard, the proactive CMP has recently received its attention. This approach has become crucial in today's companies as progressively more companies must take into account environmental changes and challenges in their actions and business decisions in their pre-crisis phase. In addition to improving proactivity, new technologies have also received his attention as they could lead the company in a whole new direction with its CMP. The company may need to develop a completely new CMP based on external changes an organization may be facing. Finally, the fourth dimension reflects socio-psychological factors. This dimension is only considered in the fourth group and has therefore evolved from our literature review. Although socio-psychological factors are nothing new or anything that has evolved, it is surprising that previous research has not taken these factors into account in their analysis. For this reason, it is even more important to mention that socio-psychological factors such as social transformation and changes in attitudes and behaviors also influence the company's CMP.

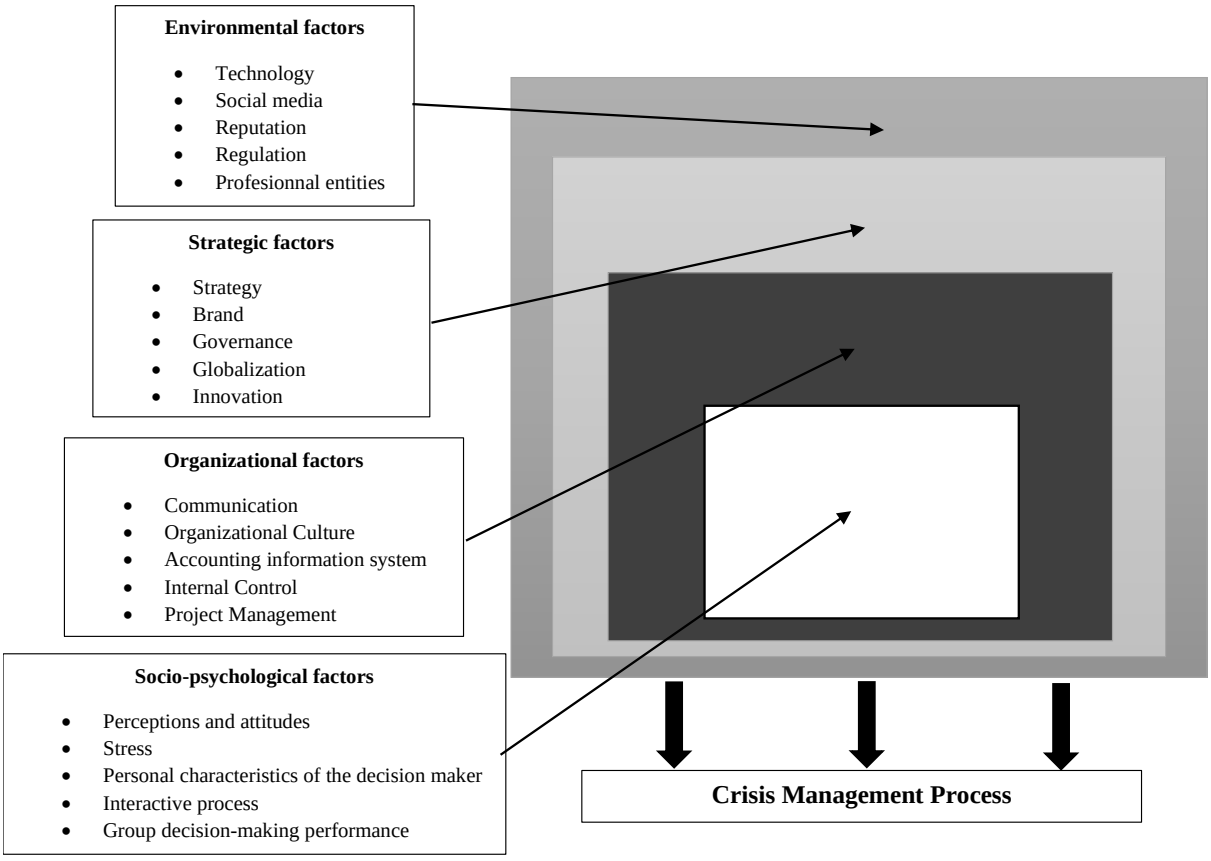

Figure: Factors influencing the crisis management process
(Source: Author`s processing)

As with any study, ours also has several limitations. For example, our literature review focuses on articles from the WoS database, which limits results as other databases may display other results. Future research may therefore want to double-check our results using, for example, EBSCO or Scopus as alternatives. Thus, the literature review also set another restriction, according to which only articles published between 2018 and 2021 were taken into account. This restriction has made the results quite up-to-date and up-to-date but also implies that publications that could be cited more often and could give a more in-depth understanding of the subject had been omitted. In addition, grouping articles into different categories is rather the subjective opinion of the author and then an objective and valuable approach. For this reason, any other author could interpret the results differently and come to another point of view.

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MITIGATING DEMAND AMPLIFICATION FOR AN EFFICIENT SUPPLY CHAIN

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ABSTRACT

In a world in perpetual transformation, accentuated by the pandemic during the last two years, companies are seeing the scope of the new challenges. Faced with these new threats, companies are rethinking their strategy in order to ensure good management and continuity of the flow of goods. The recognition by all actors of the implications linked to flow management enables to improve the long-term performance of each member company and of the whole supply chain. Thus, the best chains reach a higher level of maturity and are interested in more optimization. As there are several areas for improvement, we are interested in a phenomenon that is little known to many decision makers and which cannot be noticed without coordination and collaboration between the members of the chain, namely the Bullwhip Effect. The Bullwhip Effect also called Demand Amplification or Variance Amplification, refers to the tendency for order variance to increase as you move up the demand side of the supply chain. Otherwise, this term describes the effect by which slowly changing consumer demand creates large variations in production for suppliers at the other end of the chain. It has been shown that a 10% increase in demand at the retail level turns into a 40% increase at the manufacturer level. The existence of this effect is attributed to operational and behavioral factors and the solutions to counter it are grouped according to the causes. The importance of considering this phenomenon is demonstrated through the creation of a behavioral experience mimicking decision-making behavior in supply chains. The results of this simulation are used to quantify losses, analyze and identify best practices that will lead to a reduction in demand amplification. In this sense, based on a literature review, we will present the contributions of the major authors in this field of supply chain management. Thus, this study aims to identify the main causes, consequences and solutions that will lead to a significant reduction of oscillations and order amplification. Finally, we will present steps and rules of the simulation to understand the experimental research.

Keywords: *Bullwhip Effect, Demand Amplification, Experimental Research, Optimization, Supply Chain Management*

1. INTRODUCTION

In a competitive market and unstable environment marked by the pandemic, companies are seeing an unusual change in the world with a significant increase of new challenges. Indeed, since the 1990s, the world has entered a new phase, the globalization, where countries are becoming dependent on each other. This global integration has allowed companies to cross borders and open up new, more profitable markets. The advantages were invaluable. However, few companies were interested in the inconveniences. At the beginning of 2020, countries all over the world notice the considerable impact of the reverse effect of this global opening. A huge loss due to the pandemic on the one side and to the complexity of the relations between

countries on the other side, which led to a slowdown or a complete interruption of production and trade. Faced with these new threats, companies are rethinking their strategy to ensure proper management and continuity of goods flows from the raw material to the delivery of the customer. Noting that effective supply chain management is only possible through a systemic and strategic coordination and collaboration of all logistics management activities and manufacturing operations within the enterprise and between other chain partners (suppliers, intermediaries, customers...), with the objective of creating a coherent business model and improving the long-term performance of the entire chain (Mentzer et al., 2001) (CSCMP, 2013, p.187). Consequently, the objective for each decision maker is to combine the three key criteria of cost, time and quality. Coordination and collaboration are the result of a long process between the partners in the chain. The recognition by all the actors of the implications linked to the management of flows indicates that there is a supply chain management. One of the most important obligations for the success of a good synchronization is the respect of the deadlines. This criterion is at the center of the managers' reflections in order to satisfy the customer's demand. However, the best chains are reaching a higher level of maturity. The satisfaction of requests is no longer the only performance indicator, but the optimization of the chain is also added to it. Optimization not only improves performance but also adds a source of productivity and efficiency gains for the companies involved. There are several areas for optimization. However, few decision-makers notice a phenomenon that cannot be noticed without collaboration between the members of the chain. This phenomenon is commonly observed in almost all industries with a different degree (Table 1). It was discovered by researchers since the 1960s but known by few professionals, namely the Bullwhip Effect.

Computer consumables	Automotive component	Washing powder	Fresh orange juice
3,67%	6,1%	3.65%	30,4%

Table 1: Empirical evidence of the existence of demand amplification (Source: Wang and Disney, 2016)

2. BACKGROUND

Supply chain management is a major performance factor for the company and its partners. A lack of coordination and collaboration between partners can cause significant losses. In this sense, the demand amplification known as Bullwhip Effect, is one of the most important problems encountered and which must be resolved. This chapter aims to present the definition of the term and its origin, then the causes and consequences of this phenomenon.

2.1. Brief history of bullwhip effect

The Bullwhip Effect, also named Demand Amplification or Variance Amplification, refers to the tendency for order variance to increase as you move up the demand side of the supply chain. Otherwise, this term describes the effect by which slowly changing consumer demand creates large variations in production for suppliers at the other end of the chain. It was first discovered and studied by the great researcher Forrester, who showed that a 10% increase in demand at the retail level turned into a 40% increase at the manufacturer level (Forrester, 1961). Subsequently, he set up a simulation experiment mimicking the decision-making behavior in supply chains, the famous "Beer Game". It was only in the early 1980s that (Schisgall, 1981) documented this amplification between Procter & Gamble and its suppliers by calling it the "Bullwhip effect". Following an analysis of this phenomenon, (Sterman, 1989) (Croson and Donohue, 2005) attributed the amplification to the "irrational behavior" of decision makers who tend not to fully consider their supply chain and distrust the performance of other members. (Lee et al., 1997)

(Lin et al., 2017) suggest additional causes to the problem where actors are assumed to behave in a completely rational manner (Table 2).

Authors		Research
1961	Forrester	• Formulation of the demand amplification variability by the "industrial dynamics" approach • Implementation of a simulation experience, the 'Beer Game'
1981	Schisgall	• Documentation of the demand amplification between Procter & Gamble and its suppliers by calling it 'Bullwhip effect'
1989	Sterman	• Attributing amplification to "irrational behavior" of decision makers
1997	Lee et al.	• Proposition of four additional causes where it is assumed that the actors behave in a completely rational way

Table 2: History of research on bullwhip effect

To understand this phenomenon, John Mentzer illustrated this problem with the following example: Imagine a traditional retail supply chain. We have a retailer who serves the end-use vendor and a supplier who provides the raw materials to the manufacturer. The retailer has a fairly good forecasting process and forecasts end customer demand at 1000 units for the planning period. Since forecasts have typically been off by +/- 10%, the retailer orders 1100 units from the wholesaler, or 100 units for safety stock. Similarly, the wholesaler orders 1100 units plus 10% (or 1210 units) from the manufacturer. Similar assumptions are made throughout the supply chain. Thus, starting from a possible increase in final demand of +10%, the manufacturer considers a variation of +33% and the supplier of +46%. The whip-like curve pattern is characteristic of the evolution of demand in the supply chain as one moves away from the consumer (Figure 1).

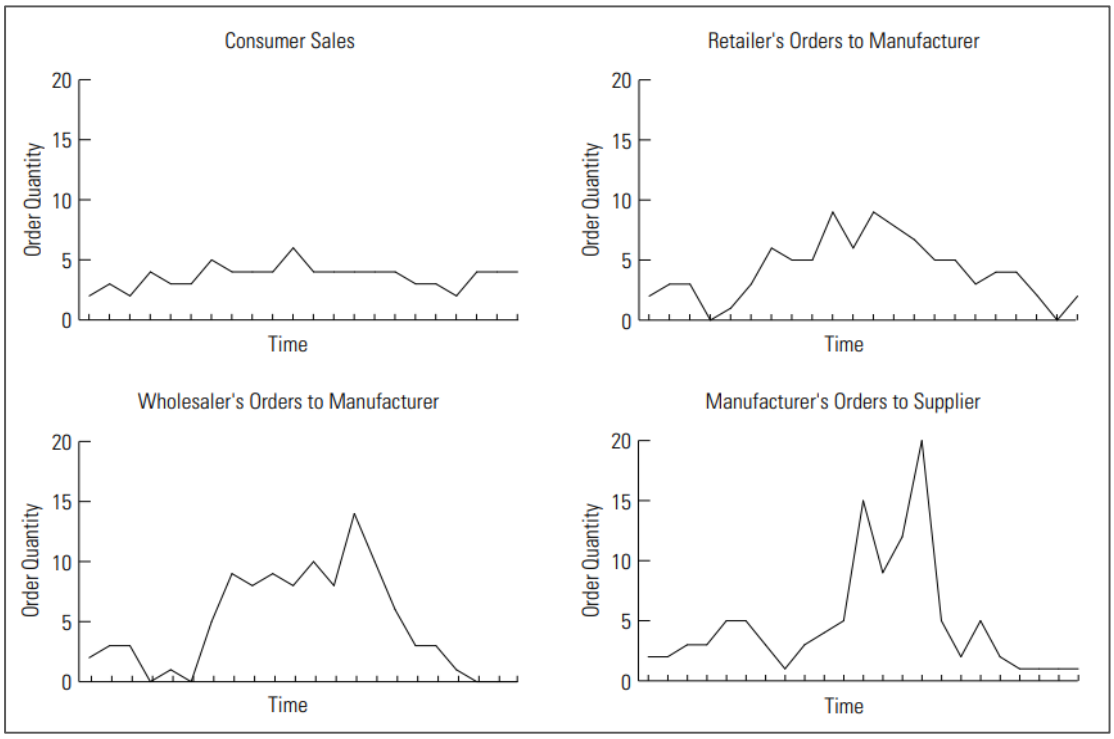

Figure 1: Amplification demand from consumer to the supplier
(Source: Lee et al., 1997)

(Wang and Disney, 2016) contributed to the understanding of the bullwhip effect through a literature review including the history, experimental and empirical research plus the modeling elements of the bullwhip effect namely: demand, forecasting, lead time, ordering policy and information sharing.

2.2. Causes and consequences of bullwhip effect

The reduction of demand amplification in the supply chain is only possible by studying and analyzing one or all of the operational and behavioral factors (Figure 2). On the one hand, (Lee et al., 1997) (Lin et al., 2017) cite the main operational causes:

- Firstly, the updating of demand forecasts and the error in demand reporting increases the time between replenishment and generates a larger safety stock.
- Secondly, batch ordering contributes to the amplification when companies are faced with periodic requests from customers.
- Thirdly, the price fluctuation due to forward purchases. Indeed, when the price of a product is low (discounts, promotions...), customers buy a larger quantity and once the price returns to normal, customers stop buying until their stock is exhausted. This change is more important than the change in the consumption rate.
- Fourthly, the anticipation of shortage situations, which generates fictitious orders. If the total supply is only 50% of the total demand, all customers receive 50% of what they order and to get more products, customers exaggerate their real needs.

On the other hand, the behavioral factor is mainly (Sterman, 1989) (Croson and Donohue, 2005):

- The cognitive limitation of decision makers who tend not to fully consider the supply chain, distrust the performance of other members of the chain, and over- or under-react to changes in demand.

The list is not exhaustive, other factors can also be added, such as the independence of the authors and lack of knowledge of the final demand, purely local optimization rules, induced effect of supply constraints of upstream stages and number of stages in the chain.

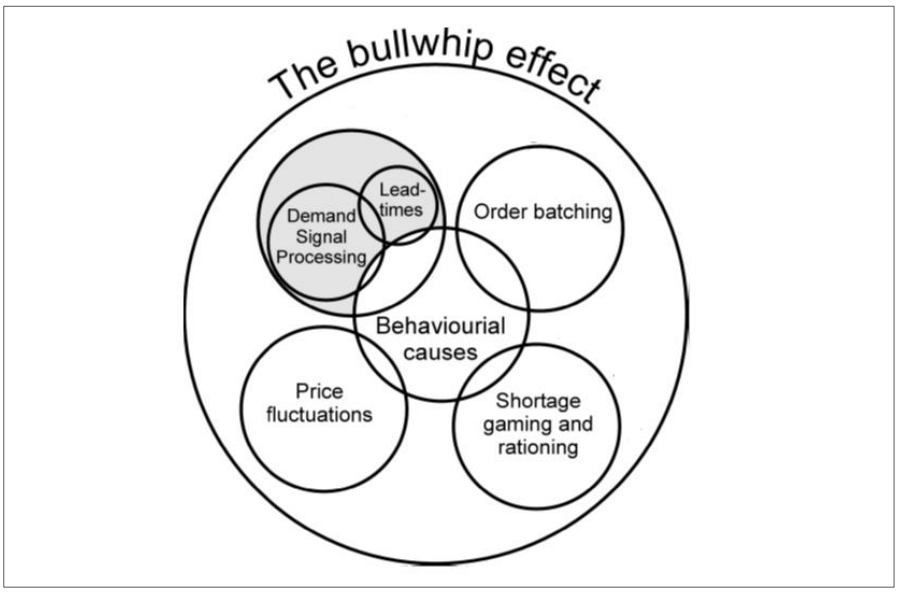

Figure 2: Main causes of bullwhip effect
(Source: Disney and Lambrecht, 2005)

The different methods used to measure the impact of demand amplification have the same ultimate objective, to quantify the loss of revenue by companies and the costs associated with this phenomenon. In this sense, the consequences of the demand amplification on supply chain costs are considerable (Disney and Lambrecht, 2005):

1) Companies must invest in additional capacity to meet the highly variable demand;
2) This capacity is then underutilized when demand drops;
3) Unit labor costs increase during periods of low demand;
4) Highly variable demand increases the need for safety stocks in the supply chain;
5) Companies may decide to produce to stockpile in times of low demand. If this is not managed properly, it will lead to excessive obsolescence;
6) The variable demand also increases the delivery time, it increases the stock and the number of items.

3. REMEDIES AND EXPERIMENTAL RESEARCH

There are several solutions to counter the bullwhip effect. Research has shown that each remedy can play an essential role in countering it. These solutions can be tested with a simulation game. The experience mimics the mechanisms of a decentralized, periodically reviewed supply chain. Thus, the objective of this chapter is to present the solutions that lead to a reduction of the demand amplification. Then, an overview of the simulation "Beer Distribution Game".

3.1. Solutions to counter the bullwhip effect

Among the solutions proposed by researchers to reduce demand amplification in the supply chain, (Lee et al., 1997) (Disney and Lambrecht, 2005) cite the following remedies:

- For demand signal processing, it is possible to design replenishment rules that have a stabilizing and smoothing effect on orders. Centralize control (e.g. Vendor-Managed Inventory (VMI)). Using point of sale data (POS), Electronic Data Interchange (EDI) and also reduce transfer times.
- The second cause, batch ordering can be minimized by reducing set-up, ordering, and handling costs. (Potter and Disney, 2006) also showed that setting the lot size so that multiples of the lot quantity match the average demand results in a reduction of the Bullwhip Effect. Other solutions can be the reduction of the truck assortment, consolidation or outsourcing of logistics.
- The third major cause is price fluctuations. Pricing strategies (ranging from major promotions to everyday low prices) must be clearly linked to procurement and replenishment policies or using Everyday Low Cost (EDLC). The Continuous Replenishment Program (CRP) can also be beneficial.
- The fourth cause is related to rationing and shortage games. A very simple solution is to allocate products in proportion to sales in previous periods rather than allocating them according to what has been ordered. Furthermore, sharing sales, capacity and inventory data are additional options.
- Another cause of this phenomenon is the lead-time, which is composed of physical and information delays, can be reduced through better communication technologies and investments in production technologies, strategic partnerships with suppliers or by eliminating intermediaries.

The behavioral factor, namely, the cognitive limit of decision makers, can be resolved by (Pimor and Fender, 2008):

- The development of a collaborative process, both internal and external. The objective is to share information to build trust between actors and increase the transparency of this

information. The implementation of a control tower that centralizes information and acts as a flow driver for the entire supply chain. 4PL (Fourth Party Logistics) type solution.

Other solutions can be added like a dashboard gathering all the necessary information (data from the points of sale, information on stocks and demand, etc.) provides a global vision of the chain. The centralization of supply chain orders and accelerate the interoperations and reduction of their number.

3.2. Experimental research

Experimental research contributes to the understanding and analysis of the bullwhip effect (Yang et al., 2021). (Sterman, 1989) documented the role-playing game for inventory management called the 'Beer Game'. The Beer Game chain operates as a multi-level, real-time system with delayed demand, infinite capacity, processing and shipping times. Researchers can test hypotheses by systematically manipulating training and communication protocols. The basic idea of the Beer Game is to carry out a simulation by observing the way each participant will operate according to his perception of the demand. Early experiments of the beer distribution game used a board that represented the production and distribution of the product. The facilitator transfers weekly orders from a deck of cards and participants manage their inventory and place orders that are represented by markers and pennies. However, as technology has evolved, researchers have begun to use a computer network where each participant works on a separate computer. This approach allows more rigorous control and creates a suitable environment with specific parameters. Therefore, to start the simulation, we define a supply chain with four stages: the retailer, the wholesaler, the distributor and the manufacturer. A participant represents each of the steps by placing orders at the top level and by delivering the orders of the lower level. To understand the steps of the experiment, we rely on the explanation proposed by the authors (Pimor and Fender, 2008). The game consists in observing the way in which each stage will operate according to its perception of the demand, then we will measure the consequences of its replenishment policy on its stocks and the way it satisfies the demand of its customers. Each order takes two weeks to process at the top level and two weeks to deliver (Figure 3). The retailer immediately delivers the weekly orders of its customers represented by a series of consumption. Each week, he discovers the final consumption, satisfies it from his stock and places the order taking into account the remaining stock. He then enters in stock what sends him the wholesaler for the following week on the order placed 4 weeks earlier. The wholesaler fulfills as best as possible the order placed by the retailer two weeks earlier and possibly what he could not deliver. Thus, it is the same for the distributor in relation to the downstream wholesaler and the upstream manufacturer. Each of the partners must minimize the costs of the supply chain, costs represented for each of them for: 1$ of penalty for each not delivered box and 0.5$ for each box in stock for one week. The decision to order for each actor in the chain is the single decision variable and the focus on the analysis of the multi-periodic experience.

Figure following on the next page

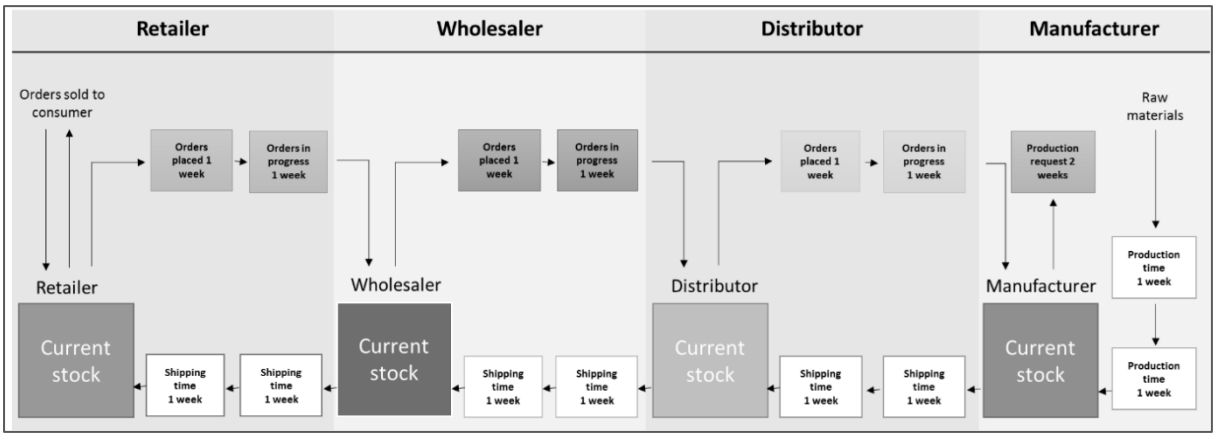

Figure 3: Beer Distribution Game
(Source: Sterman, 1989)

As noted by (Croson and Donohue, 2005)**,** this experimental framework controls the four operational causes of the bullwhip effect.

- No order batching: Implementation has no fixed costs for ordering.
- No shortage gaming and rationing: Manufacturer has no capacity constraints.
- No price fluctuations: Price is fixed at $2 throughout the game.
- No demand signaling errors: Consumer demand is known through its announcement at the beginning of the game.

Controlling these operational factors allows the analysis to focus on behavioral impact. The main dependent measure is the variance of orders placed by the participant. Comparing these variances for different positions in the supply chain leads to the conclusion that the bullwhip effect exists if members at a higher level have larger variances.

4. CONCLUSION

The reduction of the bullwhip effect implies a higher performance of each member company of the whole supply chain. Without taking into account, companies are investing in additional capacities and working longer. Even more, in the retail stores, customers are faced with empty shelves of popular products and those that do not sell are full. Paradoxically, foregoing all safety stock eliminates the demand amplification and improves the service rate. However, to systematically order the same quantity for each order at each level requires many factors. The solutions listed above are not exhaustive. The research in this field continues to grow, the application of the results has emerged in various companies and the results have demonstrated a remarkable performance of supply chains that are interested in mitigating the demand amplification in the supply chain.

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THE INFLUENCE OF SOCIAL INNOVATION ON THE DEVELOPMENT OF HUMAN CAPITAL WITHIN ORGANIZATIONS OF THE SOCIAL AND SOLIDARITY ECONOMY (SSE): LITERATURE REVIEW AND ESSAY OF PROPOSAL OF A CONCEPTUAL FRAMEWORK

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ABSTRACT
Today, the role of human capital as a key factor in business success is well established. Companies are constantly seeking to improve their managerial practices in order to increase their organizational performance, of which social innovation is of paramount importance. Innovation has long been an essential tool in growth and job creation strategies. The originality of this paper lies in the fact that it offers a conceptual framework for reflection and analysis aimed at understanding the extent to which the development of human capital depends of social innovation through the implementation of a real approach to social innovation aimed at defining human capital which will serve to better guide and professionalize the activities and the place of social innovation in the companies of the social and solidarity economy (SSE), and above all to highlight the contribution of social innovation to the development of human capital through a conceptual framework of the practice of the latter of said companies.
Keywords: *human capital, performance, social innovation*

1. INTRODUCTION

The concept of innovation is at the heart of economic dynamics, as a source of increased productivity (Smith), as the origin of consequences on wages and employment (Ricardo). Many research works attempt to conceptualize the notion of social innovation according to different fields of research. The purpose of this article and to shed light on this new concept. In a context of social tensions, is "social" innovation a different concept from innovation and if so, what dynamics does it fall under to influence the development of human capital in organizations of the social and solidarity economy (SSE)? To address this problem, we have structured our work in two parts. In the first part, we will discuss the theoretical framework of the different fields of our research, namely the main theories and reference models of research. The second part will be devoted to the presentation of the conceptual model of this research through the analysis and discussion of the hypotheses and variables of the research. In conclusion, we will outline some challenges facing research and suggest some avenues for future work.

2. SOCIAL INNOVATION AND DEVELOPMENT OF HUMAN CAPITAL WITHIN SOCIAL AND SOLIDARITY ECONOMY ORGANIZATIONS: LITERATURE ANALYSIS AND THEORETICAL FRAMEWORK

This first part will focus on first highlighting the concept of innovation and social innovation, human capital and the social and solidarity economy thro ugh an attempt at definition, then a

vision on the major theories and the main reference models of research, closing this part with the managerial purposes of the social and solidarity economy.

2.1. The concepts: innovation / social innovation

Before venturing into the study of such a widespread concept of "social innovation", it is necessary to define its contours. The term “innovate” is defined in the Larousse as “Introducing something new to replace something old in any field”, and in the Petit Robert as “creating something new”; therefore its definition varies according to the points of view, according to the context in which it is used. Furthermore, social innovation continues to call upon multiple definitions. A majority agrees that it develops new responses to poorly or poorly met social needs in all sectors: food, mobility, energy, housing, environment, health, etc. Supported by different actors, social innovation brings effective solutions to complex issues that neither the State nor the market can respond to alone. While social progress has long been attributed to technical progress, this dogma seems to be wavering today and giving way to other paths of progress. According to Durance (2011), “the myth of continuous progress linked to technical change is therefore partially broken. It is therefore no coincidence that the theme of social innovation takes an increasingly significant place in the concerns of organizations, both public and private.

2.1.1. Human Capital

According to Becker (1964), one can distinguish between general human capital and specific human capital. Specific human capital refers to skills, experience and knowledge that are useful only to a single employer or industry, while general human capital is freely transferable because it is useful to multiple employers. According to Williamson (1975), the main reason why the value of specific human capital is lost when the employer changes, is that it consists of skills, experience and knowledge. For Becker (1962) and Williamson (1975) skills depend on the duration of the transaction relationship because they are acquired through continuous learning by doing.

2.1.2. The social and solidarity economy: The social purpose and the reason for being social enterprises

The concept of SSE2 varies from country to country depending on the historical context. Thus, on a practical level, attempts at cooperation and mutualism have taken place almost everywhere over the centuries. If the first initiatives which succeeded in setting up cooperative and mutualist structures refer to the "Fair Trade Pioneers of Rochdale" in England "Friedrich Wilhelm Raiffeisen" in Germany in 1847, it was only with the effects of the welfare state and mixed economy system during the last quarter of the 20th century that some European countries showed interest in typical social economy organisations, such as cooperatives and mutuals, or organizations non-commercial, such as the majority of associations and foundations. The multiplication of these forms. The multiplication of these forms of organizations has gained ground and has distinguished itself in the face of the various crises throughout history, marking a gaining interest within the international community, and facilitating the emergence and structuring of a new parallel sector.

2.1.3. The specificities of the social and solidarity economy:

By combining social purpose and economic activity, social enterprises include at the very heart of their operation a significant tension between the social (or societal) objectives they pursue and their economic imperatives (multiplicity of objectives) [Alter, 2006]. In addition, the political decision-making process must seek to engage and involve the various stakeholders to legitimize the societal purpose of the structure.

The incarnation of a shared project requires the common definition of operational methods, while the stakes of the stakeholders are often divergent. Finally, social enterprises. IS3 is a concept that is attracting more and more attention from academics, politicians, economists, international organizations... However, its definition is not unanimous among these actors (MONTGOMERY, 2016). For example, for some, it is a tool for modernizing public social policies, for others, it is a question of reconciling the economic and the social and combining them for a defined social mission (PHILLIPS et al. 2015) . For RICHEZ-BATTESTI (2011), technological innovation remains dominant, organizational innovation is gaining notoriety, but IS is still unclear. In this perspective, several experiences have been adopted by several countries. In, the social purpose of a social enterprise is manifested in the achievement of a service mission to its members or to the community relating to societal issues (culture, ecology, social action). Production activities allow companies to achieve their social purpose, profit maximization is not the main goal but it will be essential for the continuity of the economic activity of social enterprises. "They have a dual objective: to meet societal needs, on the one hand, but also to conduct a profitable and sustainable economic activity, on the other hand".4
The raison d'être of social enterprises is represented by their productive activities: production of collective services (social integration enterprises, medical centres), production of trust goods (fair trade), cooperatives, which must be valued above all by members of the social organization in order to understand the contribution and meaning of their work.

2.1.4. The main theories and reference models of research

The theoretical field makes it possible to expose the theories and models mobilized in order to respond to the problem of acceptance and impact in the field of social innovation. The theoretical foundation of the research revolves around two works. The first uses theories and models of acceptance of social innovation; the second to models testing the impact of social innovation on the development of human capital and the last. In this context, the theoretical framework mobilizes impact models of social innovation based on the theory of the diffusion of innovation (Rogers 1995) and a study by Moore and benbasat (1991) with some modifications of the diffusion of innovation. Rogers' innovation, they added the concept of image which refers to the degree to which the use of the innovation improves the social status of the individual who studies the satisfaction and the impact of the innovation on the human capital development. C. Models or theories of acceptance of social innovation Many theoretical models, having been developed to explain and predict the behavior of individuals faced with the use of social innovation among these theories and models, we cite: Theory Diffusion of Innovation (TDI), Theory of Reasoned Action (TAR).

- **Diffusion of Innovation Theory (TDI):**
  On sociological grounds, TDI (Rogers 1995) has been used from agricultural to organizational innovation. Moore and Benbasat (1995) then tested their model and they added to Rogers' model the concept of image which improves the concept of the social status of the individual.

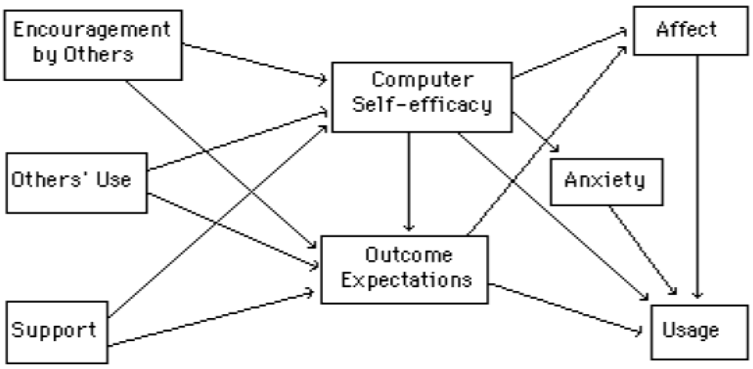
- **Theory of reasoned action (TAR):**
  The two basic factors used in TAR are defined as follows: Self-interest refers to an attitude that leads a user to evaluate, favorably or unfavorably, the adoption of an IT. On the other hand, social influence, considered as a subjective norm, refers to the perception that individuals have of what others expect of them, and to their degree of motivation to conform to these expectations.

2.1.5. Theories of the impact of SI on the development of human capital

Several theoretical models, mainly developed in psychology and sociology (Venkatesh et al. 2003), are used to explain the impact of SI on the development of human capital. These models aim to identify certain determinants of intentions that make it possible to explain and predict the behavior of individuals with regard to the use of the innovation (Davis, 1989). Among the models used, we cite the model linked to: Socio-cognitive theory (TSC), Motivational model (MM).

- **Socio-cognitive theory (TSC)**
  One of the influential theories of human behavior, the original model of Compeau and Higgins, (1995) incorporates use as the dependent variable while retaining the predictive spirit of individual acceptance.

Figure 1: socio-cognitive theory



Source: Compeau et Higgins 1995

- **Motivational Model (MM)**
  A stream of research in psychology has supported the general theory of motivation davis et al (1997) applied motivational theory to understand the adoption of new technologies.

This model interprets self-determined and non-self-determined behaviors through three categories of motivation:

- intrinsic motivation which is based on interest, pleasure and satisfaction.
- extrinsic motivation which includes four types of regulation (integrated, identified, introjected, external)
- a motivation, i.e. the absence of controlling intentionality.

3. THE CONCEPTUAL FRAMEWORK OF THE RESEARCH: THE PROBLEM, THE METHODOLOGY, THE CONCEPTUAL MODEL AND THE ASSUMPTIONS AND VARIABLES, THE APPROACH

This part mobilizes the conceptual framework of this research through a vision of the problem, the methodology, the conceptual model.

3.1. Issue & Research Questions

The issue of this research has been widely discussed in professional journals specializing in social innovation, insofar as social innovation constitutes the major challenge for Moroccan social and solidarity economy organizations and that these organizations must master all of them. aspects to ensure the success of their activities, and hence to be competitive;

In view of the context described above, our problem can be summed up in the following question:

- How to bring Moroccan SSE organizations to make social innovation a lever to develop their human capital?

From this central issue will arise other questions that we will strive to answer throughout our immersion in our analysis:

- What is the place of social innovation in the strategy of SSE organizations?
- How to organize the SSE organization to promote social innovation with a view to developing human capital?
- what is the impact of beliefs on social innovation?
- How to generate value from a social innovation?
- What are the main obstacles to social innovation?

3.2. Research methodology: epistemological positioning

As Bourdieu (1987) points out, epistemological reflection, in that it invites us to clarify the presuppositions and justify the choices made at these different stages, is also a powerful tool for research innovation by making it possible to go beyond the simple search for coherence between the analysis and the objects of this analysis. In the context of this thesis, we have opted for this third type of positioning and, more precisely, for an arranged positivist positioning. Indeed, we will first carry out an analysis of the literature relating to the thesis concepts (Social innovation and development of human capital within organizations of the social and solidarity economy) and the reference models mobilized in order to propose to At the end of this analysis, a conceptual framework allowing us to answer our problem. Therefore, this research is part of a hypothetico-deductive approach whose choice is justified by the objectives we have set: to explore, describe and verify. However, we will use a qualitative exploratory study to refine and verify the relevance of our research model. This mode of thinking consists of discovering regularities from the observation of the object and then formulating hypotheses from an inductive perspective.

3.3. Exploratory Qualitative Research: Objectives of the Qualitative Study

The qualitative study has a dual function: confirmatory and exploratory. It is confirmatory since it will make it possible to verify the accuracy of the elements resulting from the literature review. Indeed, this confirmatory dimension aims to ensure that the main concepts mentioned in the literature are found in the discourse of the interviewees. It is also exploratory since it will enrich the results of the literature review. It is true that the main vocation of a qualitative study is the production of new information and to highlight and understand the motivations and behaviors of individuals. These two dimensions, confirmatory and exploratory of the qualitative study will also be used to generate the items of our measurement scales. In summary, this qualitative phase is used on the one hand in a sequential perspective where it precedes the quantitative phase offering a better understanding of the subject of research and the proposal of research hypotheses and on the other hand, in a perspective of triangulation of data by making it possible to confirm or not certain hypotheses underlying the elements put forward in the literature.

3.4. The conceptual model

Our conceptual framework is based on the systemic approach which contains four conceptual levels:

- Level 1: the external variables (Inputs) which have a role in determining perceptions of human capital in Social innovation (beliefs and satisfaction)

- Level 2: Intervening variables (Outcomes) assess general perceptions of social innovation. Level 3: Outcome variables that assess the impact of social innovation on human capital development
- Level 4: moderating variables that complete the explanation of social innovation

The systemic approach was initiated in the USA by Mahmood (1992) and Mckeen et al (1997). These researchers consider that the evaluation can be conceived as a sequential system of the type:

Inputs -------- Outcomes-------- Output

3.5. Findings and Discussion of Research Assumptions and Variables

The conceptual model of the research postulates direct and/or indirect dependency relationships between the variables of the different conceptual levels. These relationships reflect the hypotheses that allow us to answer the research question "How to bring Moroccan SSE organizations to make social innovation a lever to develop their human capital? » Three types of relations are studied, in order to justify the structure of the relations of the model. They are subject to three sets of assumptions:

- First, the general hypothesis of the model, denoted HG, assumes the existence of direct and indirect relationships between the external variables (level 1) and the variables of impact of social innovation on the development of human capital (level 3) , via the innovation acceptance variables (level 2). This general hypothesis is broken down into four underlying hypotheses: through the variables of the process of acceptance of social innovation.
- The HG1 hypothesis establishes the existence of direct and indirect dependency relationships between the external variables (level 1) and the first variable of the impact Is on human capital (3.1) through the variables of the acceptance process of social innovation.
- The HG2 hypothesis establishes the existence of direct and indirect dependency relationships between the external variables (level 1) and the second variable of the impact Is on human capital (3.2)
- The HG3 hypothesis establishes the existence of direct and indirect dependency relationships between the external variables (level 1) and the third variable of the IS impact on human capital (3.3) through the variables of the acceptance process of social innovation.
- The HG4 hypothesis establishes the existence of direct and indirect dependency relationships
- Secondly the partial hypotheses, denoted HP, which make it possible to validate the internal structure of the research model. These partial hypotheses postulate the existence of direct relations.

The general hypothesis of the research model:
It is formulated as follows:

- HG: "the impact of social innovation is influenced directly by its acceptance (level 2) and indirectly by external variables (level 1)"
- Partial hypotheses
- Partial hypotheses tracing direct and indirect effect relationships between variables. The latter is broken down into three sub-models dealing successively with the relationships between the external variables and the variables of the process of acceptance of social innovation and the relationships between beliefs and satisfaction between the variables of the impact of IS on the development of human capital.
- The Moderation Hypothesis of the Research Model (HM)

- HM: "the moderating variable has a moderating impact on the direct dependency relationships between external variables and beliefs".

3.6. Our research approach

Our research problem being established, we will first proceed to an analysis of the literature in order to bring out our conceptual framework. A cross-sectional reading of the literature allowed us to identify a set of reference models on the impact of social innovation on the development of human capital. Therefore, we will opt for an exploratory qualitative study in order to better frame our conceptual framework. By adopting the qualitative approach; however, the qualitative study is often an essential prerequisite for any researcher who will subsequently be required to carry out a quantitative study. It makes it possible to reframe and refine the research question, it allows the researcher to become familiar with the subject by putting themselves in the reality of things, it also makes it possible to clarify the theoretical concepts of the research. The qualitative study will also be of interest in clarifying the statements of the measurement instruments. The combination between the analysis of the literature and the qualitative study will allow us to build and validate our research model. The enriched model and the research hypotheses will then be tested in the next step. The analysis of the results will allow us to formulate a certain number of conclusions relating to our research problem. We believe that this approach has its advantages since it combines theory with practice.

4. CONCLUSION

To our knowledge, the social enterprise is considered as an enterprise characterized by the pursuit of social impacts, social innovation, and the use of managerial methods. For some, the social dimension is juxtaposed alongside financial return and risk without calling into question the regulations of the capitalist system. This no doubt goes hand in hand with a widely held belief in the business world that market forces have the ability to solve a growing share of social problems. We have based our work on a diverse and varied literature, touching on several fields and disciplines, such as SI, social entrepreneurship, SSE, social enterprise, social services… This was a difficult task given that this literature is rather meager and dispersed, especially for the case of the SI. This difficulty in carrying out our work clearly demonstrates its added value for the community (of scientists and others), materialized by the enrichment of the repertoire of research on IS5, which is very poor in Morocco. However, this work also has limits, in particular the fact that it is entirely based on literary research, which is the weakness of the part relating to the Moroccan case, which requires empirical studies:

- as social benefits, this work should highlight the need for a managerial culture aimed at continuous progress and the search for performance and development in its human and managerial sense;
- in terms of economic benefits, this work should demonstrate that social innovation makes it possible to rationalize the costs related to the management of human resources, by finding solutions that optimize its economic and financial impact on the organization.
- the next steps of our research will consist in starting the phase of empirical validation of our research model with managers and leaders of companies in the social and solidarity economy and producing the related research hypotheses. This could make it possible to identify new variables and collect possible comments in order to proceed with the modification of some irrelevant variables.

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SOCIAL MEDIA BRAND ENGAGEMENT: THE CONSTRUCT AND ANTECEDENTS IN HIGHER EDUCATION SECTOR

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ABSTRACT

Today, as globalization has become the focal point of higher education, competition has become a central preoccupation of higher education institutions around the world, the intensification of competition in this sector requires the strengthening of brand prestige and the use of social network communication strategies to leverage the power of these tools to increase student engagement with their institution. The literature on social media brand engagement is growing significantly, yet there is limited research studying the concept in the context of higher education. In this article, we present a literature review on the key drivers of social media brand engagement in the higher education sector and explore the utility of using social networks as a tool to engage students with their institution by reviewing different models studying and analyzing this concept. This work could be a useful and informative tool for higher education institutions, and researchers in this field to redefine their academic research efforts to study the concept of social media brand engagement in higher education sector.

Keywords: *Brand Engagement, Brand experience, Higher Education, Social Media, Service-Dominant Logic*

1. INTRODUCTION

Engaging consumers with the brands has become a strategic objective of the marketing function of organizations. Consumer engagement is the new hot topic of strategic marketing and branding (Gambetti et al., 2016) which has received ample attention from both practitioners and academics alike (Brodie et al., 2019). Consumers get involved in interactive experiences with the brands which leads to enduring and intimate relationships with the brands (Sashi, 2012). Especially, there is an ever-growing interest from marketers in the concept of student engagement and its outcomes for higher education institutions (Vuori, 2014). Historically, student engagement has been considered from the point of view of learning (Taylor et al., 2011), academic experiences (Astin, 1984), student conduct (London et al., 2007), degree of effort to acquire knowledge (Northey et al., 2015), participation in the learning community (Zhao and Kuh, 2004), and the time and energy expended by students (Kuh, 2003). However, student commitment to a Higher Education Institution (HEI) has not yet been fully investigated according to Hollebeek et al.'s survey on consumer engagement in different contexts and nomological network models (2014). With the rise of social media, the traditional roles of the seller and the customer have changed. Seller-customer relationships have changed in such a way that the former can now easily connect, share and exchange information with their customers (Gambetti et al. 2015; Sashi 2012). Customers can communicate directly with brands (Tsai and Men, 2013) under their own conditions and through the channels of their choice (Stone and Woodcock, 2013). As a result, new forms of customer-brand interaction have emerged, and customers have become a major factor in influencing different marketing outcomes, such as, brand awareness, buying behavior, and post-purchase evaluation (Brodie et al., 2013; Gambetti et al., 2015; Sashi, 2012; Tsai and Men, 2013).

Social media platforms, such as, YouTube, Facebook, and Twitter have become key tools for social media advertising through sponsored/promoted tweets on twitter, banner advertisements and brand communities on Facebook and LinkedIn, and video advertisements on YouTube that can evoke engagement (Boreman & Kruikemeier, 2016). The current article aims to expand on the existing studies on brand management that used the multi-dimensional construct of customer engagement (Dessart et al., 2015; So et al., 2014). In particular, Hollebeek et al. (2014) used the three dimensions of customer engagement, namely, cognitive (e.g., interest in using brand), affective (e.g., feeling about using brand), and behavioral (e.g., behaviors related to brand) engagements to examine the possible antecedents. This article overviews the literature that broadens the scope and conceptualization of the engagement concept by extending it beyond the industrial context to the higher education sector.

2. LITERATURE REVIEW

2.1. The concept of customer brand engagement: theoretical foundations

Engagement has been analyzed from a variety of disciplinary perspectives, including marketing, management, organizational behavior, education, sociology, psychology, information systems, and political science. It has also been discussed from different perspectives and in different contexts. In business, engagement is referred to as a contract. The current research aims to expand on the existing studies on brand management that used the multi-dimensional construct of customer engagement (Dessart et al., 2015; So et al., 2014). In particular, Hollebeek et al. (2014) used the three dimensions of customer engagement, namely, cognitive (e.g., interest in using integrated resort brand), affective (e.g., feeling about using integrated resort brand), and behavioral (e.g., behaviors related to integrated resort brand) engagements to examine the possible antecedents as an organizational activity with internal stakeholders, in marketing, "engagement has been discussed as the activity of the customer towards the company" (Kumar et al., 2010; Vivek et al. 2012 ; Brodie et al., 2011). Pansari & Kumar (2017) suggest that when a relationship is successful and has an emotional connection, then it progresses to the stage of engagement. Customer engagement has been discussed in marketing in the recent past (Brodie et al., 2011); (Kumar et al., 2010); (Vivek et al., 2012) as a measure of the outcome of business activities. Similarly, researchers and practitioners have discussed some other customer-centric measures such as customer satisfaction, involvement, loyalty, trust, customer commitment and brand value to assess the effectiveness of the marketing activities of the firm. In marketing, the study on engagement was first developed in the field of industrial marketing to examine the relations between suppliers and buyers. Commitment in this context reflects an organization's willingness to maintain a relationship with a partner, a tendency to resist change that can lead to short-term sacrifices (Morgan & Hunt, 1994). Subsequently developed in marketing service and consumer behavior in the relational paradigm, it helps explain in particular the stability of preferences. When applied to brands, the commitment corresponds to an intention of stability of behavior (fixing in the choice of brand), to the will to maintain a lasting relationship with the brand; it constitutes a direct antecedent of loyalty behaviors. Two of its dimensions are mainly mobilized in the context of the brand: the cognitive (or calculated) dimension and the affective dimension. The normative dimension (moral rules that govern relationships), which is less well suited to informal relationships, is most often ignored (Bozzo et al., 2008). The theory of engagement and trust (Morgan and Hunt, 1994) paved the way for relationship marketing. According to this theory, the main objective of companies is to establish positive relationships with customers by developing commitment and trust, this theory incorporates concepts of SET (Social Exchange Theory) and organizational behavior. According to Homans (1958), a social exchange is a voluntary exchange of resources between two or more actors. A social exchange relationship is based on the reciprocity norm (Bagozzi, 1995), "which postulates that if one exchange partner

does something advantageous for another, a reciprocity obligation is generated for good faith behavior" (Omar & Khairudin, 2009, p. 199). This reciprocity may involve tangible resources, such as, the exchange of money, or it can be of a socio-emotional nature, such as the exchange of respect, trust, commitment or loyalty (Aselage & Eisenberger, 2003). Exchanges may also happen between human entities (e.g., students) and non-human entities (e.g., institutions and their SNSs: social networking sites) (Wayne, Shore, & Liden, 1997).

2.1.1. Social media brand engagement

A brand page is a place where individuals who have created a profile that reveals their true identity, interact, in a personalized and instantaneous way, more or less frequently with the brand or with other people with common interests, by means of texts, images, videos in order to share their experience with the brand (actions, values, symbols, etc.). It is also a place of expression/reinforcement of one's (real or ideal) self (Hollenbeck and Kaikati, 2012). Given these specificities, consumer engagement with the brand via the brand page on social networks, has as its object both the brand (Consumer Brand Engagement - CBE) and the other fans of the brand page (social engagement). Recently, a stream of research has developed that explicitly makes the brand the object of engagement via social networks. This has given rise to the notion of Consumer Brand Engagement (CBE), in other words, consumer engagement with the brand. Based on relatively exhaustive literature reviews in marketing and in various related disciplines (psychology, sociology, management, etc.) and focusing on consumer engagement, this paper examines the role of social networks in the development of consumer engagement. Focusing on the consumer, these works reflect three main views of commitment: 1) a psychological or motivational state (Mollen and Wilson, 2010; Vivek, Beatty and Morgan, 2012); 2) behavioral manifestations (Van Doorn et al, 2010) - a view shared by practitioners (Mollen and Wilson, 2010); and 3) a combination of cognitive, affective and behavioral dimensions (Brodie et al, 201; Dwivedi, 2015; Hollebeek, Glynn and Brodie, 2014). The third approach, the multidimensional approach, is the most widely shared by marketing authors (Hollebeek, Glynn and Brodie, 2014). In that it is holistic, it also allows for an account of consumers' perceptions of brands: both utilitarian, hedonic and symbolic but also of all facets of consumer-brand interaction (Dwivedi, 2015). In this article, the three-dimensional perspective is adopted and Hollebeek, Glynn and Brodie's definition is chosen: “Positive brand-related cognitive, emotional and behavioral activity during or in connection with consumer interactions with the brand” (2014, p. 154). It has the advantage of focusing on the notion of interaction, which lends itself well to social networks, and of considering a behavioral dimension, which is relevant for understanding brand engagement via these networks. Going back to the seminal work on engagement in the relational brand approach, we conceptualize each of the dimensions as follows. The cognitive dimension refers to a calculated (or instrumental) motivation that reflects the fan's interest in pursuing the relationship with the brand on the social network. This dimension reflects a self-interested commitment (expected benefits of the relationship) and is cognitive in nature as it results from a belief in the superiority of the brand (Bozzo et al, 2008). The affective dimension reflects the affective links that the fan has with the brand and the pleasure he/she takes in interacting with the brand. This dimension is linked to a hedonic motivation which is closely related to brand attachment (i.e. strong emotional link to the brand) (Lacoeuilhe, 2000; Thomson, MacInnis and Park, 2005). The affective dimension of commitment and attachment are sometimes confused in brand research (Fullerton, 2005). Finally, the behavioral dimension corresponds to the activities carried out by the consumer during his/her interaction with the brand on the social network; in other words, his/her participation in activities initiated by or related to the brand (Van Doorn et al., 2010; Vivek, Beatty and Morgan, 2012).

2.1.1.1. User gratification theory

Many theories and models are used for understanding behavior in social media. Looking at the literature related to social media research we discovered that the Use and Gratification Theory (UGT) is one of the most widely used theories to explain consumer's motivation to engage in social networks. The main objective of the UGT is to clarify the causes for which people choose a specific type of media in order to improve the understanding of social and individual gratifications and also to explain the motivations of users when they interact with a media (Hossain, 2019). Chen ,Yang, and Tang (2013) show that entertainment, social need and the need for information have stronger effects on their attitudes towards the use of the online brand community, which supports the arguments of UGT. Gao and Feng (2016) who conducted research on microblogging and other SNSs in China, revealed that social interaction, entertainment and information-seeking factors significantly motivate the Customer engagement. Lee and Lee's (2014) studies on student engagement found that motivation to engage in SNSs was the enjoyment of the content posted and the maintenance of interpersonal relationships with other people in the SNSs. (Jayasingh,2019)

2.1.2. Student engagement

In higher education context, students are the customers who use the services provided by the higher education institution brand (Waqas et al., 2014). This means that the phenomenon of customer brand engagement can explain student engagement with the higher education institution brand. Student engagement with the HEI brand can be viewed from the perspective of relationship marketing theory and the service-dominant (S-D) logic. The studies included in the SD-logic or 'service dominant logic' current (Vargo and Lusch, 2004) suggest an evolution of marketing concepts by putting forward an approach centered on the relationship in the exchange, integrating the role of networks of multiple actors in the creation of value on the market. Wishing to go beyond the framework of a product-centered approach (G-D logic, good dominant logic), this current proposes to consider as central the notion of service, in the sense of 'rendering service', or in other words, the idea that exchanges are built around “a process of doing something for someone” (Vargo and Lusch, 2009). Today, HEIs should not only think about providing better services but also about developing relationships with their students to engage them with the institution. Based on the relational transcendence of S-D logic, student's behavior depends on their interactive experiences with other stakeholders, such as, the administrative and academic staff of a higher education institution (Vivek et al., 2014). Student engagement can be defined as "a psychological and motivational state composed of cognitive, emotional and behavioral dimensions, based on student’s interactive experiences with the HEI brand". This definition is similar to the definitions proposed by Bowden (2009), Van Doorn et al. (2010), Brodie et al. (2013), and Hollebeek et al. (2014). Conduit et al., (2016) define engagement as “the willingness of a student to be involved in the institution's life. Recent studies have considered student engagement as a cognitive, affective and behavioral construct (Conduit et al., 2016; Fredricks et al., 2004; Lam et al., 2014). The cognitive dimension of student engagement is manifested through a process related to thinking, their level of concentration, and mental activity regarding their academic experiences in an HEI (Northey et al., 2015; Scott & Craig-Lees, 2010). Cognitive engagement can be measured by assessing students' activities, which reflect their mental concentration and approach to the learning experience (Lam et al., 2014). The affective dimension of student engagement manifests positive emotions towards the institution's brand (Northey et al., 2015). It is related to their attitude towards the higher education institution. Factors, such as, sense of affiliation, identification and commitment to the HEI reflect the affective dimension of student engagement (Lam et al., 2014; London et al., 2016), sense of comfort, belonging and motivation are the key elements in creating positive emotions in students (Northey et al., 2015) that result in affective

engagement. The behavioral dimension encompasses the student's desire to invest energy and time in tasks or activities (Conduit et al., 2016) such as class attendance, participation in classes, extracurricular activities, and homework completion are manifestations of students' behavioral engagement (Lam et al., 2014; London et al., 2007).

2.2. Antecedents of student brand engagement

2.2.1. Brand experience

The increasing importance of brand experience in the context of engagement is attributed to the service-dominant logic (S-D logic) as a new marketing perspective (Mohd-Ramly & Omar, 2017). Previous marketing literature has established the central role of experience in shaping satisfaction, relationship quality, behavioral intention, attitude and brand equity (Barnes et al., 2014). In the context of marketing, experience is referred to as "*the creation of a perception in the minds of customers as a result of interaction with the brand*" (Potdar et al., 2018) and as the total perception or subjective response resulting from service delivery (Lewis & Chambers, 2000). Marketers are advised to create a sense of attachment with customers by orchestrating holistic experiences. In essence, a brand and its marketing activities play a vital role in influencing the mindset of customers regarding their knowledge and attitude.

2.2.1.1. Sensory brand experience

In a virtual environment, such as, Facebook, experiences are created through internet-connected media that enable multi-sensory interactions between customers and brands (Fiore et al., 2005). The virtual customer experience is interpreted as a visual representation of the physical experience. It is argued that these customer experiences do influence their online engagement behavior on SNSs brand (Hsu et al., 2012). Multiple brand cues create a brand experience, such as colors, melodies, logos, slogans, characters and stories associated with the brand (Morgan-Thomas & Veloutson 2013; Nysveen et al., 2013). In particular, brands that employ rich content and interactivity on their SNSs, enhance the online experience, which leads to increased customer engagement (Tafesse, 2016). In the higher education context, the interaction and socialization that happens between customers and the brand (student and the higher education institution) community also defines the sensory experience for customers, it allows students, who follow social media SNSs to have a sensory experience related to HEIs (higher education institutions) when they interact with the SNSs and other stakeholders of the HEI (Farhat et al.2020).

2.2.1.2. Intellectual brand experience

Intellectual experience, also known as cognitive experience, involves the cognition and problem solving stimulated in customer’s mind towards brands. Intellectual brand experience refers to the cognitive experiences that customers get from products and services that lead them to actively connect with the brand and share information about the brand. (for example: curiosity, positive thinking). The brand’s ability to create an intellectual experience encourages consumers to create new perspectives on the previous experience with the brand, and to seek more information (Schmitt, 1999). In the context of social media, it may be a matter of looking for information related to the brand, its activities and its offers. Similarly, when higher education institution social media SNSs share online speakers and educational content with their audience, this includes the intellectual experience that students receive through the institution’s SNSs.

2.2.1.3. Behavioral experience

The behavioral dimension of the brand experience refers to the physical activity involved in consuming the brand. Behavioral brand experience is also seen as the result of marketing acts

that provide a physical experience and enrich the customer's life by offering them a physical experience. Ong et al., (2018) reported that behavioral experience of a brand drives significantly brand engagement behavior (word of mouth). In the context of higher education, the behavioral experience happens when students navigate the institution's SNSs and use the information provided on that SNSs. (for example: announcing the date of important events…)

2.3. Brand interactivity

The increasing interactivity on social media has become a challenge for marketers in various sectors, including higher education institutions. Interactivity captures the independent business practice of communication and information between parties and the resulting influence that communicating parties have on each other. When brands communicate with customers, they demonstrate their desire to interact and listen to customers (France et al., 2016). Brand interactivity is evaluated on two major aspects; technical facilitation and the brand's sincere efforts to connect with customers. Interactivity on brand's social networks is a significant influencing factor of customer's reciprocal interaction with the brand and, consequently, their engagement with the brand. Existing literature supports the impact of brand interactivity in creating brand engagement (De Vries & Carlson, 2014). A previous survey provided substantial support for customer engagement with brands that listen to them and encourage two-way communication (Shao et al., 2015). The concept of brand interactivity is not only new to brand engagement, but also little studied in the higher education environment. Brand communication reveals the desire of brands to engage with customers. Alternatively, brand interactivity is seen as the customer's perception of the brand's desire to collaborate with them. Thus, customers' perception of initiatives taken by the brand to communicate with them is also meaningful for brand engagement (Hollebeek et al., 2014). The growing trend of customers and brands interacting has had a positive impact on the customer-brand relationship (Jee & Lee, 2002). The literature on brand engagement has highlighted that interactivity is fundamental to brand engagement. In this article, we define brand interactivity as the interactions initiated by HEIs to engage students. The interactivity initiated by HEI's brand SNSs with students is fundamental to inculcate brand engagement behavior in students. The interaction between brands and customers allows the student to voice their concerns and even gather daily academic information. An interactive school SNSs keeps the school brand and the student in tandem and forms a deeper relational bond between the two. Students encouraged by the interaction and responsiveness of the HEI brand are very likely to engage with the institution. Two-way communication through social media allows students to actively participate in the brand discourse of their institution, such as word of mouth, feedback and recommendations. (Farhat et al.,2020)

2.4. Brand involvement

Involvement is widely recognized as an important component of consumer behavior (De Vries & Carlson, 2014; Dwivedi, 2015). Although there are a large number of definitions of involvement, there is broad agreement among researchers that involvement is related to personal relevance (Celsi & Olson, 1988; Mitchell, 1979; Park & Young, 1986; Petty & Cacioppo, 1981, 1986; Richins & Bloch, 1986; Zaichkowsky, 1985). Zaichkowsky defines involvement as "*a person's perceived relevance of the object in terms of inherent needs, values and interests*"(1985, p. 342). Similarly, Celsi and Olson add that "a consumer's level of involvement with an object, situation, or action is determined by the degree to which he or she perceives the concept to be personally relevant" (1988, p. 211). In this sense, customers who have a high level of engagement are more likely to be engaged regarding to thoughts, feelings and behavior to a particular object (Gordon, McKeage and Fox, 1998). Therefore, Brodie et al., (2011, 2013), Hollebeek, Glynn and Brodie, (2014), Leckie, Nyadzayo and Johnson, (2016)

and Wirtz et al., (2013) advance that customer involvement is a necessary antecedent of customer brand engagement. Brand involvement and brand engagement are closely related, as both are relational variables that predict consumer behavior (France et al., 2016; Hollebeek et al., 2014); however, some conceptual distinctions exist: while the former is usually defined at the cognitive, affective or motivational level or at the level of perceived relevance, the latter involves cognitive, affective and motivational levels (Hintikka, 2017)

3. CONCLUSION

Social media is an emerging area in marketing and higher education that is becoming increasingly important. Social media can have many beneficial effects for marketers, such as, increased exposure, increasing traffic, improving search engine rankings, reducing marketing costs and increasing sales (Stelzner, 2011), in the case of our study, improving the relationship between students and their institution. This research contributes to the consumer engagement literature in the sector of higher education. First, responding to the call for further research (Dessart et al., 2016; Hollebeek et al., 2014, 2016) this article contributes to the underexplored phenomenon of student brand engagement. Second, this article also enhances the understanding of multidimensional engagement theory (Brodie et al., 2011). The article shows that customer involvement, customer interactivity, and customer flow experience are the main drivers of social media brand engagement. Considerable interest seems to have intrigued researchers in measuring member-brand communication on SNSs and its link to co-creation (Zheng et al., 2015) and its role in building customer relationships (Casaló et al., 2010; Shen et al., 2010). While brands have traditionally relied on traditional modes of communication to connect with their target customers, SNSs have also enabled HEIs and students to connect, communicate and exchange information.

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THE CITY-PORT INTERFACE IN THE TANGIER TERRITORY: WHAT STRATEGIC FIT OF THE TRIPTYCH ECONOMIC PROSPERITY – SOCIAL WELL-BEING – SUSTAINABILITY?

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ABSTRACT
The contraction of industrial activity combined with the relocation of maritime activities to new sites have shaken the system of relations that have linked urban and port spaces for several centuries. The city of Tangier is not immune to these profound changes. Based on a myriad of theoretical approaches, our research is an analysis of the city-port relationship and its evolution over time. More specifically, it examines the degree of trade-off between economic concerns and socio-ecological considerations in this relationship. Based on a qualitative approach with a comprehensive aim, we preferred the case study of the Tangier city port. The main insight we extract from our analysis is that the city-port interface of the Tangier territory leads to economic solutions at the expense of social well-being and ecological awareness.
Keywords: *City-port interface, Tangier territory, strategic fit, economic dynamics, social well-being, ecological awareness*

1. INTRODUCTION

For centuries, the port and the city formed a relationship of interdependence, a consubstantial, morphological and functional link between the city and the port, especially at the interface. They were intertwined and their activities were complementary. Maritime technological developments and new economic requirements since the 1950s have led to significant changes in the location of port activities. Faced with these developments the city and the port have gradually separated, each one evolves differently and gradually regains its specificity and its own requirements. The Technological revolutions in maritime transport, the new techniques for handling and storing goods, the rate of ships rotation, the disappearance of long-distance passenger traffic, the contraction of heavy industrial activity and, even more so, the relocation of maritime activities to new sites, most of which are totally disconnected from the original site, are all factors which, by combining, have shaken the system of relations that for several centuries articulated urban and port spaces (Chaline, 1994). These profound changes have meant that the functional spatial links between the city and the port are gradually weakening. They are becoming less and less dependent and increasingly confrontational (HALL,1993; Rimmer, 1967; Gordon, 2016). Tangier is a port city located in the North of Morocco 14 km from the Strait of Gibraltar and overlooks two seas at the same time, the Atlantic Ocean and the Mediterranean. Thanks to its strategic location, Tangier was renowned as a place where cultures met. The interest of foreign powers through time made Tangier in 1923 «an international zone», in 1956 the city integrates the kingdom of Morocco but still retains its international character.
The port of Tangier is part of its history and identity. The relationship between the city and the port of Tangier has long been symbiotic. Most of the port cities in the world are faced with the relocation of their maritime facilities and activities in favor of more efficient suburban sites. Tangier is also living its destiny and has recently experienced the relocation of its port activities.

The creation of Tangier Med Port and the reconversion of the Tangier city Port have created new relations between the city and port, an evolution which has given rise to several phenomena and which has brought Tangier into a new challenge. The exceptional specifications of Tangier's relationship with its port lead us to study its evolution over time and to analyze the new links, phenomena and impacts produced through this mutation. Through this study, we will try to answer the following questions:

- What are the changes and transformation that the port city has experienced?
- What is the evolution of the port-city relationship in Tangier?
- How do these changes affect the relationship between the city and the port of Tangier?
- How can we direct the city and the port towards a prospective vision aiming to maintain a good sustainable relationship?

2. OBJECTIVES OF THE STUDY

Through this study, we will try to achieve the following objectives:

- Analyze the spatial and functional evolution between the city and the port through time: Theoretical approaches.
- Specify the real causes of the changes experienced by the port city
- Analyze the evolution of the port-city relationship of Tangier over time
- Study the redevelopment of Tangier City waterfront
- Clarify the new link between the city of Tangier and its port
- Identify other aspects of this evolution
- Suggest a solution to combine the city and its port again after their dissociation

3. THEORETICAL APPROACHES

Several studies have been carried out to analyze the evolution of port cities by highlighting the change of the urban landscape and the development of the port morphology in time and space following the major changes experienced by the world after the industrial revolution as well as the interactions between the city and the port. The profound changes in the maritime environment have led to an inevitable dissociation between urban and port spaces.

3.1. Bird's Anyport model 1963

After 1950, the world experienced a kind of gradual functional and spatial disconnection between cities and ports due to the technological revolution in the maritime field. In 1963 James Bird highlighted this gradual functional and spatial disconnection between the city and ports through his model of spatial evolution Anyport (Bird, 1963). James Bird modelled the development of the port as a single homogeneous entity in time and space until the containerization revolution, starting from the example of British estuary ports, he described the process of the spatial relocation of ports. A gradual exit from the city's port functions and its relocation to the urban periphery or outside the city. These new port spaces are better suited to the large infrastructures required for containerization (Bird, 1973). Bird identified six phases of this disconnect based on three main steps (Figure 1): installation, expansion and specialization:

Figure following on the next page

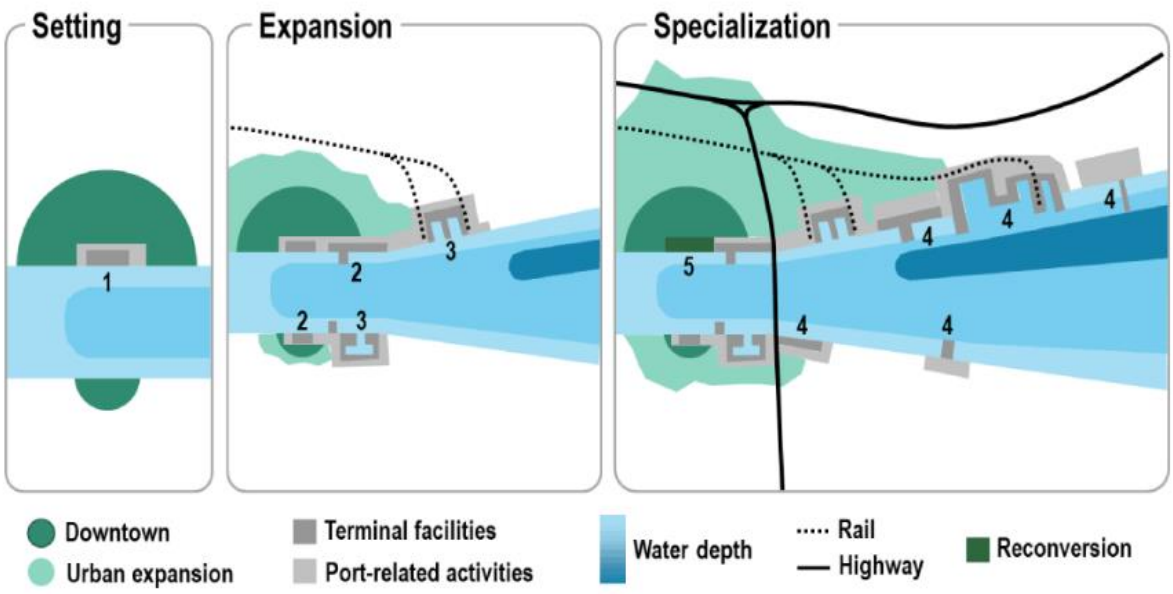


Figure 1: The evolution of the port
(Source: The Anyport Model (Bird, 1963))

- Installation: Until the Industrial Revolution, the organization of the ports remained quite simple, focused around a few basins (1) for fishing or trade, and accompanied by activities located in the marine district
- Expansion: The industrial revolution brought several changes, including the increase in tonnage and passenger traffic, relayed by the growth in the size of ships and docks (2) necessary for their reception. Gradually, the integration of rail at terminals (3) allows access to vast hinterlands, which in turn inflates maritime traffic. Port activities integrate new industrial activities of raw material production as well as shipbuilding and ship repair.
- Specialization: This phase is characterized by the creation of new specialized piers and dikes (4) in containers, liquid and solid bulk, minerals and cereals, tends to approach the high seas, by increased need for adequate depths and by digging and dredging new channels. So there is a port migration that brings with it a lot of spinoff activities. Thus, the original port sites, often adjacent to the city Centre, become obsolete and abandoned. We find once again the dynamics of urban requalification of abandoned port spaces (5).

This model is still used to explain post-containerization port developments, including naval gigantism (Chan and Yip 2011; Hoyle 1989). But the urban morphology is not studied, and is limited to studying the remoteness of the port from its functional specialization.

3.2. The city-port interface concept

Hayuth (1982), who introduced the concept of interface (Hayuth, 1982), studied the degree of spatial association between the city and the Port. He specifies two main components of the contact area and interactions of the City Port:

- A spatial and economic system that concerns the use of land in contact between the city and the port
- An ecological system centered on air quality, water and landscape, as well as the quality of life at the interface.

In 1988, Y. HAYUTH was the first to propose a theorization of waterfront through an approach to its internal dynamics.

A space system and a functional system are linked at three levels: the technological changes of maritime transport, the growing public interest in the seafront, and the emergence of multimodal transport systems. Norciffe et al. (1996) used the concept of the Hayuth 1982 interface to analyze the spatial competition between the city and the port. This is manifested by the competition between the economic activities at the interface. They analyzed economic, port and non- port activities and determined their overriding location criteria: the quantity of labor and the quantity of available land needed. They modeled this functional disjunction between the city and the port, and its spatial impact at the interface (Figure 2). In addition, they highlighted the removal of the port and the reduction of the interface.

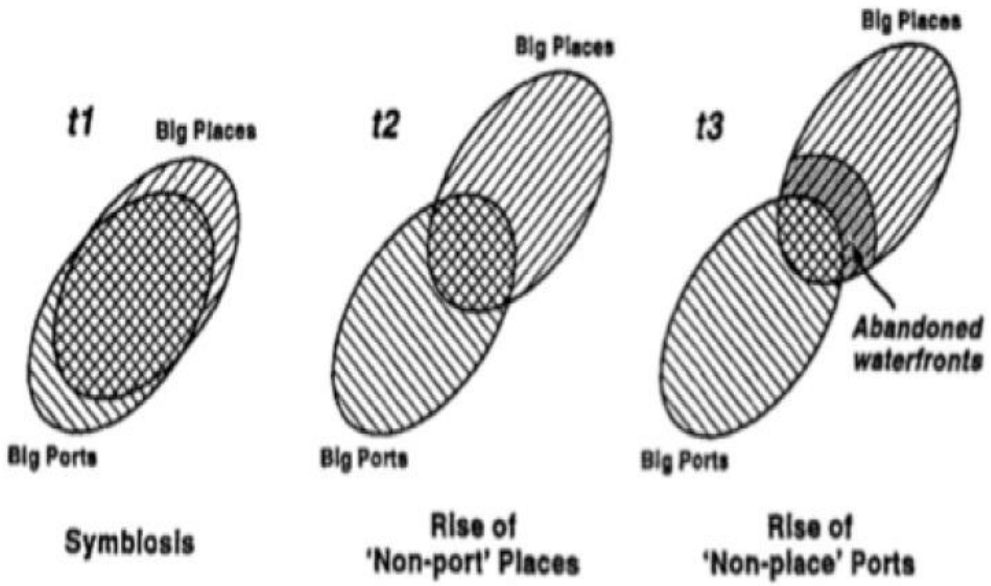


Figure 2 : Norcliffe et al. Interface (1996)
(Source: Norcliffe et al (1996))

The methodology of Norcliffe et al. (1996) and the calculation of the economic interface will be used by several studies later (Daamen and Vries 2013; Wigman and Louw 2011; Durcruet and Lee 2006; Sairinen and Kumpulainen 2006).

3.3. Brian Hoyle's Port City Evolution Model 1989

In 1989, Hoyle proposed an evolution model (Figure 3) which is based on the historical relations of the city and the port (Hoyle, 1989). Two new phases appear: the withdrawal of the port from the city and the redevelopment of the interface. This model updates Bird's Anyport model (1963) based on the recent maritime technological developments, namely the naval gigantism that distances the ports of the city and integrates the functional and environmental interface of Hayuth (1982). Hoyle (1989) shows the evolution of city-port links and the gradual disappearance of the interdependence between the city and the port as the port migrated outside the urban territory. He modeled this evolution in five stages:

- The first stage «Primitive port/city» which lasted from the Middle Ages to the 19th century, this stage was characterized by very close spatial and functional links between the city and the port.
- The second stage «Expansion port/city» In the 19th and early 20th centuries, rapid commercial and industrial growth forced the port to develop beyond its limits

- The third stage "Modern industrial port/city" represents the modern industrial port in the middle of the 20th century which was distinguished by a real industrial growth (oil refining in particular) and then the introduction of the container requires separation and increasing space.
- In the fourth stage «Retreat from the waterfront» the withdrawal of the port from the interface 1960-1980: Technological changes and the development of the marine industry distance the port from the interface
- The fifth stage «Redevelopment of Water front»; in the years 1970-1990 the modern port consumes vast spaces; this phase is marked by the appearance of the phenomenon of redevelopment of the interface.

In 2000 Hoyle adds a new historical phase to the city-port relations, to obtain a model that takes the evolution of ports roles. This sixth stage “Renewal of port/city links” (Hoyle, 2000) concerns the period 1980-2000+, in this stage globalization strongly impacts the role of the port and the links that exist between the port and the city (Hoyle, 1997)

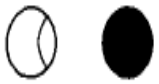
STAGE	SYMBOL ○ City ● Port	PERIOD	CHARACTERISTICS
I Primitive port/city		Ancient/medieval to 19th century	Close spatial and functional association between city and port.
II Expanding port/city		19th–early 20th century	Rapid commercial/industrial growth forces port to develop beyond city confines, with linear quays and break-bulk industries.
III Modern industrial port/city		Mid–20th century	Industrial growth (especially oil refining) and introduction of containers/ro-ro (roll-on, roll-off) require separation/space.
IV Retreat from the waterfront		1960s–1980s	Changes in maritime technology induce growth of separate maritime industrial development areas.
V Redevelopment of waterfront		1970s–1990s	Large-scale modern port consumes large areas of land/water space; urban renewal of original core.
VI Renewal of port/city links		1980s–2000+	Globalization and intermodalism transform port roles; port-city associations renewed; urban redevelopment enhances port-city integration.

Figure 3: Brian Hoyle's Port-City Evolution Model
(Source: Evolution of the port city interface (Hoyle, 1989; 1998))

Hoyle’s model is limited to the historical special and functional aspects of the city-port relationship, and does not address the other facets that influence this evolution: culture, mentalities, values attached to places, quality of life and others.

3.4. J. Charlier’s chrono-spatial model of the port life cycle 1992

In 1992 J. Charlier was inspired by the previous models of Bird 1963 and Hoyle 1989 and proposed a chrono-spatial model of the port life cycle (Figure 4), distinguishing five phases (growth, maturity, obsolescence, abandonment, redevelopment) (CHARLIER, 1992). These five stages trace the evolution of each port equipment which has a lifespan beyond which it becomes unsuitable (Boubacha, 1997).

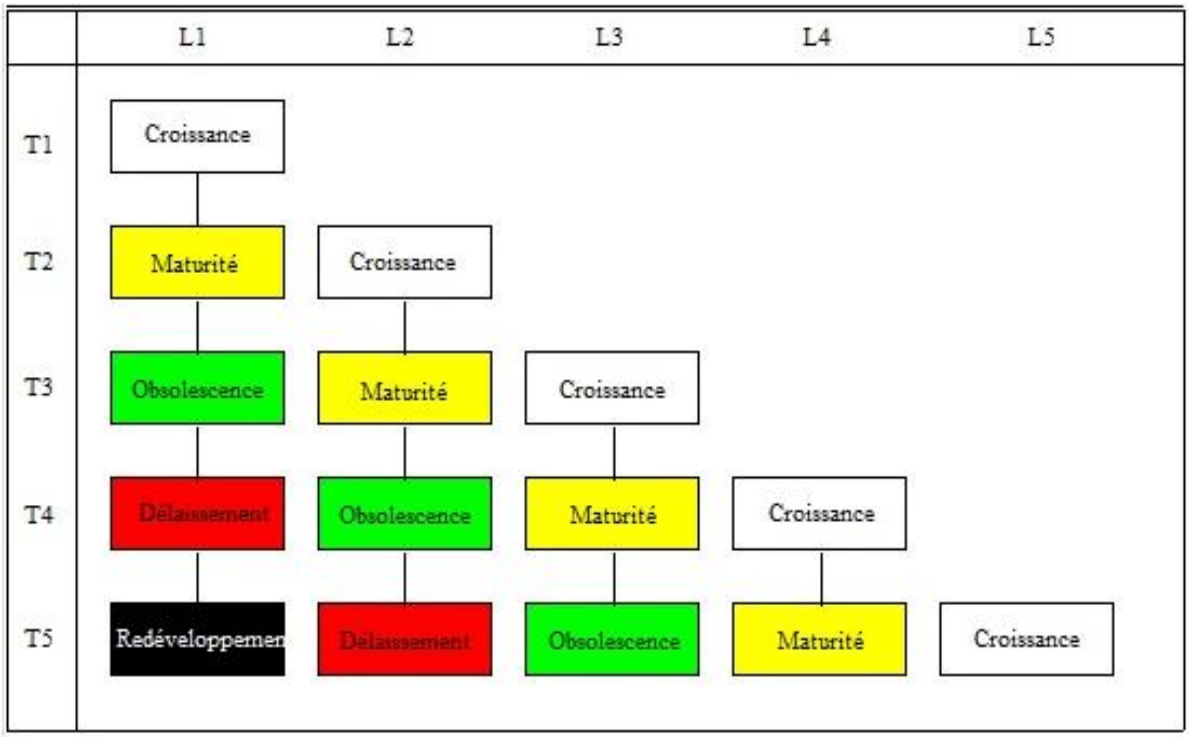


Figure 4: J. Charlier 1992 Port Lifecycle Time Model
(Source: CHARLIER, J (1992) "The regeneration of old port areas for new port uses" in European port cities in transition; p: 137-154))

Growth: Creation and expansion of equipment, the port in this stage is at the start of its activity, modern but does not operate at full capacity or has not yet reached its maximum productive.

- Maturity: The maximum potential is reached; in this stage the port is very efficient and has reached its full productive capacity
- Obsolescence: We are turning to more modern, more efficient equipment with a better situation, since the equipment that the port land possesses makes it less productive and competitive
- Abandonment: Once the port activity has disappeared, often in this case the port land is set aside or fallow, waiting for redevelopment.
- Redevelopment: The beginning of a new economic cycle

The growth and maturity stages in the life of a port are essentially based on the development of traffic, passengers, goods, and fishing. Which leads to the development of derived activities such as storage, trading, manufacturing, ship repair and subcontracting. In this stage the port becomes very efficient and reaches its maximum capacity which imposes a morphological break between the city and its port. During the next stages of obsolescence and abandonment, the equipment on the port site makes it less productive and competitive and becomes obsolete and unsuitable for new technologies. In this case the port land is put in reserve or fallow, waiting for a redevelopment. The last stage corresponds to a refocusing of the city towards the port, and the re-appropriation of the port wastelands.

3.5. Notteboom and Rodrigue model (2005)

In 2005, taking the three phases of the model of Bird (1963), Notteboom and Rodrigue propose to reassess to re-conceptualize the port and its hinterland. They introduce a fourth phase of regionalization, since more extensive domestic links are established between the port and its

hinterland (Notteboom et Rodrigue, 2005). According to them, this is a logistical revolution that leads to a "regionalization of ports" (Figure5).

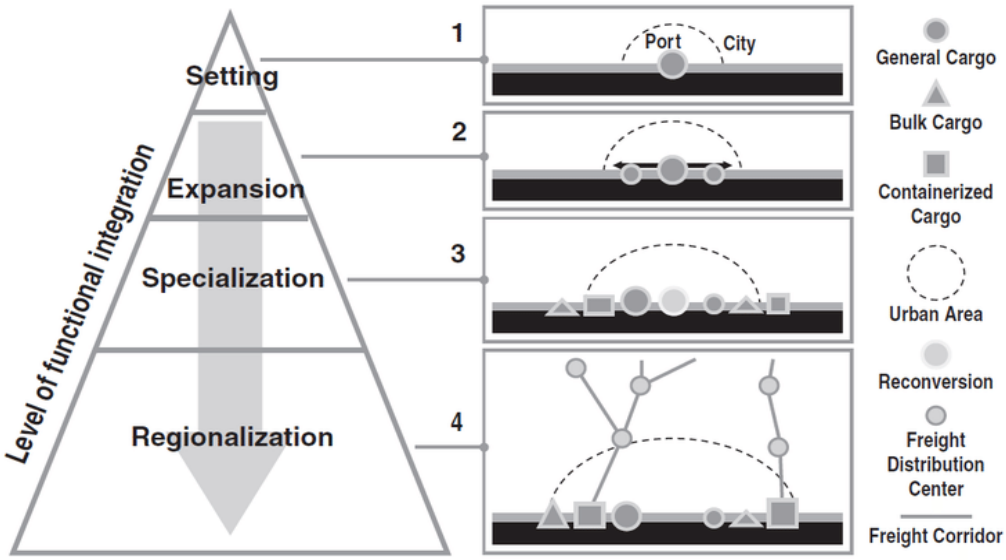


Figure 5: Notteboom and Rodrigue's Model for the port's regionalization (2005) (Source: Notteboom et Rodrigue (2005)

In 2010, Notteboom and Rodrigue completed their regionalization model (2005) with a comparable study for port-foreland relations. Its central concepts are emerging transshipment ports and offshore port sites. Rodrigue and Notteboom (2010) complete their analysis of the "Fore land-port-hinterland triptych" by integrating the global scale.
Notteboom and Rodrigue model is interesting, but it leaves out many aspects of port-city relations. In addition, the city is not taken into account in their model.

3.6. Wiegman's and Louw model (2011)

The model proposed by Wiegmans and Louw in 2011 (Figure 6) is an extension of the evolutif model of Norcliffe et al. (1996). The model integrates regulation with the Hoyle model and shows that it disrupts the correlation between form and function (Bird 1963). These authors add to the fourth phase to the Hayuth model, an emerging phase where the relationship between the city and the port is conflicting, in particular because of environmental regulation issues.

Figure following on the next page

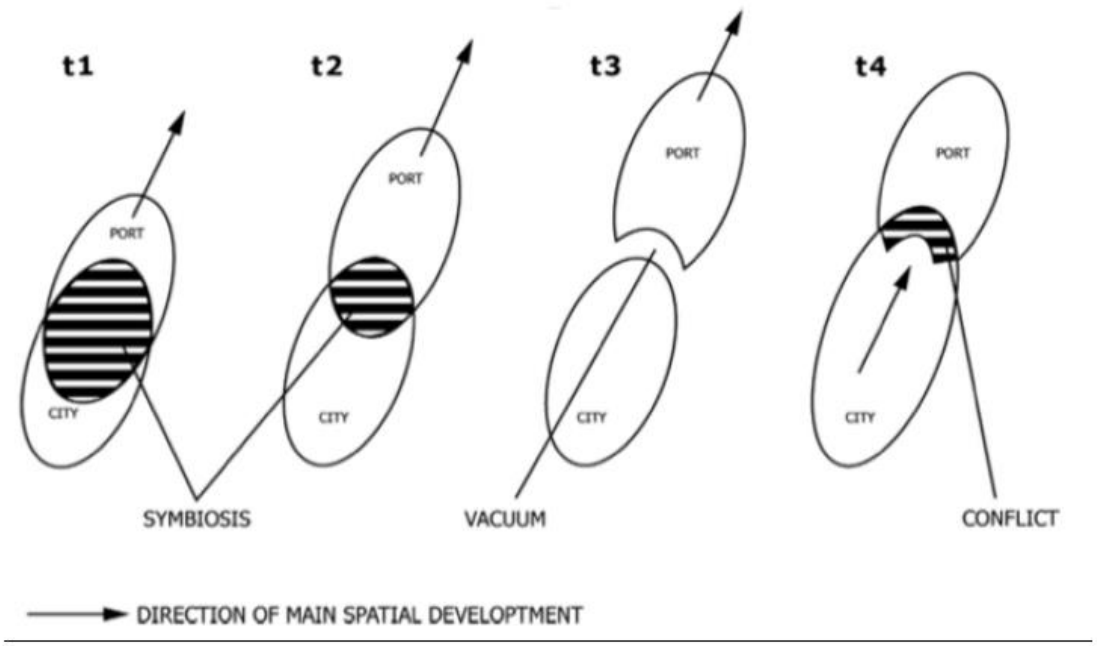


Figure 6: Wiegmans and Louw 2011 model
(Source: Wegmans et Louw (2011)

The model has some limitations since it does not make a distinction in the typologies of port and city-port relations, the regulation taken into account is purely environmental, and does not cover the other issues of city-port relations.

4. EVOLUTION OF THE PORT-CITY RELATIONSHIP OF TANGIER

4.1. Tangier: Crossroads of the world

Located on a bay, at the end of the Strait of Gibraltar, at approximately 15 Kilometers from the southern coasts of Spain, Tangier enjoys a strategic geographical situation. It overlooks two seas at once, the Atlantic Ocean and the Mediterranean. This exceptional geographical location made that Tangier was coveted throughout history by several colonial powers, including Phoenicians, Romans, Arabs, Portuguese, British, French and Spanish. The interest of foreign powers over time made Tangier in 1923 « an international zone», in 1956 the city joined the kingdom of Morocco but still retains its international character (Guertler, 2016). In 1999, new projects were envisaged. Today Tangier is developed in a voluntary way as a hub of trade and traffic. A multimodal transport system is connecting Tangier to infrastructural networks and interregional goods flows. «Tanger Métropole» project announced in 2013 aims to complement these infrastructures at the local level: roads, public transport, green spaces, social, cultural and sports facilities. And establishing transport and communication infrastructure. Today Tangier is the second economic hub of the Kingdom of Morocco after Casablanca.

4.2. Evolution of Tangier's port

The origin of Tangier´s port dates back to the 17thcentury, when the English built a pier of 225 m long and 33 m wide which was destroyed in 1684. Between 1903 and 1908 an embryonic port for barcasses and small sailboats was created; it consisted of a 340-meter-long pier which protected it against the north-westerly swells. Between 1925 and 1933, the «Tangier Port Company[1] » carried out numerous extensions including a 960 m long breakwater, a 300 m

[1] In 1921, a Dahir of the Sherifian Government granted the "Société du port de Tanger" the exclusive right to build, maintain and operate the port of Tangier. In 1967 the State entrusted this mission to the Autonomous Authority of the Port of Casablanca (RAPC), in 1985 to the port operating office and in 2006 to the National Ports Agency

intermediate bridge, a solid earth for deposits of coal and fuel oils, several piers, dredging at 3, 5 m deep and 4 m deep inside the coasting basin, waste disposal for anchorage at 8 m deep, as well as an oil dock and a stopover dock. In 1962[2], the first free zone in the country, mainly oriented towards the textile and clothing sector, was established in the port area. In the 1990s, the expansion of this area was discussed, but within the city the space was quite limited. It was not until 2002 that the new history of the port was born following the launch of the Tanger Med Port project by His Majesty King of Morroco Mohammed IV. The project is planned outside the city (52 km from the city of Tangier). In 2004, the construction works of the Tanger MED 1 Port was started, the port cranes were installed in 2006 and the first part of the port opened in 2007. The port Tanger Med I includes two container terminals with a total nominal capacity of 3 million TEUs, a rail terminal, an oil and gas terminal, a miscellaneous freight terminal, and a vehicle terminal. In 2008, the construction of the passenger and ro-ro port began, which was opened in 2010. The PPR includes the access and border inspection areas, the passenger and TIR boarding docks, the regulatory areas, and the ferry terminal. In 2009 the industrial platform Tanger Med I was launched. On 15 December 2010, by ministerial decree, the port of Tangier city was closed to commercial ships and can only accommodate cruise ships and high-speed ships connecting it to Tarifa (port in the south of Spain). In 2015, the project of Tanger Med II was launched and was inaugurated in 2019. The result of this gigantic work is today exceptional. With a total of 7,173,870 TEU (Twenty Foot Equivalent) containers handled in the Tanger Med port complex, up 24% compared to 2020, making Tanger Med a leading port capacity in the Mediterranean and ranked as the 1st container port in Africa.

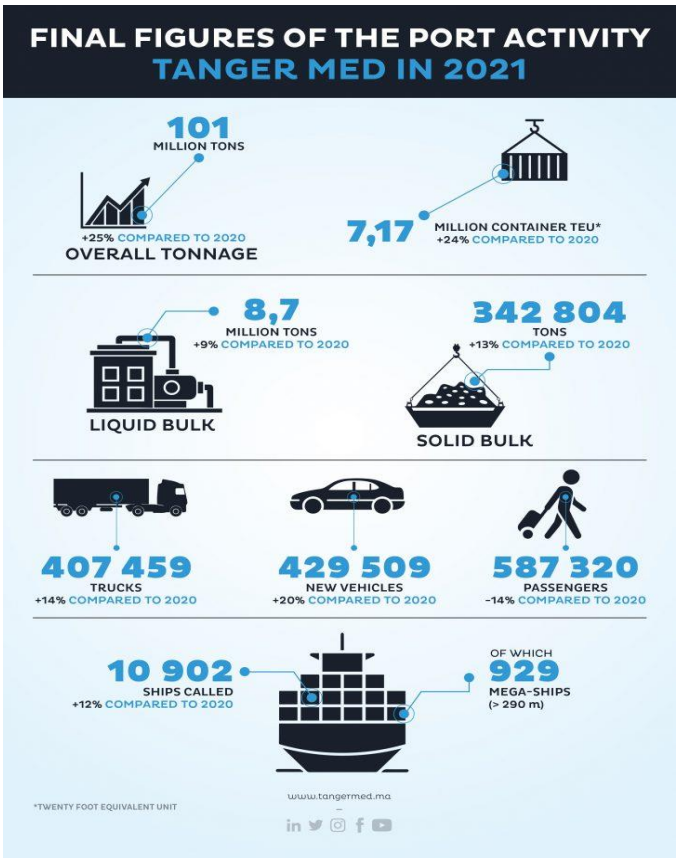


Figure 7: Final figures of the Port Activity Tanger Med in 2021
(Source: Tanger Med Port Authority)

[2]The free port zone of Tangier created from January 1, 1962 in the port enclosure of Tangier by Dahir n° 1/61/462 of December 30, 1961.

In 2021, 587 320 passengers passed through the Tanger Med Port. The port counts the world's largest armaments (Maersk, CMA CGM, MSC, etc.) as well as port leaders such as APM TERMINALS and EUROGATE. The Tanger Med port forms a network with other ports around the world operated by the same global stakeholders. This development has led to the relocation of the port function outside the city with the launch of the Tanger Med port located 52 km from Tangier. This relocation is due to several causes that are centered on the technological evolution that the world experienced from the year 1950. In fact, the depth of the Tangier city port has become very limited which has created a kind of maladjustment of the infrastructure of the port with the revolution in the maritime transport field. The Tangier city port made many extensions, and with the installation of the industrial port area in 1962 the space became insufficient for one since the space inside the city was quite limited. In this stage the city of Tangier is facing an insuffiency of the port space and the inadequacy of the port infrastructure. The solution was proposed in the 90s by discussing the project of the construction of a port conforming to the international standard outside the city Tanger Med. Its launch in 2007 led to the migration of industrial and commercial activities. The port performance has increased in a very remarkable way thanks to this change so several other industrial and logistics projects appeared within the platform Tanger Med. The port is now a well-ranked hub worldwide. Certainly, this migration has strongly impacted the city positively as well as negatively.

4.3. What about the port tangier city?

As mentioned before, on 15 December 2010, by ministerial decree, the Tangier city Port was closed to commercial vessels. The industrial and fishing port, which includes a free zone, has seen a large part of its activities relocate to the new port Tanger-Med. In the same year exactly in March 2010, it was decided to redevelop the waterfront by initiating a project of reconversion of the port area in Tangier City. The affirmation of a new urban centrality in a logic of reconquering waterfronts, the port of Tangier-city is undergoing a strong restructuring. The main objective of the project is to position the City as a leading international cruise and yachting tourism destination. Its implantation is entrusted to the Development Company for the Reconversion of Tangier city port (SAPT). In order to develop the port activities (yachting, ferry and cruise) and manage the related facilities, the SAPT created in 2012 with the National Ports Agency (ANP) a joint subsidiary called ''Société de Gestion du Port de Tanger Ville'' (by abbreviation 'SGPTV'). Tangier City Port Redevelopment Project is based on two main axes: a port dimension focused on cruising, yachting, fast-ferry and fishing and an urban dimension with a port that opens completely onto the city (AIVP, 2014). The Port covers 160 hectares, including 76 hectares of basin and 84 hectares of land. The main idea is to find a direct link between the Medina and the City in a contact area of 2400 meters from the Kasbah to the beach. The project fits perfectly into the urban landscape of the city. Indeed, the height of new constructions is identical to that of existing constructions, except for a few emergences. The port of Tangier City plans to build a cultural and event space. In addition, the project provides for the development of several public squares in the city that circles the port, present a hotel offer, an offer in shops and entertainment, and a residential offer.

4.4. Waterfront redevelopment project of tangier city port

The redevelopment project, which fits harmoniously into the city's urban landscape, is a unique opportunity to rebuild the city-port relationship. Located in the city center next to the medina, the project presents a drawing of the water front in a unique setting that allows it to integrate harmoniously the city, while keeping the identity of Tangier which reinforces the feeling of belonging among the inhabitants of the city, by creating an image that strongly represents them.

Thus, the waterfront is destined to become a place where one can work, have fun and even from which one can travel while respecting the culture and the authenticity of the place. The waterfront of the port of Tangier is a perfect blend of modernity and authenticity.

4.5. What influence on the city-port relationship?

These changes in port infrastructure in the city of Tangier impacted positively and negatively the port-city relationship. In terms of economic impact, according to the OECD report (Merk, 2013), the port plays a key role in global supply chains as well as facilitating trade between port regions and countries. The ports also bring added value thanks to the economic activities carried out by companies related to the port in our case several national and multinational companies installed in the industrial platform of Tanger Med, which contains the free zone of Tangier (TFZ), Tanger Automotive City (TAC), Tétouan Shore and Tétouan Park. The port creates an economic value linked to employment, on the other hand, the industrial clustering in the port area contributes to the transfer of knowledge and expertise developed through research and development and innovation (Ducruet, C., Mohamed-Chérif, F., Cherfaoui, N., & Zohra Mohamed-Chérif, F., 2011). The port also negatively impacts the city in several aspects; an environmental impact caused by pollution, space consumption, impact on traffic and others. Other impacts can be spotted having a relation to the social, cultural and political sides (M A Pesquera, 1996). Several social challenges (migrant, quality of life, etc.), economic (example of informal vendors), cultural, environmental and political are now facing the city of Tangier as a result of this change (Hall and Jacobs, 2012; Snoussi and Long, 2002).

5. PROPOSAL OF A MODEL

Based on the case study of the city of Tangier and the theoretical models already cited. We propose a model based on Bird's «Anyport» model (1963) which explains the gradual functional and spatial disconnection between the city of Tangier and its ports; a classical theory valid to explain the factors and phases that contributed to the relocation of the port outside the city of Tangier including its implementation its expansion and specialization. But the model is limited to treating the remoteness of port from the city of its functional specialization. Hoyle model 1989 specifies several phases that trace the evolution of the port in time from the medieval period until the 2000s. It allows the understanding of the spatial and functional aspects of the withdrawal of the port from the city of Tangier as well as the redevelopment of its interface. But remains limited at this stage. J. Charlier´s Chrono-spatial model perfectly illustrates the port life cycle of the city of Tangier based on five stages of growth, maturity, obsolescence, abandonment and redevelopment. The advantage of this model is that it is applicable to any port because it does not fix the spatial and temporal framework, but it treats this evolution in a more technical way. The model proposed by Wiegmans and Louw in 2011 that develops the evolutionary model of Norcliffe et al (1996) is relevant as it adds a fourth phase taking into consideration an important element in the evolution of the city-port relationship which is specifically environmental regulation but they do not cover any other issues. Based on this research we propose a model (Figure7) that takes into consideration the step that must follow the redevelopment of the port, which is its "reintegration into the city".

The city must certainly accept this change in the port-city relationship, which means reintegrating the new port. Thus, new aspects and behaviors appear as a result of this change encompassing several sides: political, societal, cultural, and environmental. These changes must respect the identity of the port city of Tangier, improve the quality of life and develop a sense of belonging among the inhabitants of the city also ensure a positive impact, mutual collaboration and uniqueness between the two parties. To achieve this a set of strategies and actions must be implemented.

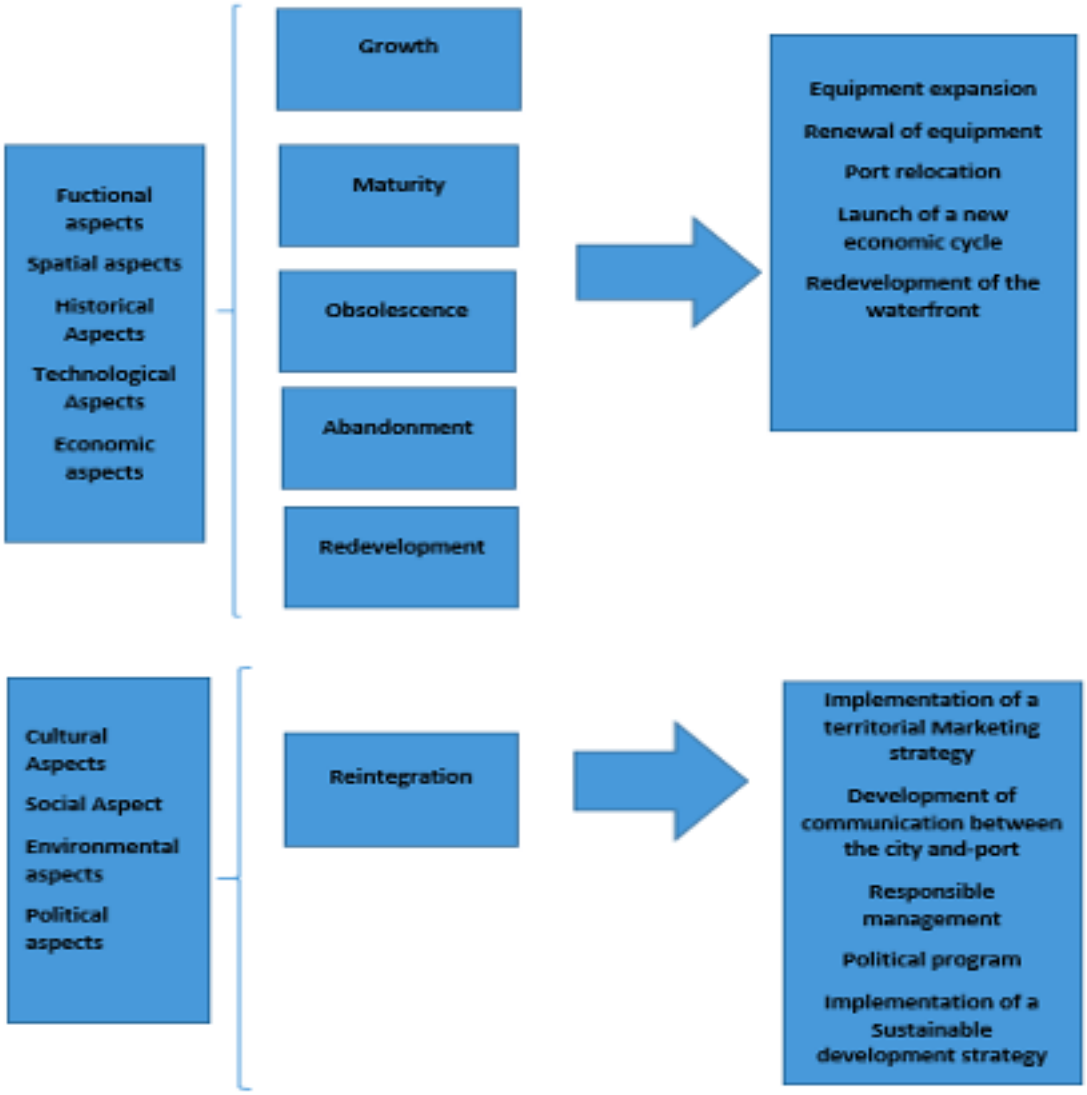


Figure 8: Attempt to develop a theorical model based on the chrono-spatial model of J. Charlier 1992
(Source: Autor)

6. CONCLUSION

The port of Tangier is seeing a very rapid evolution of its activities than before. The main objective of the Tangier City Port Redevelopment Project is to position the city as a leading international cruise and yachting tourism destination. It is structured around two main components: A port component including yachting, cruising, ferry and sea fishing, and an urban component including cultural facilities, public spaces, hotels, a commercial and entertainment area and a real estate pole. On the other hand, the Port Tanger Med is today considered a global logistics hub. The migration of several port activities from Tangier city port to the port of Tanger Med since its creation in 2007 has had a strong impact on the city. These changes gradually caused a city-port split and an absence of link between the two units. At the physical level, the reconversion of water front of the port Tangier city has been able to keep the port identity of the city of Tangier, this thanks to its location in the city center next to the medina (old city of Tangier) and its waterfront design in total integration with the city. Also, its characteristics creating a space of experience with a variation of economic, cultural and recreational activity; a balanced modern model.

The redevelopment of the Port-City interface was based on a link between port city and citizen and took urban functions into consideration with the creation of several open spaces homogenizing the port and city and eliminating the boundaries between the two. These socio-spatial transformations were able to highlight Tangier's identity as a port city and its heritage with a mixture of modernity and history. To fight against the city-port divide, all stakeholders (Lee S.W., Song D.W., Ducruet C, 2008) must be involved in a project to recreate a link between these two units. Citizens, associations, companies, authorities, administrations are all concerned by this project also an attractiveness strategy must be implemented. This will serve as a lever for Tangier´s territory and give a new impetus to the port activities in order to give life to the port. To renew this relationship a common ground between the urban and the port must be found through a good communication strategy between the different stakeholders in a perspective of the social and economic future of the city.

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EFFECTS OF A PANDEMIC ON HUMAN CAPITAL MANAGEMENT: POST-COVID-19 EMPLOYEE MANAGEMENT & DEVELOPMENT

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ABSTRACT

The emergence of the COVID-19 pandemic has resulted in unforeseen changes on how businesses and organizations are being run. In addition, in order to adapt, employers and supervisors have had to rethink how to optimally manage their human resources (HR) while also preparing for possible future sudden crises. This article is a literature review which will be focusing on the most valuable takeaways regarding challenges and opportunities presented to the worlds of employee management and development by the pandemic through the study of various previously documented research into what challenges have been forced onto organizations' human resources management (HRM) practices, the necessary steps taken by HR departments and managers in order to adapt, the arisen opportunities these changes have introduced and how all of these alterations ultimately affect an institution's human capital management (HCM) strategies and methods.

Keywords: *Employee development, Human capital management, Human resources departments, Human resources management, Post-COVID-19*

1. INTRODUCTION

Changes to the professional world occur all the time. Tumultuous changes happen in a frequent rate as well, whether due to financial crises, natural disasters, biological epidemics or a general change in culture. Hence, the need arises for updated methods to cope with unpredictable alterations (Khan et al., 2019). HCM has evolved to a point where it can no longer afford to be just a selection of decisions to make in order to achieve better hiring practices for profit (Swanson and Holton, 2008), but a distinct organizational cultural vision for developing and enabling employees for the greater good. This evolution encourages new and improved methods of employee management and development (Azizi et al., 2021), as well as encouraging employees to partake in activities aimed at their professional improvement and to potentially take on positions of responsibility (Chanana and Sangeeta, 2020). Taking on a more dynamic approach towards employee development is vital in these ever-changing times in order to better cope with fluctuations, variations and struggles encountered in both the business and social spectrums. Having to deal with the new trials posed by the COVID-19 pandemic exposed the unprepared nature of many organizations, institutions and societies (Butterick and Charlwood, 2021), in other words, it exposed the holes and faults in the way work strategies and cultures were laid out. Thus, the need to train employees in the most modern solutions is integral to the survival of any company Post-COVID. This burden of overcoming the many pandemic-caused obstacles lies on both the employers and the employees, especially the HR departments. Whether the development lies in more modified hiring practices, employee growth options or motivational incentives such as promotional openings, the HR department's evolution must contribute to the overall HCM culture of a company or an organization.

The research has shown that the pandemic has introduced a plethora of roadblocks to HR teams. In certain instances, the ability to properly process employee-related tasks and documents was completely halted, while others properly took advantage of the digitalization of responsibilities (Anjum et al., 2022). In other cases, the importance of employee morale was highlighted and prioritized (Azizi et al., 2021). These challenges and the steps taken to overcome them did not come without a positive side to them as they have, for example, forced organizations to become more creative when it comes to their approach to the tasks at hand and to prioritize productivity over plain attendance rates. These results should promote flexibility within the workplace, which naturally leads to a more competent, positive and indeed flexible HCM culture. This flexibility is attained by making HR practices such as workplace education, promotion opportunities and positivity a focal point of a professional environment (Chanana and Sangeeta, 2020). Thus, we see the rise of concepts such as the holistic approach to HRM. The purpose of this article is to present the tried and tested templates of how HR teams have coped with facts such as how previously unaccounted for changes can drastically affect HR, how to learn from each blow sustained during these sudden changes, the measures taken to insure that these negative effects do not happen again, the flexibility adopted in order to adapt to potential future fluctuations, how to extract positive opportunities from drastically negative circumstances and in what way all of these steps taken by HR departments can influence the overall HCM culture to promote organizational intelligence, strength and evolution.

2. METHODOLOGY

This paper is presented in the form of a general literature review, with the purpose of examining the most important literature made on the relationship between the COVID-19 pandemic and HRM and the impact it had. On top of the research available on HR, HRM, HCM and employee development, this study focused on the previously released research on the effects the aforementioned pandemic had on the multitude of HR practices and on the different ways organizations, businesses and employees were affected, as well as for articles highlighting the organizational solutions adopted in order to cope. The search for these articles and studies was done on research databases such as Scopus, Jstor, Google Scholar and Cairn.info with the aid of keywords and terms such as human capital management, HCM, human resources management, HRM, Human resources departments, HR teams, employee development, Post-COVID-19; COVID-19 pandemic and HR solutions, as well as research papers provided by fellow researchers and professional connections. For obvious reasons, articles that study the epidemiological effects of the pandemic were excluded since this is a study focusing on how the pandemic affected the HRM and HCM sides of organizations.

3. FINDINGS

This study indicates that like other crises before it, the COVID-19 pandemic had a varied amount of effects on the professional world. This new normal has obliged a lot of organizations to change and update their HR practices. From job cuts to a significant drop in employee morale (Gigauri, 2020), HR practitioners had to navigate a multitude of obstacles, challenges and dangers in order to not only provide the workplace with the necessary foundation, but also to help the rest of the workforce overcome these hindrances for a healthier and more productive environment, leading to a successful work culture.

3.1. Challenges forced on HR departments by COVID-19

The specific challenges that we are going to explore, which were forced upon HR departments by the COVID-19 pandemic, are the issues of employee morale and motivation, organizational flexibility, employee retention, remote work and staffing.

3.1.1. Employee morale and motivation

The ordeal that was COVID-19 has left some significant lasting marks on different aspects of society. As a result, many businesses have suffered along with their staff, which has taken a toll on many employees. Negative effects such as stress caused by job insecurity have led to an important decrease in workplace loyalty and employees' faith in their companies (Gigauri, 2020). This is where HR teams need to step in and act as a healing mediator to insure that the well-being of the staff is cared for in this new state of the workplace. Employees have started perceiving the workplace through a different lens, hence the importance of retaining and indeed augmenting their morale and motivation. Necessary situational alterations such as remote work, although beneficial, have also resulted in mental health issues for many people (Bailenson, 2021). Maintaining a healthy level of communication with employees is now extremely necessary for HR because of how differently every individual has perceived the drastic changes enforced by the pandemic (Sulaiman et al., 2020). This steady rate of communication can allow HR teams to pinpoint what exactly motivates each individual employee, what drives them, what worries them and what changes if any they'd like to see introduced into their work environment.

3.1.2. Organizational flexibility

The organizational flexibility issue affects both the companies and the employees therein. When it comes to the employees, workplace flexibility is a focal point to those who want to adapt, stand out and survive in a tumultuous economy (Anjum and Zahan, 2021). Being flexible at the workplace does not simply make you a more valuable employee, but also increases your chances for a promotion while decreasing the likelihood of losing your job. As for the companies, flexibility in how to better organize the workforce, delegate tasks and evaluate each individual employee is of the utmost importance (NIU, 2021). A change in HCM culture is necessary in order to achieve the flexibility required for an easily adaptable organization, and including employees in the decision making of these changes is vital to creating a healthy HCM culture (Khan et al., 2019).

3.1.3. Employee retention

The costs that were cut by organizations could have a negative outcome on the workforce when it comes to employee training and development. Not only will it result in unqualified employees, therefore an unqualified organization, but it is also a demotivating factor to the employees if they are not given the chances to evolve and are instead stuck in stagnation (Gigauri, 2020). Taking into consideration an employee's professional path can save a company the costs of turnover (Sanders, 2020). This is where the role of HR departments should lie in introducing these clear and exciting evolutionary, communicative and informative solutions for the staff for a more motivated and more productive workforce (Gaikwad, 2020).

3.1.4. Remote work

Many organizations have adopted the remote work method as a solution to the limitations that were introduced by the COVID-19 pandemic (Hasteer, 2020). This work-from-home culture, although quite beneficial, has created some unintended side effects, chiefly among them is the fact that employees have gotten so used to the remote work method to the point where they now find it both difficult and demoralizing to get back to an office space (Friedman, 2021). Also, there is the problem of a distributed workforce. It will be difficult for HR departments to supervise and administer certain tasks, such as compensation for extra hours, payroll and availability to employees who are working from home (NIU, 2021). Technical issues that can occur while working from a distance is major hole in remote work, as the employee is left to either figure the solutions out for himself or to seek the help of someone who is also communicating from a distance.

Thus, the need for employees to have digitization skills is highlighted (Anjum et al., 2022). The HR departments should also provide its personnel with clear, simple and accessible communication lines so that they can communicate the latest and any information to their colleagues (Sulaiman et al., 2020).

3.1.5. Staffing

Although the repercussions of COVID-19 differ from one organization to another, staffing wise (Giupponi & Landais, 2020), it has still greatly affected how companies and institutions perceive this very important HR element (Campello et al., 2020). Downskilling, the method of prioritizing jobs that require lower skill levels, has been one way for some organizations to deal with the financial woes caused by the pandemic (Campello et al., 2020). Also, many businesses as well as employees have decided a more flexible working relationship in the form of a gig economy, which is the reliance of temporary and freelance jobs, is more suitable for them because of the unstable nature of the job market generated by COVID-19 (Spurk and Straub, 2020). The necessary reliance on virtual solutions for recruiting new staff members although easier (Maurer, 2020), might not be as reliable when it comes to correctly evaluating an individual. Moreover, attracting highly skilled individuals might pose a challenge in both the COVID-19 and post-COVID-19 eras since these high-skill employees are more attracted by jobs and organizations that haven't been too negatively affected by the effects of the pandemic (Ngoc Su et al., 2021). Hence, arises yet again the vital importance of creating an HCM culture, which nurtures motivation and inspires loyalty.

3.2. HR countermeasures against COVID-19

Different methods to combat the encroaching presence of COVID-19 on the job market were undertaken in order to either try to completely eliminate the negative effects of the pandemics, or to hold them back (Azizi et al., 2021).

3.2.1 Working conditions and safety

The use of protective measures and safety equipment, providing said equipment, spreading the awareness of said protective measures and overseeing the whole process were key in insuring that employee productivity did not come at the expense of their well-being (Dennerlein et al., 2020).

3.2.2. Inspiring employees

To battle the morale slope caused by the pandemic, some HR departments provided solutions such employee promotions to give staff members a renewed purpose in the workplace (Chanana and Sangeeta, 2020), rewarding engaging employees instead of further implementing punitive measures (Nangia and Mohsin, 2020) and successfully communicating with the workforce to engender a healthy back and forth dialogue and bilateral decision making (Dennerlein et al., 2020), for a workplace that promotes both mental health as well as mental wealth will not only combat turnover, but also attract potential new recruits.

3.2.3. Flexibility

Providing employees with a more flexible HCM culture with the use of solutions such as remote work and flexible working hours (Gomez et al., 2020), as well as encouraging and harnessing employees' ability to adapt improve by focusing on their development and training and treating it as an essential investment (Cooke et al., 2020).

3.3. Opportunities born out of the COVID-19 situation

Undeniably, the biggest opportunity to emerge out of this crisis has been the possibility of remote work (Ngoc Su et al., 2021). The pandemic has shed a light on the ability to work from home as a vital solution to many businesses and organizations (Aitken-Fox et al., 2020). We can also notice organizations leaning more towards valuing an employee as not only source of income, but also as an ambitious individual with needs, desires and goals. Thus, the growing importance of HRM practices and HCM cultures that adopt holism and spirituality in the workplace when it comes to how to perceive the workforce (McGhee and Grant, 2015; Dent et al., 2005; Ahmed et al., 2016). The decisions made by organizations in order to endure both during and after the pandemic will not only help them survive in the future, but also provide a healthy and practical blueprint for other organizations and business to either follow or learn from (Kraus et al., 2020).

4. DISCUSSION AND CONCLUSION

The findings shed the light on how significantly the COVID-19 pandemic has left its mark on HR. The results show that employees hunger for a new way of managing the human capital inside organizations, instead of just returning to how things were before the pandemic. This latter is seen as an opportunity to learn from the past mistakes, to fill in the gaps and evolve towards a more employee oriented HCM culture (Khan et al., 2019). An important takeaway from our findings is the fact that the digitization of tasks happened so rapidly and how much it has helped, as well as contributed to the digital revolution, but not without cost (Bailenson, 2021). This ordeal is an extremely valuable lesson for HR managers and corporate leaders in understanding how to better approach employee development and management, and how much a healthy and positive workforce is valuable to an organization. Since staff that is cared for and whose needs and motivations are prioritized, will pay the organization back with loyalty, creative ideas, shouldering responsibilities and ultimately with profit. The necessity for both digitization and taking a psychological approach towards HRM practices to nurture a healthier and more efficient HCM culture has become undeniable, and for many this reallocation of managerial interest from mainly profitable to significantly human and social is a positive and exciting beginning for the changes to come.

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CONTEXTUALIZING LISTED MOROCCAN FIRMS' RESILIENCE DURING COVID-19: EVIDENCE FROM A SECTORIAL ANALYSIS

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ABSTRACT

In light of the unprecedented global crisis caused by the COVID-19 pandemic, resilient companies are more likely to survive the crisis's repercussions. More than 11.000 SMEs were bankrupted in Morocco because of the crisis, but not even one listed company has been dissolved in previous years. Moreover, the crisis has been a real opportunity for some industries that emerged during 2020. This scientific contribution aims at determining the main factors explaining the financial resilience of the different listed companies on the Casablanca Stock Exchange between 2020 and 2021. As a result, we detected some resilience factors in this turbulent economic context based on the disclosed financial information's descriptive and analytical examination. Our study highlights that the financial and ICT sectors are the first to overcome the complications of the COVID-19 pandemic due to the vigilant regulation and numerous demanding development projects based entirely on digital technology as a tool for economic performance. Our research is one of the first studies in the Moroccan context to assess the impact of the recent worldwide pandemic on listed firms' resilience. In addition, this study highlights the importance of boosting economic recovery through investing in the digital industry.

Keywords: *Banks, CSE, Financial Performance, Morocco, Resilience*

1. INTRODUCTION

The economic disruptions caused by the "COVID-19" crisis have complicated international markets' financial stability. The need to prevent the coronavirus spread and maintain health systems' efficiency has resulted in a drastic limitation of economic activities. However, several companies nationwide experienced significant financial losses during the lockdown period. However, these companies showed resilience, flexibility, and responsiveness to different contextual changes. An unprecedented crisis in Moroccan stock market history characterized by macroeconomic measures favoring economic recovery and a continuously developing institutional environment constitutes an attractive research field for Moroccan authorities to investigate listed companies' performance determinants under such financial stress. A sequence of incidents in 2020 has created an environment of uncertainty, allowing Moroccan companies to rethink their strategic visions. Managing the crisis requires early intervention by companies to ensure a significant recovery from the pandemic consequences. Certainly, the efforts made by the public authorities have helped mitigate the crisis impacts. Nevertheless, their actions were accompanied by an intense response from listed companies that resisted in the face of large-scale shocks.

This resilience is rooted in the quality of the contributions made by management teams and the favorable financial conditions that sustained the Moroccan economic fabric just after the lockdown phase, which experienced a total Capacity Utilization Rate equal to 47% of total production capacity nationwide. Indeed, investors' spirit of solidarity and confidence revitalized the Moroccan stock market environment as soon as economic activities gradually resumed in June 2020. In the Casablanca Stock Exchange, listed companies' reaction marks a certain resilience that must be analyzed in depth to extract the main mechanisms behind this strategic and financial success. Especially after the high volatility and worrying underperformance at the beginning of the health crisis, which led to a loss of nearly one-third of the banking sector's valuation, in addition to a shares price drop of about -50% for the real estate development sector and -26.2% for MASI index. Despite the efforts of the Moroccan financial authorities, CSE ended 2020 with a -6.7% underperformance. Closing borders in Morocco and the international supply chain's dysfunction did disrupt companies' operating cycles, which have generated a significant systematic risk threatening the financial health of listed companies on the CSE. However, authorities' efforts in revamping the Moroccan stock market to align it with the new conditions of crisis management through the implementation of secure techniques available to all collaborators to operate remotely. Such action has allowed regaining individuals' interest as essential investors in the stock market and consequently consolidated the MASI's performance by an increase of 9.94% at the end of the first semester of 2021. This rigorous in managing this unprecedented pandemic by all stakeholders in the local stock market pushes us to rethink the determining factors of financial performance in times of crisis. The main objective of this scientific contribution is to determine the reaction of all listed sectors to coronavirus's macroeconomic shock waves by mobilizing a descriptive analysis of a set of financial indicators. All of this is part of an analytical perspective that aims to determine the success factors of the different companies on the Moroccan stock market.

2. LITERATURE REVIEW

In this section, we will discuss the empirical links between research on the listed companies' resilience and the COVID-19 pandemic. Our first research action is schematizing the relationship between financial performance and research on COVID-19 using the scientific tool VOSviewer, by implementing the Scopus database and taking into account the abstracts and keywords of all 496 extracted documents. We found that related academic research tended to focus only on topics with financial dimensions. However, resilience has been associated with topics dealing with risk management, business sustainability, and the COVID-19 pandemic. According to the figure below, most studies published during 2020-2021 on the coronavirus in management sciences have dealt with financial performance, corporate social responsibility, corporate governance, and bitcoin, among other topics. In contrast, few studies have analyzed financial resilience's determinants of listed companies during the coronavirus health crisis. Hence, we need to explore this topic, which was neglected in our bibliographic sample.

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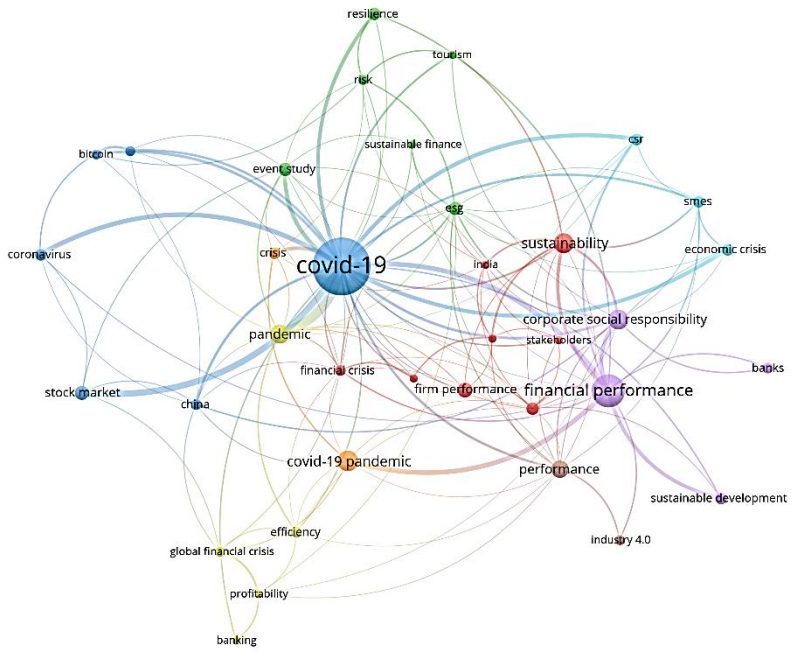

Figure 1: Mapping research on Covid-19 in management sciences
(Source: Authors' construction)

3. CORPORATE RESILIENCE AND FINANCIAL PERFORMANCE

Resilience is an interdisciplinary subject with polysemic theoretical underpinnings. Adopting this same logic, Iftikhar et al. (2021) proposed a theoretical model for research on business resilience, considering it as a performance determinant. In other words, they attempted to measure corporate resilience's effects on firms' financial and non-financial performance by integrating several dimensions, namely, organizational capacity, flexibility, supply chain management, and many other moderating elements. Furthermore, crisis management aims at developing strategies that increase the companies' resilience and maintain organizational structure stability during crisis times (Lampel et al., 2014). The literature review shows that resilience can be associated with a range of concepts (*i.e.*, longevity, coping with the unexpected, surviving crises, absorbing shocks, responding to environmental challenges, and ensuring the firm's financial stability). Theoretically, a firm's financial aspects are the most representative dimension of a company's situation during a COVID-19 pandemic due to the quality of the financial communication process of Moroccan listed companies, which significantly impacts investors' behavior. As an indication, Larioui (2021) points out that Moroccan family businesses tended to resort to family funds in order to fulfill the financing gap caused by the financial charges' increase, which was systematically generated by the decline of almost 70% of their portfolios and more than 50% of these companies' turnover sales during 2020. Several studies have highlighted the importance of analyzing the role of resilience in maintaining corporate financial performance sustainability (Abeysekara et al., 2019; Ali and Gölgeci, 2019; Yu et al., 2019). Considering the mixed impacts of resilience on performance, further exploration of this relationship is needed. A recent study conducted by Gölgeci and Kuivalainen (2020) on 265 Turkish companies indicates that firms that cannot maintain business stability during crises risk deterioration in their stock prices, market shares, and thus performance. Indeed, according to Birkie et al. (2017), the resource dependency theory predicts that organizational resilience allows firms to integrate and transform internal and external resources, enabling them to improve their responsiveness to economic disruptions and consequently create value by ensuring sustainable development performance.

In contrast, Jüttner et al. (2003) believe that the investments deployed to be resilient in crises could compromise financial performance when they are not adequately managed or contribute to slow responses after crises, leading to performance deterioration (Li et al., 2017). In light of the current pandemic, several studies have examined and measured these implications on corporate financial performance (Al-Kharusi and Murthy, 2020; Atayah et al., 2021; Ball, 2020; Nguyen et al., 2021; Vogel, 2020; Weaver, 2020). For instance, the financial industry and mainly banks' financial performance has been strongly impacted by the COVID-19 because of loan demand decline and risk amplification during these difficult economic circumstances worldwide (Alami and El Idrissi, 2021; Elnahass et al., 2021; Li et al., 2020). Another explanatory factor for strong resilience is the resistance culture, which may differ in performance management strategies (Iftikhar et al., 2021). Similarly, other determinants such as the governance structure and the quality of the regulatory and institutional system can explain a company's reaction to a crisis. Generally, the contextual and cultural specificities intrinsic to each company certainly impact the outputs of its resilience strategy on financial performance.

4. CONTEXTUALIZING CSE's OVERALL LANDSCAPE

Beyond the economic repercussions of COVID-19, financial markets were also heavily impacted due to the immense economic costs generated by the pandemic (Goodell, 2020). Although the existing literature recognizes the impacts of pandemics on stock market performance, the COVID-19 shocks are distinctive. Notably, the coronavirus pandemic differs from other epidemics due to its high contagiousness, triggering uncertainty in the real economy and financial markets (Albulescu, 2020). The following table summarises the evolution of sectors' capitalization during the COVID-19 propagation.

Capitalization	Jan-20	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Var in %
Telecom	136699.3	111645.1	122194.3	119557	127468.8	122370.1	120436.1	124743.6	-8.75%
Finance	260157	201401.9	195498.2	194357.1	223474.5	226051.1	240135.2	258486.3	-0.64%
Real Estate	75996.58	55081.47	58005.08	56755.15	72032.07	73368.33	82494.36	91100.92	19.88%
Industry	118978.7	93308.62	101686.1	103002.2	112104.8	122150.9	135556.8	141351.2	18.80%
ICT	4911.98	4171	5386.01	5558.67	6980.98	7136.06	7403.99	8018.77	63.25%
Services	40255.33	31033.88	34734.17	32664.31	36349.48	36895.54	42249.15	45609.85	13.30%
Holdings	3419.41	2678.35	2670.8	2751.52	3099.63	2935.69	2849.6	2867.48	-16.14%
CSE	**640418.4**	**499320.3**	**520174.6**	**514645.9**	**581510.2**	**590907.6**	**631125.1**	**672178.2**	**4.96%**

Table 1: Sectorial capitalization (in million dirhams)
(Source: authors' construction and CSE's Monthly Statistics)

A preliminary capitalization fluctuation assessment between January 2020 and September 2021 indicates a relative growth of about 4.96% for the overall capitalization, while the Casablanca Stock Exchange has lost nearly -6.66% in terms of capitalization between 2019 and 2020. However, the general landscape can be divided into two subgroups, companies that have benefited from the current crisis, such as the ICT sector, the Real Estate sector, the industrial sector, and the service sector, respectively, 63.25%, 19.88%, 18.80%, and 13.30%. Conversely, several operators have lost their positions, including Holdings (-16.14%), the telecommunications sector (-8.75%), and the financial sector (-0.64%). It should be noted that the capitalization of the banking sector has fallen by -1.11% since the 2nd of March 2020. In comparison, insurance companies benefited from a 6.27% increase during the same period.

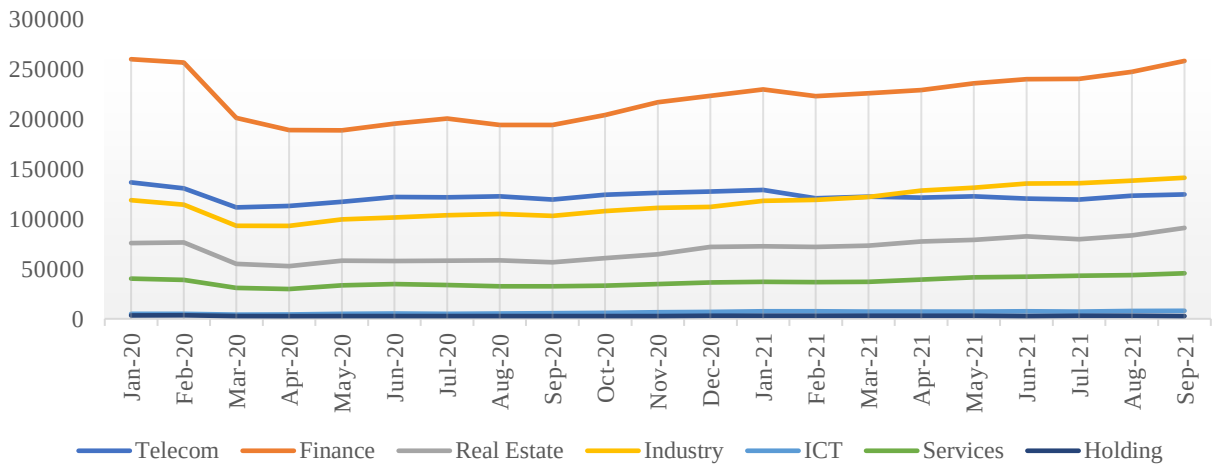

Figure 2: Sectorial capitalization (in million dirhams)
(Source: authors' construction and CSE's Monthly Statistics)

The figure above shows that CSE's sectorial capitalization could be classified into three transitional phases. The first refers to the recession phase of the stock market values between January 2020 and April 2020. The second phase is the stagnation of the Moroccan stock market, mainly after the continued interventions of the capital market regulatory authorities. The third phase can be considered a recovery and growth phase.

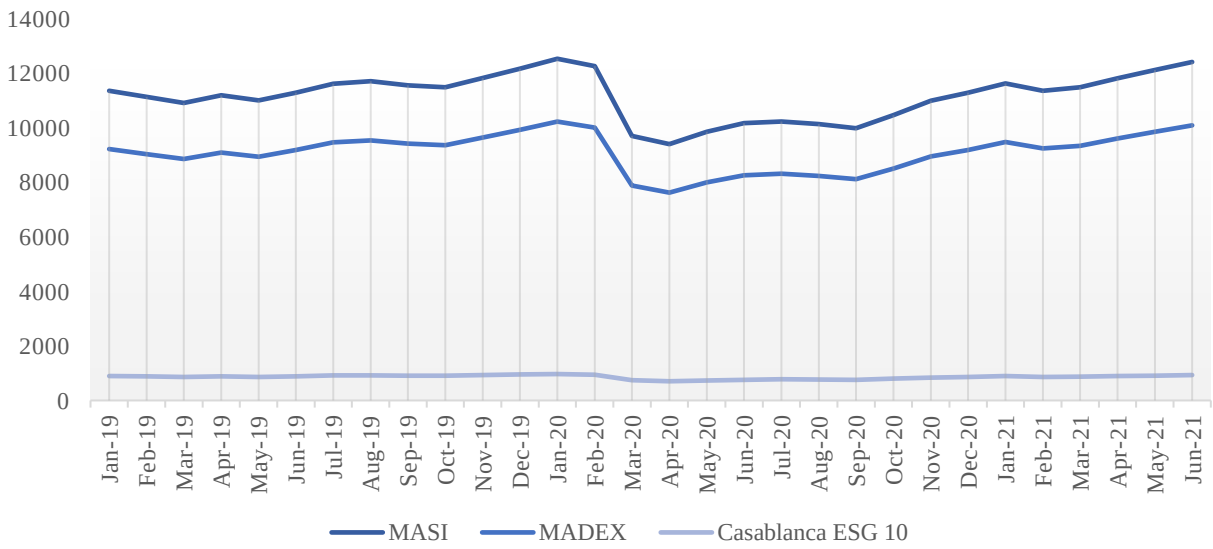

Figure 3: CSE's principal indexes (in dirhams)
(Source: authors' construction and CSE's Monthly Statistics)

Figure 3 shows the evolution of the leading indexes of the Moroccan stock market between 2019 and 2021. These indexes have started to resume their evolutionary trend during 2020. Thus, the COVID-19 pandemic has created a gap of almost a year in the development path of the Moroccan financial market. Similarly, the Central market's volume has grown by +5.79%, contrary to the Block market, which has lost nearly 40.63% compared to 2019. Similarly, the number of securities traded rose by 11.59% in the Central market, while it dropped by 52.21% in the Block market. The crisis duly impacted the entire Arab region, not only Morocco. The following table summarises all stock exchanges' financial information in the Arab region.

	Market CAP 2019 USD	Value of Shares traded 2019	Market CAP 2020 USD	Value of Shares traded 2020	Liquidity ratio 2020
Saudi Stock Exchange (Tadawul)	2406780	234700	2427150	556747	30.80%
Qatar Stock Exchange	159656	18549	165439	29061	20.10%
Abu Dhabi Securities Exchange	144520	15461	202201	19815	9.80%
Boursa Kuwait	116515	39047	105876	35451	47.60%
Dubai Financial Market	102521	14448	92880	17867	41.40%
Casablanca Stock Exchange	**65327**	**6033**	**65624**	**5485**	**9.00%**
Muscat Securities Market	48744	1719	52644	1147	5.90%
The Egyptian Exchange	44152	25541	41422	43909	48.30%
Bahrain Bourse	27769	760	24608	566	3.20%
Amman Stock Exchange	21036	2236	18206	1479	102.80%
Iraq Stock Exchange	9718	237	11695	275	1.30%
Tunis Stock Exchange	8486	475	8639	524	10.00%
Beirut Stock Exchange	7759	902	6724	243	2.60%
Palestine Exchange	3758	274	3447	190	3.80%
Damascus Securities Exchange	2422	75	2822	43	1.50%
Khartoum Stock Exchange	1309	29	1381	312	6.20%
Total	**3170471**	**360485**	**3230757**	**713113**	

Table 2: CSE's position in the Arab Region landscape
(Source: The Arab Federation of Capital Markets - Annual report of 2020)

The international economic instability behind the coronavirus has changed CSE's investor structure. Indeed, minority foreign investors who hold less than 25% shares in each listed Moroccan company have sold nearly 18.27% of their portfolios. Only those who hold stakes above 75% in CSE's capitalization have consolidated their presence by moving from an average holding rate of 85.50% at the end of 2019 to 85.67% in 2020. The foreign investment represents less than 25% of the market capitalization for fifty companies, including forty-five for less than 10%. In addition, the Moroccan stock market landscape is characterized by the presence of 17.07% of investors from Middle Eastern countries, a surplus of +2.85% YoY. According to the Moroccan Capital Market Authority (*i.e.*, AMMC in french), foreign investors could be considered the primary transaction's sources in the following sub-sectors, Banks, Telecommunications, and Agribusiness by 11%, 35%, and 14%. It should be noted that these sub-sectors account for more than 67% of CSE's overall transaction volume in 2020.

Figure following on the next page

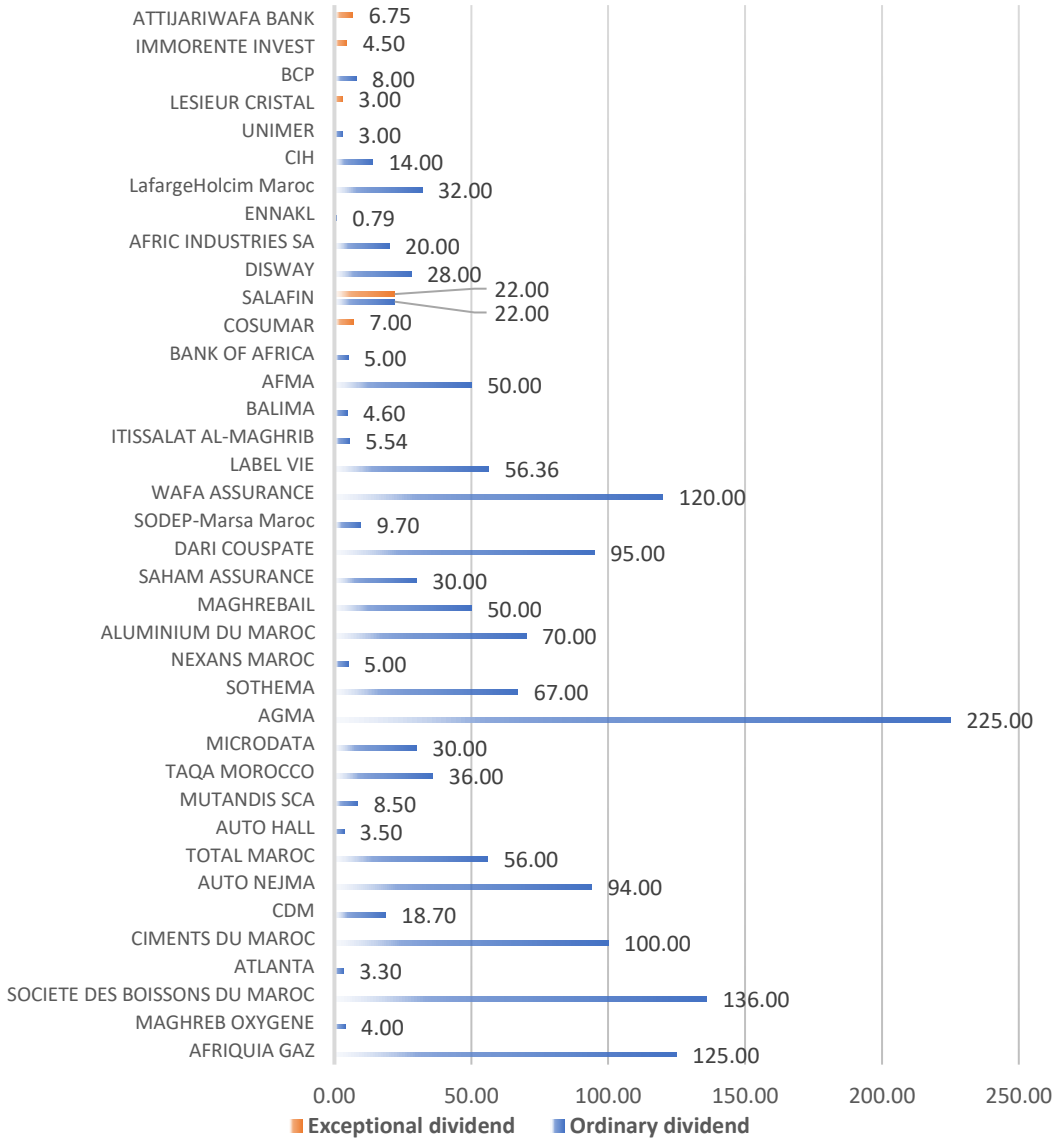

Figure 4: Dividend distribution in 2020 (in dirhams)
(Source: authors' construction and CSE's Monthly Statistics)

Despite the turbulent context in 2020, listed Moroccan companies started to pay dividends to their shareholders on the 21st of April 2020. It is noteworthy to mention that most dividends were paid during July 2020. At the same time, some operators have called for the conversion of dividends into shares to maintain the firm's financial health, mainly to keep the cash flow in good liquidity conditions.

5. LISTED SECTORS' RESILIENCE

This section presents the profitability determinants of the listed sectors during the coronavirus period.

5.1. Telecommunication sector

One of the most booming sectors in Morocco. It contributes significantly to the constant improvement of the national internationalization strategy in terms of exploring new countries in the African region. Since the Subprime crisis, the financial profitability of this sector has fallen sharply, from 50% in 2008 to 18% in 2019.

A rate considered low compared to the average business conditions of the Moroccan telecommunication giant. Before the coronavirus outbreak, the National Telecommunications Regulatory Agency (*e.i.,* ANRT in french) imposed a fine of 10% on Maroc Telecom's 2018 revenues, or an amount due of nearly 3.6 billion dirhams, relating mainly to its practices deemed anti-competitive on the domestic market. In terms of market capitalization, IAM's share price has been stable since the end of Q2 2020. In 2020, Maroc Telecom Group achieved a significant revenue of 36.769 billion dirhams despite the coronavirus crisis, an increase of 0.7% compared to 2019. One of the reasons behind this financial profitability is the excess revenue generated by the subsidiary Moov Africa and broadband in Morocco. Moreover, this financial performance has enabled the group to absorb all local competition. In addition, the operator IAM is the major contributor to the "COVID-19" Fund with a total envelope of 1.5 billion dirhams. Such solidarity action largely explains the group's weak financial performance during the first half of 2020. On a yearly basis, the group's net result improved by 43.6% at the end of June 2021. On the other hand, the operating expenses expressed as a percentage of the turnover have slightly regressed after a year of recovering economic activities in Morocco. Indeed, the purchases decreased by -0.3%, and the operating allocations constituted nearly 21.4% of the company's sales during the first half of 2021, whereas they occupied only 4.1% during the same period last year. On the other hand, personnel expenses represented 8.6% of group revenues, a considerable increase compared to the 8% during Q2 2020. This increase is explained by the full recovery of business activities worldwide, which enhanced the company's operating income by 46.01% during 2021, without forgetting to mention the consolidated operating expenses decrease. It is noteworthy that Maroc Telecom has the highest operating margin in the local stock market, with a margin of 31.3% at the end of Q2 2021. Generally, the achieved results by IAM are at the origin of an international investment strategy that weighs heavily on their financial resources. Indeed, the debt ratio has climbed exponentially from 35.3% on average between 2007 and 2010 to 114% in 2019 before falling to 105.6% in 2020. By analyzing IAM's experience during the crisis, we can conclude that the diversification of activities on an international scale can ensure a certain financial resilience.

5.2. Industrial sector

This sector comprises seven sub-sectors of activity. The following table summarizes the financial and stock market information of the various components of the listed industrial sector.

Table following on the next page

		Sales Revenues		Operating Income		Net Income		Capitalization	
(End of period)		Q2 2020	Q2 2021	Q2 2020	Q2 2021	Q2 2020	Q2 2021	Q1 2020	Q3 2021
BAVERAGES	OUL	629.7	742.8	-29	13.6	-76.1	-24.9	2591.82	2286.9
	SBM	877.3	1007.1	116.1	171.8	32.9	108.4	6610.07	7473.11
FOOD PRODUCERS & PROCESSORS	CDA	2281	2130	-10	-45	-37	-88	5652	4888.98
	CSR	4259.8	4382	692.7	701.8	366.6	477.3	16535.25	25983.96
	DARI	329.1	345.1	47.5	50.9	31.7	32.9	972.7	1208.42
	LES	2067	2366	143	115	63	44	3592.1	5168.47
	UMR	482.6	390.3	24.5	-15.9	-16.1	-53	1826.22	1455.27
	MUT	682.7	689.2	58.3	54.6	32.9	27.6	591.96	773.65
CHIMECALS	COL	175.5	268.1	-5.1	19.4	-10.2	12.1	1487.39	2079.15
	SNP	403.7	517	56.1	89.5	23.7	46.4	1026	1752
PHARMACEUTICAL INDUSTRY	PRO	256.3	299.4	33.2	45.8	19.2	31.6	825	1180
	SOT	830.6	972.7	183.1	198.1	111.9	130.9	2862	10440
MINING	MNG	2378.5	3011.2	278.5	183	98.3	184.8	4686.42	15366.63
	CMT	189.5	190.6	54.1	63.8	41.6	54.4	1856.08	2807.66
	REB	-	-	-0.2	-0.2	-0.9	-1.1	20.12	17.65
	SMI	439.8	296.3	59.3	-79.4	60.6	-76.9	2467.64	2538.37
ENERGY	GAZ	2958.6	3458.9	65.3	485.9	48.1	319.2	12938.75	15812.5
	MOX	110.7	129.1	1.1	11.8	2.7	10.2	156.81	197.84
	TQM	4016.4	3464.9	1100.2	1076.5	428.5	443.6	18752.89	24249.02
	TOT	4433	5562.4	96.1	558.3	68.5	361	7540.74	15169.28
ELECTRONICS	NEX	886.4	1063.6	46.2	79.1	14.2	49.2	271.47	435.24
FORESTRY & PAPER	MDP	23	33.1	-6	-2.5	-7.9	-3.7	45.19	67.12

Table 3: Financial information on the Moroccan industrial sector in millions (Source: CGD Capital Insight, 2021)

On the Moroccan stock market scale, the industry sector has become the second-largest capitalization after the financial sector, overtaking the Telecom sector in March 2021. Regarding financial profitability, the Energy sub-sector expects positive results after activity recovery. Indeed, this sector has experienced an increase in overall revenues of about 9.52%, mainly related to the growth of Africa Gaz's and Total Maroc's revenues, which is the direct result of the soaring prices of energy products internationally. As a result of this business performance, these companies have achieved significant net results, allowing the industry sector to increase its overall net result by 61% between Q2 2020 and Q2 2021. According to our calculation, the industrial sector's debt has fallen from 57.2% at the end of Q2 2020 to 53% in Q2 2021. With an operating margin of 12.1% at the end of June 2021, the industrial sector has absorbed the shock waves of the COVID-19 pandemic, owing to its heterogeneity (*i.e.*, the companies Med Paper, Unimer, SMI, Centrale Danone, and Oulmes are loss-making, while the other companies fully recovered from the crisis). Pharmaceutical companies took advantage of investors' confidence during COVID-19 to develop their stock market position, going from a capitalization equal to 3687 million dirhams to 11620 million dirhams (*i.e.*, an increase of 215.16% between March 2020 and September 2021). Despite the collapse of the two companies' results, Unimer and Centrale Danone, the agri-food or food producers and processors sub-sector has remained resilient in this financial crisis. Indeed, the operating profit of the agri-food industry has increased by 25.6% between Q2 2020 and Q2 2021. This can be explained by the high performance of Leusieur's and Cosumar's exporting activities. However, the operating result of Leusieur has dropped by -28% due to a nonsignificant correlation between the commodity material's increasing prices and the company's sales prices. The variety of metals explains the heterogeneity of the mining sector's results. Generally, this industrial category is still in a recovery path or a resilience phase. Indeed, the Managem group saw its half-yearly net result increase by 87.99% yearly, due to the development of gold production

activities, mainly in Sudan. However, the change in household consumption habits caused by the generated panic of the COVID-19 pandemic, which has heavily impacted the purchasing power of a large segment of Moroccan citizens, has negatively affected the Beverages sub-sector. Indeed, this sector has lost 15.3% of its revenues during the first semester of 2020, while the SBM company has witnessed its half-yearly net result for 2021 improve by almost 230% yearly.

5.3. Real Estate sector

This sector presents several sub-sectors' economic and industrial activities, including companies operating in real estate, capital goods, industrial engineering, and construction materials. Indeed, after the coronavirus-induced stock market crash, the construction sector has marked a significant recovery from a capitalization of 55.081 billion dirhams in Q1 2020 to a capitalization of 91.101 billion dirhams in Q3 2021, an increase of 65.39%. In comparison, a historical analysis of this sector's performance informs on the low profitability noticed in recent years compared to other sectors (*i.e.*, 10% in 2019), mainly after 2011 due to the collapse of demand for housing and infrastructure projects, knowing that in 2008 the ROE was around 27%. Authorities' efforts in recapitalization and cleaning up the balance sheet structure were translated to a recovery in 2015 by appealing to shareholders via equity reinforcement and repaying companies' bank debt. These measures were introduced to compensate for the massive debt financing. In addition, listed real estate developers adopted cash-flow generation plans in 2015. Regarding the current state of gearing, the construction sector is characterized by a debt/equity ratio of 42.7% at the end of June 2021, compared with a debt/equity ratio of 42.1% during the first half of 2020. The outbreak of the COVID-19 pandemic has severely impacted industrial activities in Morocco. Moreover, the Capacity Utilization Rate was 47% in April 2020, a worrying but reasonable rate given the lockdown measures practiced during Q2 2020. With the easing of measures recommended by the Economic Monitoring Committee, this sector has achieved a significant recovery in sales revenues of around 27%. Similarly, this sector has benefited from the strong appreciation of sales prices in the Steel sub-sector. Furthermore, we find that the group SONASID has experienced an operating income improvement of 94 million dirhams during the first half of 2021. Also, the group's sales turnover has improved from 1.207 billion dirhams to 2.045 billion dirhams (*i.e.*, 69% yearly). Generally, the group has achieved a significant financial performance after a year of restarting activities, with a consolidated half-year net result of 47 million dirhams against -43 million dirhams in 2020. In addition, this sector's financial resilience is due to LafargeHolcim's performance, which has achieved a result of 1038.674 million dirhams for the first half of 2021, driven by the increase in cement sales that has enabled the group to achieve a turnover of nearly 4 billion dirhams, an increase of 25.6% YoY. Similarly, the construction sector's position in the local stock market has improved significantly after the 28% capitalization drop between February and March 2020. Indeed, this sector has achieved an increase in terms of capitalization of about 19.88%, as shown in the first table. Aradei Capital's IPO in December 2020 has improved the overall statistics of this sector.

5.4. Information & Communication Technology sector

This sector has shown some resilience during the COVID-19 pandemic. Indeed, the market capitalization of this sector almost doubled (*i.e.*, 92.25%) between Q1 2020 and Q3 2021. In terms of financial profitability, statistics show that this sector has marked significant achievements during the health crisis due to the high demand for computer equipment. All sectors adopted a digitalization strategy to comply with social distancing rules. Moreover, electronic transactions have continued their evolutionary trend, even exponentially, mainly after developing the e-Commerce market in Morocco in 2020.

Regarding financial indicators, the sector's operating margin plummeted to 10.6% in Q2 2021 from 11% a year earlier. Similarly, the sector's overall net income dropped by -6.12%. Economic activities suspension and limiting citizens' mobility capacities to contain COVID-19's propagation impacted this sector's firms' maintenance and computer installation activities. Consequently, this situation has negatively impacted this sector's overall turnover by -1.26% between Q2 2019 and Q2 2020, before recovering in Q2 2021 (+4.66%).

5.5. Services sector

This sector's sales were severely impacted by the coronavirus crisis in 2020. However, overall sales increased by 19.09% at the end of June 2021, mainly due to higher sales of Auto-Hall and Ennakl. In addition, the operating margin improved to 7.6% as a percentage of revenues, compared with 5.1% a year earlier. In addition, personnel expenses decreased from 9.7% of revenues in Q2 2020 to 8.8% in Q2 2021. The operating result of the Automotive sub-sector increased by nearly 400 million dirhams between S1 2020 and S1 2021 to reach 520.2 million dirhams, benefiting from the car sales' dynamism after activities recovery earlier 2021. It is the only sector that experienced a rise in gearing ratio between Q4 2020 and Q2 2021, with a surplus of +3.8%. However, this increase concerns the transport sector, which has mitigated the decline in overall net debt with 516 million dirhams. Indeed, Marsa Maroc has seen its debt increase by 494 million to 1.2 billion dirhams. In terms of capitalization, this sector has been able to absorb the coronavirus's shock waves, increasing 46.69%, from 31.034 billion dirhams in March 2020 to 45.609 billion dirhams in September 2021. It is worth noting that tourism activity has lost 39.4% of its stock market performance during the first half of 2020. In addition, RISMA suffered a 49.07% drop in capitalization between January and May 2020.

5.6. Holdings

Contrary to the other sectors that continued their upward trend in capitalization. The two groups representing this sector in the Moroccan stock market, namely, Delta Holding SA and Zellidja SA, have experienced a capitalization decrease as of December 2020, after recovering around 15.72% following the 21.67% drop due to the COVID-19 in March 2020. The analysis of the financial situation of the two groups shows that they are facing difficulties in terms of accounting results, mainly the company Zellidja. The company's results in 2020 were severely impacted by the recognition of an impairment provision for equity securities following the revaluation of the portfolio of securities held after the stock market crisis in March 2020. Generally, the positive results of the companies forming the portfolio of Zellidja have had a positive effect on the consolidated result of the Holding in S1 2021. It is worth mentioning that this Zdllidja holds shares in Rebab Company, which has been strongly affected by the current crisis. The improvement of the Holding's turnover (49.16% compared to the same period in 2020) is primarily explained by the commercial dynamics of the company's subsidiaries. In addition, operating expenses expressed as revenues have increased from 5.6% to 5% at the end of June 2021. In addition, personnel costs have fallen relatively, from 14.5% of revenues to 14.2% at the end of June 2021. However, the debt ratio decreased significantly from 22.4% to 17.5% due to the improved net cash position, which was achieved through efforts to collect and optimize working capital. It is necessary to gather more clues to judge this sector's resilience. However, all financial information indicates that it is on the right path to economic recovery.

5.7. Financial industry

A first analysis of the financial achievements of the listed insurance companies during 2020 based on their consolidated accounts reveals a substantial decrease in the results in the order of 6.4%, which reflects the bad commercial conditions generated by the advent of the COVID-19 crisis.

Indeed, the sector's overall turnover decline in 2020 is caused by life insurance revenues disruption. The decline in savings was mitigated by the breakthrough of units of account in European countries. However, the insurance sub-sector has achieved a significant business performance of +8.93% in turnover in S1 2021. In addition, the stock market performance of insurance companies to +34.01% in terms of capitalization between March 2020 and September 2021, knowing that the period between February 2020 and September 2021 marks a capitalization increase of +5.08%. Confronted with a severe wave of economic disruptions, from the acceleration of outstanding debts, low-interest rates, deceleration of loan supply, and banking liquidity problems, the banking system, mainly the listed one, has shown remarkable resilience. Indeed, the government's efforts in terms of granting loans, reaching a volume of 53 billion dirhams in 2020, have allowed banks to achieve a loan distribution rate quite significant, CIH (+20.9%), BOA (+8.7%) and ATW (+4%). These efforts have improved the interest margin (+3.4%) to reach 23.1 billion dirhams in 2020. However, the BCP Bank has witnessed a decrease of -5.3% in customer receivables during 2020. It should be noted that the outperformance of the CIH bank is due primarily to its customers' diversification strategy practiced in the five years before the pandemic. The analysis of banks' profitability shows a decline in the net banking income of -2% to 36.1 billion dirhams at the end of 2020. This decline is explained by the increase in the cost of risk (+81.9% in comparison to 2019) and by banking activities deterioration. In addition, performance ratios dropped significantly during 2020 (*e.g.*, the ROA is 0.6% instead of 1% in 2019). Similarly, ROE is 5.1% compared to 10.4% in 2019, resulting directly from listed banks' net results deterioration. However, the overall listed banks' net income has improved in S1 2021 by nearly 122% YoY (*i.e.*, 6.151 billion dirhams). Regarding the stock market performance, banks, after capitalization's decline of -21.8% in March 2020, have achieved a +28.69% in Q3 2021. Generally, this sector is resilient due to the prudential regulations that have allowed banks to improve their equity over the past ten years. In addition, Bank Al-Maghrib's measures regarding dividend distribution and cost optimization positively impacted banks' crisis management strategy. For financial companies, profitability ratios show signs of resilience in Q2 2021. Indeed, these companies' sales were improved by 2.71% YoY, which boosted this sub-sector's net incomes (+125.55% in S1 2021). Indeed, the financial sector's operating margin increased from 12.30% to 28.20% in a single year after the recovery of economic activities in June 2020. The generated loan dynamism by the automotive sector is the first factor behind the success of the post-crisis phase for financial companies, mainly for the company EQDOM, which achieved production of car loans that exceeds that of June 2020 by +86%, and an improvement of +28% in personal loans compared to the year of the crisis. In addition, SALAFIN confirms that the primary source of the company's financial performance during the first half of 2021 is the improvement of automotive financing results (+60%) and personal loans (+41%). Not to mention the decrease in net allocations to provisions for the year 2021. On a national scale, financing companies experienced capitalization stagnation after the second quarter of 2020 (*i.e.*, a performance of 0.1% between March 2020 and September 202, after the decline of -12.87% in March 2020).

6. CONCLUSION

This scientific contribution aims to determine the financial resilience factors of the different listed companies on the Casablanca Stock Exchange after the COVID-19 pandemic. In a turbulent worldwide context, the CSE has shown a certain resilience compared to other stock exchanges in the Arab region. Our study is based on a descriptive analysis of the stock market's and financial indicators' evolution of all listed firms on the Casablanca Stock Exchange during the COVID-19 pandemic.

According to our analysis, we can list the following findings:

- The telecommunications sector appears to be resilient despite the global economic turmoil, thanks to the strategy of diversifying services throughout the African region. Indeed, the new national development model is essentially based on the assumption of the multitude of telecom operators on a national scale, which may penalize the IAM's market shares, mainly because historical evidence confirms that strong competition can damage the results of the Moroccan telecommunications giant. Therefore, exploring and developing new markets outside Morocco is necessary to ensure IAM's financial sustainability.
- Even before the health pandemic, the construction sector suffered from complex problems with the financial health of companies operating in the real estate sub-sector. High gearing ratios pushed the authorities to intervene in 2015 to help clean up the balance sheet structures of these entities. Overall, the sector is resilient but still in a recovery phase, with growing cement sales and calls for public investment projects under the diversified project layout of the new development model.
- The industrial sector's resilience is due to activities' heterogeneity. Indeed, some sub-sectors, such as the agri-food business, mining, and others, succeeded after the crisis. However, the beverage sector and Med Paper are suffering from the dire economic conditions we are traversing today because of the pandemic.
- Since digitalization is at the heart of the new development model, the ICT sector is vital for the Moroccan economy. The resilience of this sector is highly remarkable thanks to the high demand for IT equipment by a range of sectors, which adopted a digitalization strategy to implement the social distancing recommendations required by the government.
- The coronavirus crisis has strongly impacted holdings and the service sector. However, reading their financial statements shows that they can generate growth in the medium term.
- The financial sector's resilience, mainly the banking sector, is due to the intense supervision of the monetary authorities and the prudential regulations that have allowed the sector to develop a solid operational structure that can cope with such exogenous shocks.

Finally, our study is part of an attempt to determine the financial resilience factors of listed companies. This contribution constitutes the starting point for an in-depth study of each segment of the Casablanca Stock Exchange.

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THE MEASUREMENT OF BANK EFFICIENCY

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ABSTRACT

This paper provides a review of several methods that have been used in the literature to measure bank efficiency. Financial analysis is one of the known methods. It is a traditional approach that relies mainly on studying the summary statements, the analysis of the accounting accounts as well as the calculation of the ratios to have a general idea of the firm's performance. However, this method has several limitations related to its inability to take into consideration intangible qualities of the company. These qualities may result from the structure of the company itself, circumstances related to the sector or the country's economic indicators. The review of the literature on approaches used to measure banking efficiency highlights that data envelopment analysis (DEA) and stochastic frontier analysis (SFA) are the predominant methods used in many empirical studies. The two approaches can be complementary in providing additional performance information. Sometimes researchers use both methods to compare results. However, the choice between the approaches may be necessary depending on the availability of information and the objectives that should be attained. The SFA (parametric) method requires a large sample size for the econometric technique to be well applied, whereas the DEA method does not require any particular assumptions since the frontier is determined by the data. Nevertheless, no study has proven the superiority of one method over the other. Each method has its advantages and limitations and must be used according to the data considerations and the individual preference.

Keywords: *Bank efficiency, Banking performance, Data envelopment analysis, Stochastic frontier analysis*

1. INTRODUCTION

The importance of measuring efficiency in the financial sector is related to the extremely far-reaching implications that an efficient financial system has at both the microeconomic and macroeconomic levels. The purpose of this article is twofold. On one hand, it will highlight the term efficiency and its dimensions. On the other hand, it will look at the main methods of its measurement in the banking sector. To respond to these objectives, we will begin by presenting the different dimensions of the concept of efficiency. Then, we will explore its different types: technical, allocative and scale efficiency. Finally, we will review the main frontier methods that can be used to measure banking efficiency.

2. PERFORMANCE, EFFECTIVENESS AND EFFICIENCY:

Before considering the measurement question, it is necessary to look at the definition or at least to clarify what is meant by performance. Problems of defining the concept are at the root of the evaluation difficulties.

2.1. The concept of performance

Performance is a commonly used concept in the management sciences. The aim of many projects revolves around defining this concept, specifying its dimensions, determining its various measurement methods, and identifying the parameters that affect this performance. However, this concept remains a vague, blurry and polysemic term that is difficult to define. Basically, it is important to mention the multidisciplinarity of the concept of performance. It is not reserved to management sciences only, but belongs to a variety of disciplines (economics, sociology, linguistics, sports, art, philosophy, politics, etc.). Performance has its origins in Latin: "performare" and in English in the 15th century and means to carry out, to accomplish something in a suitable manner. P. Lorino (1997) defines performance as everything that contributes to achieve strategic objectives. J.-B. Carriere (1999) concludes that performance is nothing more than the evolution of the firm or its growth. This notion of performance can be summed up in the idea of the success of the firm according to M. Boyer (1999) and J.-P. Mamboundou (2003). As for W. Azan (2007), he reduces the notion of performance to the idea of development. Overall, performance is a numerical result obtained in a competition. At the level of a company, performance expresses the degree to which goals have been achieved.

2.2. The concept of efficiency

According to Drucker (1963), efficiency can be defined as an organization's ability to achieve its output with a minimum of inputs. The notion of efficiency as a general performance indicator for all types of organizations was first formulated in the early work of Edgeworth (1881) and Pareto (1927), and its empirical implementation is documented in the book by Shephard (1953). Regarding the banking sector, McKnley & Banaian (2000) stated that efficiency is based on cost minimization and profit maximization, this is the same meaning expressed by (Cvilikas & Jurkonyte-Dumbliauskiene 2016) who defined efficiency as the maximum possible ratio between output and input of the product development process, which represents the optimal distribution of the available resources that would allow the maximum potential to be achieved.

2.3. The concept of effectiveness

According to Rolf Fare, Shawna Grosskopf, and Knox C. A. Lovell (1985), effectiveness can be defined as the degree achieved in producing a set of desired effects. Thus, a producer is effective if its goals are achieved, ineffective if its goals are not. The concept of effectiveness allows to measure the level reached by the final product of a system in relation to the objectives explicitly fixed. Therefore, effectiveness is measured by the difference between the desired results and the results obtained.

2.4. Efficiency vs effectiveness

The term efficient differs from the term effective, both are used to describe the performance of an entity and mean the ability to produce a result but there's an important difference. Effective refers to the achievement of a desired result while efficient means the ability to achieve desired results without wasting materials, time or energy. According to Jouadi and Zorgui (2014), efficiency summarizes the idea of producing in the best way which means the optimized use of resources to make the best products with minimal costs. In management, we can consider efficiency as the study of the optimized use of internal company factors. The concept of effectiveness, on the other hand, summarizes the yield of factors and the reach of goal, without considering the manner and the resources optimized use.

3. THE TYPES OF EFFICIENCY

There are three types of efficiency: technical efficiency (T), allocative efficiency (A) and scale efficiency (E).

3.1. Technical efficiency

Technical efficiency allows us to obtain the maximum output possible for a given combination of production factors and a given technology. This function is called the production frontier. The lack of competitiveness in a sector is the main cause of this inefficiency. If we consider, for example, a sample of banks operating in the banking sector, and construct the production frontier, the difference for each bank between the output produced and the output attainable on the frontier represents a measure of its inefficiency. Consequently, inefficiency implies a waste of factors used, which can be measured in output in the case of output orientation, i.e. the difference between maximum output and observed output, or in inputs if the output is fixed in the case of input orientation, i.e. the reduction in the quantities of factors used in order to be on the frontier (Chaffai, 1997). In this case, the inputs and the outputs are measured in physical terms.

3.2. Allocative efficiency

Allocative inefficiency is the result of using factors of production in the wrong proportions considering their price. In this case, the firm over- or under-utilizes factors compared to others, which makes production costlier than the firm that uses the factors in the optimal proportions. The combination of technical efficiency and allocative efficiency allows us to construct a cost frontier whose deviation from this frontier represents the cost inefficiency. The output in this situation is measured in physical terms and the input is measured in monetary and physical terms.

3.3. Scale efficiency

The inefficiency of scale occurs when the firm fails to maximize its profit in the sense that the marginal cost of its product differs from its market price. In other words, this notion of scale efficiency refers to the inefficiency caused by a non-optimal size. Its function is called the profit frontier and it includes technical, allocative and scale inefficiencies. The deviation from this frontier represents the profit inefficiency. A firm is considered 100% efficient when it is positioned on the frontier and in this case represents a model for the other firms in the sample. Therefore, we should start by choosing the type of efficiency we would like to measure via our research. Generally, researchers use technical efficiency, since it does not require additional investment for the firm to reach the frontier, it is sufficient to improve the use of factors (input or output). The other two types of efficiency are a bit tricky to apply, since they require a restructuring of the productive system. In the case of allocative efficiency, for example, a layoff is necessary if the labor factor is overused relatively to the capital factor.

4. MEASURES OF BANK EFFICIENCY

So far, we have discussed efficiency through a review of its definition, its different components and its various approaches. It is then necessary to present the methods used to measure efficiency.

4.1. The traditional approach

At some point, most businesses require a detailed review of their financial structure. A focus on financial ratios is one way to evaluate financial health and find out how it can be improved. Financial ratio analysis is a classic method easily applied and can provide simply an overview of a bank's performance by comparing its results to those of previous years or to the results of other competing banks. In practice, financial analysis refers to the interpretation of the company's financial statements through the calculation of ratios. These ratios are a relationship between key headings in the balance sheet or income statement, and are generally used to reveal

some information not obviously evident from a simple reading of the annual accounts. The value of the ratio can depend on the sector, the company's activities and even its location. This analysis should be developed at two levels:

- Over time: It is about examining the evolution of the company's ratio over a defined period of time.
- in space: The ratios observed at a given time should be compared with those of the sector in which the company operates.

In the literature, the most commonly used financial indicators are profitability ratios:

- Return on assets (ROA): The ratio provides information about the rate of return on investment. This means that it indicates whether the company's resources are being properly used to generate profits. It is calculated by dividing the net income to total assets.
- Return on equity (ROE): This ratio measures the financial profitability of the capital invested by the company's owners. It is the result of the ratio between the net income and the shareholders' equity.

The method of financial analysis by ratios is important enough not to be ignored as a method of evaluating a company but its result remain highly criticized. However, these financial ratios provide accounting information that should not be interpreted blindly, but should be adjusted according to the specific situation of the company. In other words, financial ratios are short-term measures that may not reflect the effect of managerial actions and decisions on the company's long-term performance. These criticisms justify the need to apply more effective performance measurement techniques, such as efficiency frontier methods. In fact, several researchers consider the use of frontier analysis methods as the most relevant measure of efficiency in the banking sector. It allows for the separation of better and less performing production units. There are two different approaches to frontier analysis:

4.2. The parametric method: Stochastic Frontier Analysis

Historically, the notion of measuring efficiency was first developed by Farrell (1957) drawing inspirations from Koopmans (1951) and Debreu (1951). According to him, the concept of efficiency measurement can be divided into two components, technical efficiency (TE) and allocative efficiency (AE). The concept and the concern for measurement were then considered by Aigner and Chu (1968) for determinist frontiers and, by the end of the 1970s, Aigner et al. (1977) and Meeusen et al. (1977) for stochastic frontiers; Charnes and Cooper (1978) were interested in non-parametric DEA (Data Envelopment Analysis) methods. Benchmarking with the different parametric techniques for measuring bank efficiency revealed that the best known and most widely used parametric technique for measuring bank efficiency is the Stochastic Frontier Analysis (SFA) (also known as the Economic Frontier Approach, EFA).

4.2.1. Origins of SFA

SFA, initially developed by (Aigner et al., 1977; Meeusen; Van Den Broeck, 1977), is based on traditional econometric regression approaches to estimate a production, cost or profit function. In order to explain the generalities of SFA, it is necessary to refer back to the neoclassical theory of production. The production function is defined as a combination of vectors (Input/Output) for a given producer, this function is defined by the maximum output that can be produced. However, not all producers can operate in this frontier even if they have the same amount of inputs. This consideration assumes that all firms below the frontier are inefficient. In other words, they have a margin for improvement either by increasing their output production or by decreasing their use of inputs.

In other words, this theory considers the role of random and uncontrollable factors ignored. However, in reality, there are a lot of odd factors that influence the output at a number of controllable inputs. Randomness is therefore a part of the econometric model, leading to the development of the SFA model.

4.2.2. Presentation of SFA

According to the theoretical foundations of technical efficiency and allocative efficiency, the efficiency frontier represents the set of most efficient benchmarks. The distance of each observation from the frontier reflects its degree of inefficiency. However, empirical observations can deviate from the frontier for two other reasons (Berger & Humphery, 1997):

- Firstly, the existence of measurement errors in any observed variable.
- And secondly, the presence of exogenous shocks (favorable or unfavorable). Changes in economic policy and in international financial markets, for example, can be a source of shocks for banks.

In this context, it is inappropriate to assume an error term with a normal distribution and a mean equal to zero when studying the performance of a given producer. The SFA specifies a functional form for the cost (or profit) frontier where a compound error term is used to separate the inefficiency term from random noise using distributional assumptions. Indeed, the error term associated with the frontier is composed of two elements: an inefficiency component and a "random error" component, combining measurement errors and exogenous shocks. The random component follows a symmetric normal distribution, while the inefficiency component follows an asymmetric distribution defined positively for a cost function and negatively for a production function (Christopher,Subal & Kumbhakar, 2014). This reformulation of the frontiers is stochastic because of a random variation (due to the environment) and a deviation from this stochastic frontier (due to different types of inefficiency). In order to understand the basis of SFA, we will present an example of a stochastic cost efficiency function.

$$Ln\ Ci = Ln\ C\ (Yi, Wi) + \varepsilon i \quad \Rightarrow \quad Ln\ Ci = Ln\ C\ (Yi, Wi) + Vi + Ui$$

With:
Ci is the total cost,
Yi is a vector of outputs,
Wi is a vector of inputs,
Vi is the (two-sided) noise component,
Ui is the non-negative disturbance that represents the inefficiency (the deviation from the efficiency frontier).

4.3. The non-parametric method: Data Envelopment Analysis

The DEA method is a non-parametric method based on a linear mathematical programming technique for measuring organization's efficiency defined as decision making units (DMUs) by transforming inputs (resources) into outputs (services). This method was first developed by Charnes et al (1978), although its beginnings are rooted in the work of Farrell (1957) who was interested in developing better models for evaluating productivity (later generalized to the concept of efficiency). His contribution provided new insights in defining efficiency and productivity, and in calculating the benchmark technology and efficiency measures. Based on an efficiency score (max 100%), it indicates whether an organization has any margin for improvement. This score is calculated in reference to an efficiency frontier. The DMUs on the frontier have a score of 100% and serve as models (best practice units) for the others, that have a score below 100% and therefore have a room for improvement.

In other words, this is also a benchmarking technique. Since its introduction, the DEA method has been identified in more than 4000 research articles by Emrouznejad et al. (2008) in scientific journals or reference books specially in the banking sector. Unlike parametric methods, the DEA method uses the inputs and outputs to calculate, using linear programming, an envelope representing the efficiency frontier. The best practices lead to the formation of a convex set of production possibilities. DEA is a technique that assumes the absence of random errors, so that all deviations from the efficiency frontier are considered inefficiency. Therefore, a non-parametric method does not require the specification of a functional form.

4.3.1. Input and output orientations

Input orientation: The input-oriented models are the models where banks are deemed to produce a given amount of outputs with the minimum possible amount of inputs (inputs are controllable). It improves efficiency through proportional reduction of input quantities, without altering produced output quantities. The projection of inefficient banks onto the efficient frontier allows us to define the extent to which a bank can reduce inputs. In other words, this orientation allows us to determine by how much an organization can reduce its inputs while producing the same level of outputs.

Output orientation: The output-oriented models are the models where banks are deemed to produce with given amounts of inputs with the maximum possible amount of outputs (outputs are controllable). It improves efficiency through proportional increase of output quantities, without quantitatively changing the inputs used. The projection of inefficient banks onto the efficient frontier allows us to define the quantity of outputs that can be increased. In other words, this orientation helps us to determine by how much an organization can increase its outputs while using the same level of inputs.

The choice between these two orientations depends on the variables (input or output) that decision-makers control more. If the power exercised is the same in both directions, which means that the decision-makers exercise the same management power over both inputs (resources) and outputs (goods or services), the orientation of the model will depend in this case more on the objectives set by the organization. In other words, is the objective of the bank to reduce costs or to increase production?

4.3.2. Models of DEA

Constant returns to scale: This model assumes that organizations operate in a situation of constant returns to scale (CRS model) and was initially developed by Charnes et al. (1978). It supposes that all organizations have reached their optimal size and that they operate in an environment of perfect competition, which is not very likely. In this case, the calculated score is called constant returns to scale (CRS).

Variable returns to scale: This model considers that organizations evolve in a situation of variable returns to scale (VRS model) and was developed by Banker et al (1984). It is also known as the "Banker, Charnes & Cooper model" (BCC model). It is appropriate when organizations are not operating at their optimal size. This assumption is usually considered in cases of regulated markets or imperfect competition. In this case, the calculated score is called variable returns to scale (CRS).

4.4. Stochastic Frontier Analysis vs Data Envelopment Analysis

Most researchers interested in efficiency measurement agree that frontier-based techniques are more relevant than standard financial ratios. The following table is a survey of the advantages and limitations of each of the methods presented above:

	SFA	**DEA**
Advantages	Considering randomness other than inefficiency	Easy decomposition of technical, allocative and scale efficiency
	The resulting inefficiencies can be statistically tested	No specification of a functional form to the production function
	The environment variables are easier to deal with	The ability to use multiple-input and multiple-output
Disadvantages	Must represent the technology by a particular parametric form	Significant errors in measuring variables can affect the measurement of efficiency
	A large sample size is required for reliable results	No statistical tests can be done

Table 1: Survey of the advantages and limitations of each of the methods presented above

Both the approaches have their distinct advantages and disadvantages. However, there is no consensus in the literature concerning the choice of one approach that would dominate the others. On one hand, parametric approaches impose a functional form that presupposes the form of the frontier, so that in the case of a misspecification of the functional form, the measured efficiency can be confused with the errors. On the other hand, the non-parametric method has the advantage of not imposing a functional form on the production function or a restriction on the distribution of the inefficiency term. Yet, no random variation is possible since the inefficiency is calculated as the deviation between the observations and the frontier.

5. CONCLUSION

In this study we investigate the various analytical methods which are being used by the researchers to measure bank efficiency. Firstly, we have demonstrated the different dimensions of the concept of efficiency then we explained the difference between “efficient” and “effective”. secondly, we have defined the different types of efficiency, including technical efficiency, allocative efficiency and scale efficiency. Then we have discussed the methods used to measure bank efficiency. SFA and DEA, the most widely used in the literature, have their distinct advantages and disadvantages. However, there is no consensus in the literature concerning the choice of one approach that would dominate the others.

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FOOD SECURITY, ELEMENT OF MOROCCAN SOFT POWER

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ABSTRACT

In Morocco, the issue of food security is generally treated from a sociological and economic angle, while it has a significant influence on the sovereignty and geopolitical position of the country on the international scene. In this sense, Morocco has attached great importance to the achievement of its food self-sufficiency through the efforts made in the agricultural field, and this through several agricultural plans and strategies, we note mainly the Morocco "Green plan". Indeed, agriculture plays a central role in the establishment of food security, this important place of agriculture is manifested by its contribution (14%) to the Gross National Product ahead of industry and tourism for the year 2021. The central position of the agricultural sector has been the result of several strategies and policies implemented by Morocco since its independence. Thus, the passage of an interventionist economic policy of the State in the agricultural sector until the end of the years 2000 (Support of prices to the production of strategic products within the framework of its vision of self-sufficiency), towards a liberal policy in the agricultural sector (support for agricultural investment). In addition, Morocco has carried out major strategic actions in the agricultural sector, such as the dam policy, the establishment of hydro-agricultural infrastructure, the strengthening of agricultural production, and the establishment of a strategy for the supervision and financing of farmers. These efforts have enabled Morocco to make progress and gains in terms of agricultural infrastructure, as well as the presentation of a development of comparative advantage. Today, the issue of food security in Morocco intervenes in an indirect way in the subjects of conflict and power. Thus, the new concept of food security becomes a determining factor in the management of territory and population (elements of geopolitics). Thus, food security is both a pillar of the sovereignty of the State and its soft power, because it is a vector of the independence of the State. The health crisis has called into question the importance of food security, and to face the panic of the population and States facing the risks of food disruption. Like the traditional instruments of Moroccan soft power, Morocco's success in establishing food security during the crisis has attracted the intention of several African countries. To this end, several countries have expressed an interest in concluding lasting agreements in the agricultural field, while others have sought to draw inspiration from the Moroccan agricultural model, which is a success story for them. However, the Moroccan approach to establishing food security is still insufficient in the face of new international constraints and challenges, which may directly influence Moroccan soft power in Africa. At the end of this article, we will try to show through a critical analysis of the impact of the limits of the food security policy on Moroccan soft power in Africa through the following axes: 1) Literature Review, 2) The geopolitical dimension of food security in Africa, 3) Food security: a geopolitical weapon of Moroccan soft power in Africa, 4)Towards a new version of food power in Morocco.

Keywords: *Soft power, Food security, Food power, Africa*

1. LITERATURE REVIEW

Food-related crises are an important part of human history, while interest in food insecurity only emerged at the end of World War II when scarcity and poverty spread around the world. In the 1980s the world experienced famine and food insecurity crises. Subsequently, poverty rates declined in different parts of the world due to the efforts of many countries to achieve food security. But the 2008 crisis has put the issue of food security back on the agenda worldwide. It is in this context that Morocco launched the Green Morocco Plan in 2008. Despite the efforts made, the problem of food security became apparent during the COVID-19 health crisis and the Russia-Ukraine conflict.

1.1. Historical development of the concept of Food Security

After the Second World War the subject of food has evolved over time, from the concept of food self-sufficiency to food security, nutritional security, food sovereignty, and ultimately the right to food. During the period 1943-1982, the concept of food security focused mainly on the quantitative and macro-economic dimension, which is mainly reflected in the notions of quantitative availability and access to food at the national level. Indeed, the Hot Springs Conference in 1943 considered poverty as the primary cause of famine in the world, in this context several countries were obliged to implement strategies of food self-sufficiency, which is the capacity for a country to meet the food needs of its population exclusively through its national production. In addition, since 1983 the world has seen a new, more humanistic and qualitative conception of food security. Indeed, *Amartya Sen's* theory states that the achievement of food security should not be limited to the satisfaction of availability at the global level, but that "everyone, at all times, should have material and financial access to the basic foodstuffs that citizens need" (FAO, 1996). Subsequently, the World Bank gave a new conception of food security that goes far beyond the level of food production at the national level to that of imports (World Bank, 1986). This justifies the involvement of the international market in the problems linked to the food security of countries. In this sense, the World Bank has redefined food security as "access for all people at all times to sufficient food for an active and healthy life" (WB, 1986). The definition of food security reached an advanced level of maturity in 1996 at the World Food Summit, which gave a more comprehensive definition of food security, "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (WFS, 1996). In this sense, the new pillars of food security are now availability, accessibility, utilization and stability. On the other hand, nutrition security dates from the same period as food security. In 2009, the concepts of food security and nutrition security were consolidated into a single concept: "food security and nutrition", whose definition is based on that of 1996, while noting that the nutrition dimension is an integral part of the concept of food security and of the work of the CFS[1]. The new concept of food sovereignty first appeared at the World Summit in 1996, following the declaration of an NGO called Via *Campesina*. This new concept shows the role of globalization in the precariousness of small farmers and the aggravation of food insecurity in the world. In this context, it was recommended that states develop their international commitments while protecting the interests of producers and consumers at the local level.

1.2. Soft Power: a new form of power in change

The new geopolitical tensions are developing with an increasing focus on the distribution of power between different global actors. In this context, the concept of power has evolved in parallel with the various changes in society. It is important to note that the evolution of society has always been the result of a power relationship, the process of building these relationships

[1] Committee on World Food Security (CFS, 2012).

is mainly based on an implicit recognition of the existence of power. Traditionally, states have opted for the tools of 'hard power' within the framework of realist political thought[2]. Meanwhile, scholars and practitioners are beginning to recognize that the world needs a shift from the old assumptions of power to the distinction between 'hard' and 'soft' power, and at the same time to recognize that political problems can no longer be solved simply by military power[3] . However, the concept of soft power, initially introduced by Joseph Nye (1990), is still in the process of being theorized and requires further study. The rigid interpretation of power has undergone a shift in parallel with the evolution of the field of international relations. In this context, the great politician Joseph Nye gave a new way of thinking about the changing nature of the international framework, focusing on the intangible nature of power, such as culture, religion. Joseph Nye presents two new forms of power, namely hard and soft power. Nye defines soft power as the ability to affect others to achieve desired results[4] . We can note from this definition that soft power is based on the ability to shape the preferences of others, without the use of force, but through the use of several techniques and immaterial means, such as the use of Moroccan companies internationally or exporting a successful business model. The use of legitimate institutions by soft power gives central legitimacy to soft power.

2. FOOD SECURITY SITUATION ANALYSIS IN MOROCCO

Faced with the various means of pressure in Morocco, such as rapid population growth, high rates of urbanization and new trends in consumption patterns, are challenging the food system. It should be noted that the sustainable food system is defined as a system that ensures food security and nutrition for all in a way that does not compromise the economic base. At the United Nations Food Systems Summit (New York, 2021), the Minister of Foreign Affairs, African Cooperation and Moroccans Resident Abroad, *Nasser Bourita*[5] said, "For Morocco, food security has always been a strategic priority and is at the heart of the new development model". This statement highlights Morocco's interest in building a sustainable food model.[6]

2.1. Food security in Morocco: State of play

A country's food security situation is defined by its ability to satisfy its food needs on the basis of local agricultural production, its expertise in agricultural management and policy, and its ability to supplement its needs with imports. The analysis of the food security situation remains linked to the macro-economic analysis of consumption and production indicators to a large extent. The tables below present the main available food security indicators recommended by FAO.

Table following on the next page

[2] Realist political thinking or Realpolitik: foreign policy based on the calculation of forces and the national interest
[3] Bound, et al. 2007: 13
[4] Nye, Joseph S. (1990c) *Bound to Lead: The Changing Nature of American Power.* New York: Basic Books
[5] https://www.un.org/sites/un2.un.org/files/FSS_statement_Morocco.pdf
[6] https://www.fao.org/food-systems/fr/#:~:text=Un%20syst%C3%A8me%20alimentaire%20durable%20est,la%20nutrition%20des%20g%C3%A9n%C3%A9rations%20futures.

Table 1: Status and outcome indicators for food security in Morocco[7]

Indicator category	Indicator Nomenclature	Value of the indicator
Natural resources	Useful agricultural area per capita	0.253 ha/capita (9 million ha in total)
	Irrigated UAA per capita	0.044 ha/inhabitant: 17.7% of cultivated land 36%: equipped with water-saving devices
	Available water per capita	620 m3/capita in 2019
Infrastructure	Road: Proportion of the population living in douars located less than 79.3% in 2017. of a kilometre from a passable road	
	Drinking water: Rate of connection to the drinking water network	Urban: 100% and Rural: 97% in 2019
	Sanitation: Rate of connection to the liquid sewerage system	Urban: 76% , 2019 and Rural: Low
	Electrification: Proportion of the population with access to electricity	Rural: 98.1% in 2018.
Distribution of wealth	GDP per capita	Dh32,348/capita in 2018
Food independence	Food Imports/Total Exports	17% in 2019
	Food Imports/Food Exports	86% in 2019
Income	Food expenditure in total household expenditure	Food expenditure: 37% in 2014 (95.9% of income per person are allocated to expenditure).
Sub supplies	Proportion of the population not having did not reach the minimum level of intake 0.1% in 2014 caloric	
Food insecurity	Severe and moderate food insecurity rates	25.9% in 2020
	Severe food insecurity rate	2.6% in 2020
Nutritional status	Proportion of underweight children under 5 years of age	2.9% in 2018
	Proportion of children under 5 years of age 15.1% in 2018 with stunting	
	Proportion of children under 5 with wasting	2.6% in 2018
	Proportion of overweight children under 5 10.5% in 2018	

Food security indicators remain vulnerable to climate change, crises and geopolitical tensions. Indeed, the effects of the Covid-19 health crisis combined with the Russian-Ukrainian conflict have negatively impacted food security indicators in Morocco, especially those related to farmers, consumers and the labour market. The latter, which remains the source of income for households, has experienced a significant decline at the end of 2019 and during 2020. Thus, the agricultural sector is considered among the sectors most affected by the current context, with a decline in agricultural GDP of 4.6% in 2019 and 6.9% in 2020 to recover strongly by 17% in 2021 (estimate). This has accentuated the recession resulting from the health crisis in 2020.

[7] Report of the High Commission for Planning, 2020.

Table 2: Indicators of the state of basic food products in Morocco[8]

Food products	Indicator Nomenclature	Value of the indicator
Cereals	Production	98.2 million Qx in 2018
	Imports	68 million Qx in 2018
	Apparent availability	219 Kg/inhabitant in 2018
	Consumption in cereal equivalent	185Kg/capita in 2014
	Wheat consumption	145 Kg/inhabitant in 2014
	Coverage rate	59% in 2018
	World consumption	Not available
	World wheat consumption	65 Kg/capita (ESCWA) in 2014
Sugar	Production	349 thousand tonnes in 2014
	Imports	1,207 thousand tonnes in 2019 1 057 thousand tonnes in 2018
	Apparent availability	34 Kg/inhabitant in 2018
	Consumption	24.8 Kg/inhabitant in 2014
	Coverage rate	47% in 2017
	World consumption	25.5 Kg/capita in 2015
Olive oils	Production	110 thousand tonnes in 2017
	Exports	15.5 thousand tonnes in 2017
	Apparent availability	4 Litre/capita in 2018
	Consumption	6.9 Litre/capita in 2014
	Coverage rate	1% for all oils in 2018
	World consumption	Greece 23.1L/capita; Spain 14L/capita in 2013
Meat	Production	Red meat: 600 thousand tonnes White meat: 720 thousand tonnes in 2018
	Imports	Low
	Apparent availability	37Kg/inhabitant in 2018 of which 17 Kg: red meat and 20 Kg: white meat
	Consumption	29.6 Kg/inhabitant in 2014
	Coverage rate	100% in 2018
	World consumption	42.9 Kg/inhabitant in 2017
Milk	Production	2.55 billion litres in 2018
	Imports of dairy products	74 thousand tonnes in 2017
	Apparent availability	74 L/capita in 2018
	Consumption in milk equivalent	59 L/capita in 2014
	Coverage rate	98% in 2018
	World consumption	241L/capita Developed countries, 71L Developing countries in 2016
Egg	Production	6.6 billion eggs in 2018
	Imports	Not available
	Apparent availability	Not available
	Consumption	103 Eggs/capita in 2014
	Coverage rate	100% in 2018
	World consumption	145 Eggs/capita in 2009 200 Eggs/capita in 2013 in the EU
Fish	Production	1.372 million tonnes, in 2019
	Export	Export: 50% of production in 2019
	Apparent availability	18.4 kg/inhabitant in 2019
	Consumption	13.6 Kg/inhabitant in 2014
	Coverage rate	100% in 2019
	World consumption	20.1Kg/capita in 2016

[8] Report of the High Commission for Planning, 2020.

It is clear that the coverage of basic products in Morocco is complete for certain products such as fish, eggs, milk and meat. However, it is still insufficient for other products such as cereals and olive oil. The insufficiency of certain products in the local market has created a rate of food independence of Morocco from the producing countries. In this sense, it is important to point out that the subject of food dependence on the outside world is becoming increasingly sensitive given its multiple implications on the social and political stability of Morocco and on the other hand on its geopolitical situation in the continent. Generally, the food security situation can be analysed in relation to four main basic indicators, namely the availability of basic foodstuffs, the country's accessibility to unavailable products and the stability of local market supply. Against these indicators, other elements can be measured as well, such as the rate of political stability, and the rate of absence of violence and terrorism.

Table 3: Food Security Status Indicators in Morocco

Elements	Indicators	Situations
Availability	Value of food production	112.9 in 2018[9]
Economic accessibility	General price level	1.4% in 2021[10]
Physical Accessibility	Asphalted roads as a proportion of the total road network	76% in 2019 [11]
Use	Access to improved sanitation facilities	Not available.
	Access to clean water	98.2% in 2021 [12]
Stability	Ration of cereal import dependencies	42% in 2016[13]
	Proportion of arable land equipped	7.8 million hectares (Ha) in 2021 [14]

According to the data in the table, it should be noted that great efforts have been made by Morocco, within the framework of the major orientations of the Green Morocco Plan. The latter was the result of a great deal of reflection allowing for the extension of irrigated areas and water saving through the promotion of localised irrigation, by subsidising at levels of 80 and even 100% (in farms of less than 5 ha) the necessary investments: digging of wells and boreholes, irrigation equipment (pumps, basins, pipes, drippers, etc.). At the same time, the VMP has encouraged entrepreneurs to access public land through long-term leases, which some consider to be land grabbing (Mahdi, 2014). These measures have undeniably led to new agricultural dynamics, thanks to the mobilisation of significant funds (around 10 billion euros in 10 years).

2.2. Post crisis: Rethinking the food model in Morocco

It is agreed that a crisis reveals problems. In this context, the Covid-19 crisis showed the fragility of food security in Morocco, despite the efforts made by Morocco under the Green Morocco Plan. Indeed, the limits of the Green Morocco Plan were clearly visible during the Covid-19 health crisis and especially the Russia-Ukraine crisis, with a considerable rise in commodity prices. These events called into question the issue of food security and dependence on the external market. In fact, the strategies implemented by Morocco to ensure food sovereignty since 2008 have been based on an export logic and not on a purely local consumption logic. At the same time, the Green Morocco Plan has focused on products that consume enough water, such as avocados and pasta.

[9] https://knoema.fr/atlas/Maroc/Taux-de-production-alimentaire
[10] HCP Report, 2021.
[11] https://www.challenge.ma/reseau-routier-un-secteur-sur-les-chapeaux-de-roue-114398/
[12] https://fnh.ma/article/actualite-economique/onee-plus-de-9-mmdh-d-investissements-en-2021
[13] https://hal.archives-ouvertes.fr/hal-02137637/document
[14] https://mapecology.ma/slider/agriculture-4/

These elements have led to absurdities, which allow us to have huge surpluses in some products, but extreme needs in others. In this context of imbalance of the food model in Morocco, it is crucial to rethink the Moroccan model for the next crises. For this, it is essential to implement the following actions:

- Define an agricultural policy that focuses on the collective interest;
- Grant subsidies to certain products with low added value for farmers in order to ensure food security (cereals);
- Building "collective food sovereignty" in the Euro-Mediterranean region or the African continent;
- Integrating soft power into agricultural policies ;
- Supporting farmers in terms of knowledge and means of production;
- Establishing conventions with a geopolitical dimension to address food insecurity;

It is essential to remember that food insecurity has a cost but not a price. For this reason, it is important to develop an agricultural strategy that aims at sustainability and that responds to the various natural constraints and those linked to the management of food crises.

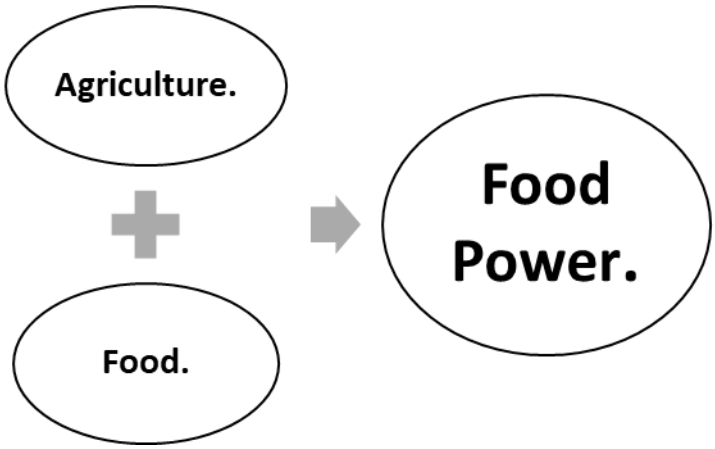
3. FOOD SECURITY: A GEOPOLITICAL WEAPON OF MOROCCAN SOFT POWER IN AFRICA

Historically "famine" was considered a destructive weapon, it was also used by several countries as a competitive tool in the game of positioning between countries on the global chessboard. The introduction of the concept of food security into the geopolitical game has become a strong soft power strategy. To this end, we can ask a multitude of questions about the philanthropic discourse of countries that send food aid? is the hunger of certain countries not an opportunity for others to demonstrate their strength? to go further, can we consider food security as a weapon of geopolitics of Moroccan soft power? The variable of 'Food' has always been used as an effective geopolitical weapon. Its use was either to strengthen or reinforce itself, or to destroy an adversary. It is within this framework that Morocco has signed a panoply of conventions with several African countries, in addition to other countries, in order to strengthen cooperation in the agricultural field. Thus, Morocco has been positioned by the World Bank in third place in Africa in the ranking of countries that have made more effort in the implementation of strategies to effectively develop Agri-Business. In fact, Morocco had a score of 64.02[15] percent, according to the report "Enabling Business Agriculture" and was placed in third position on the African continent. It is ahead of Kenya (64.8 per cent, 2nd) and South Africa (68.7 per cent, 1st) and closely followed by Zambia with 63.7 per cent. Morocco's geographical position has a direct influence on agriculture and food security and indirectly on issues of conflict and power. Thus, it is noted that agriculture and food represent a vector of power because they are a lever of Morocco's independence and an essential element of soft power. Morocco's power is largely indexed on agriculture and food.

Figure following on the next page

[15] https://www.agrimaroc.ma/agribusiness-maroc/#:~:text=The%20Morocco%20has%20eu%20one,with%2063%2C7%20for%20cent.

Figure 1: Presentation of the new conception of power

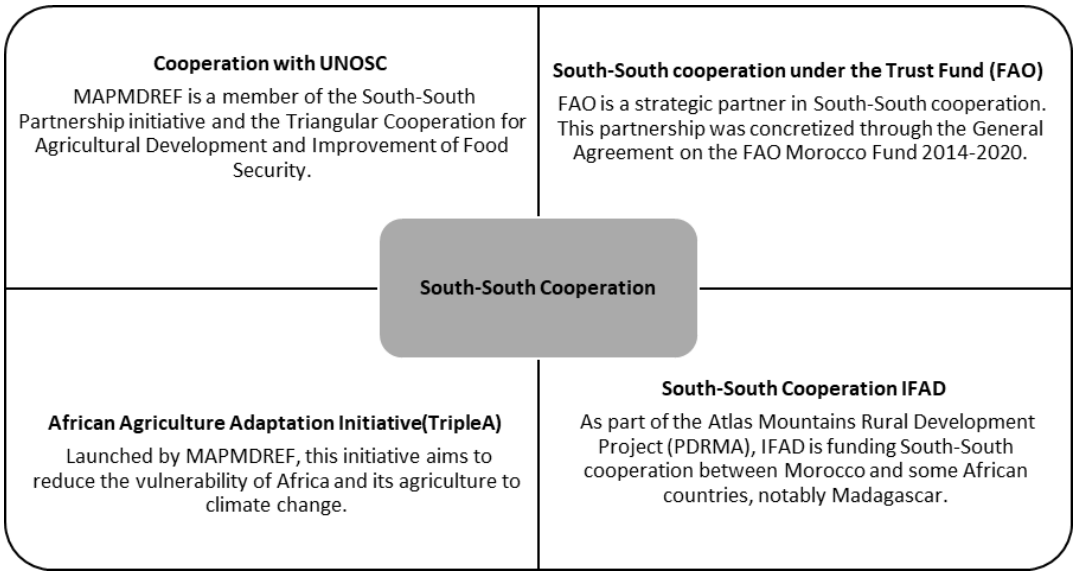


The COVID-19 health crisis has highlighted the importance of food availability and the 'panic' of the Moroccan people. In this sense, the geopolitical aspect of food security has re-emerged amidst the major geopolitical issues for Morocco. Also, Morocco took advantage of the Covid-19 crisis to distribute food donations to sister African countries, and subsequently strengthen its soft power in the continent. Like its military power, Morocco has become aware of the fragility of "disarming" its agriculture. To maintain its power, it must now guarantee its population an agriculture capable of producing quantitatively and qualitatively for all social categories throughout the country. Currently, Morocco benefits from food exchanges, agriculture has nevertheless offered the opportunity of peaceful international relations for Morocco especially with the countries of the African continent, through the agreements of food exchanges but also on other products also of agriculture. Thus, Morocco has reached out to several African countries to make them benefit from the expertise of the world leader in the field, and this through several partnership agreements between the Office Chérifien de Phosphates (OCP) SA and African bodies for the distribution of fertilizers and the development of agriculture and other bodies that enter the value chain. In addition, Morocco has been committed for several years to sharing its experience and its agricultural know-how with African countries. In this sense, said Mr. Mohammed Sadiki at the opening of the first edition of the international seminar on agricultural and rural vocational training in Africa[16] . "Morocco is willing to build with African partners a bridge of exchange of knowledge and expertise between the Mediterranean and Africa in the field of agricultural vocational training. The exchange of Moroccan know-how in the field of agriculture can create a significant influence on the agricultural markets of African countries, and an integration of the Moroccan model in the strategies of the partner countries.

Figure following on the next page

[16] https://www.agriculture.gov.ma/fr/actualites/le-maroc-engage-partager-son-savoir-faire-agricole-avec-les-pays-africains

Figure 2: SOUTH-SOUTH cooperation[17]



The issue of food security is thus "exploited" by Morocco as a soft power tool in Africa. However, the Moroccan agricultural model showed its limits during the Covid-19 health crisis and mainly after the outbreak of the war between Russia and Ukraine, through an increase in commodity prices. These limitations (discussed earlier) show Morocco's inability to produce food security. Hence the risk of negatively impacting Moroccan soft power based on food. In this context, it is essential to redefine the Moroccan agricultural model according to a new approach based essentially on risks.

4. TOWARDS A NEW VERSION OF FOOD POWER IN MOROCCO

The food weapon, also called *Food Power*, was used by the United States on a large scale during the Cold War. As for cereals, they had a virtual US monopoly after the war. Today, the US monopoly, especially on wheat exports, remains influential despite the changes in the international market. In Morocco, cereal production is largely imported from abroad as part of a food security strategy. This dependence generally manifests itself through the rise in prices of imported materials in the event of instability in the international market. The food model has several unknowns, namely: producing more and better in a constraining context (climate, resources, etc.). During the Coivid-19 health crisis, three new aspects emerged as key:

- Security through adequate food production;
- Quality food production, while respecting environmental standards;
- Securing economic access to food products.

These aspects require a radical transformation of the Moroccan agricultural model so that it can overcome the various constraints. In this way, agriculture will provide a new response to the geopolitical stability of Morocco. Morocco is obliged to limit its dependence on commodity exporting countries, while adopting an approach that integrates the following elements:

- Divide its imports to limit Morocco's dependence on countries exporting basic raw materials.
- Subsidising farmers to produce cereals at the national level.
- Cooperate with Arab and African countries to push them to produce at reasonable prices.

[17] https://www.agriculture.gov.ma/fr/cooperation/cooperation-technique#:~:text=This%20Programme%20of%20Coop%C3%A9ration%20Triangular,%20based%20on%20sustainable%20agriculture.

Finally, it is important to note that building a Moroccan Food Power requires the adoption of a new dynamic and innovative approach capable of delivering sufficient results in food and limiting dependency.

5. CONCLUSION

In conclusion, it is important to note that Morocco's efforts to create an agricultural model capable of achieving food security remain insufficient. The issue of food security in its relation to Moroccan soft power has several limitations that can influence Morocco's image on a global scale. Thus, the Moroccan agricultural model must include the food security variable in its strategies and programmes. It is important to note that Morocco must take advantage of its partnership with Africa in the agricultural field in order to create collective food security and at the same time strengthen its geopolitical position and its soft power. Food power as a new concept that is developing in the world must be an essential element in the new Moroccan development model, in order to build a strong and independent Morocco.

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GREEN ECONOMY: CHALLENGES AND OPPORTUNITIES IN MOROCCO

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ABSTRACT

The selection of the subject for this paper linked to current trends and issues in the world economy and the global financial system in particular. The rapid increase in the world's population and the growth of global GDP may lead to a catastrophic depletion of natural capital, which will profoundly affect the global economic system. In order to avoid these consequences, researchers and policy makers aim to integrate environmental dimensions into corporate and state strategies to ensure sustainable development that will maintain and enhance economic well-being without affecting the opportunities of future generations. This brings us to a new direction of economic and financial knowledge that lies at the crossroads of different industries, namely the green economy, which aims to improve human well-being, social justice, create new conditions for decent employment while reducing environmental risks; the transition to the green economy have become necessary. In this context, Morocco like other countries, has adopted new strategic approaches to sustainable development and adheres to a green economy that respects ecological balances and is likely to open up new opportunities for wealth creation and sustainable employment. In this article, we will define the concept of "green economy", then analyse the opportunities and issues of the transition to a green economy and focus on the case of Morocco.

Keywords: *Challenges, Green economy, Morocco, Opportunities*

1. INTRODUCTION

The planet's resources are overexploited, resulting in soaring energy and food prices due to the risk of their depletion, in addition to other negative consequences for the environment. The main one being climate change, which manifests itself in the form of numerous natural disasters such as floods, storms, fires, drought and other less striking but important phenomena such as melting ice and rising oceans, as well as changes in the behaviour of animals and plants as a result of changes in the distribution of rain. In response to these various threats, and to assure the survival of the planet, science and economic incentives are the means to overcome real dangers. In this context, several economists have shown the way to possible reform without calling into question the foundations of the market economy. Joseph Stiglitz and Paul Krugman are among the economists who have supported the idea of the transition to an environmentally friendly economy. Joseph Stiglitz believes that growth indicators, notably GDP, are not a good measure. Since it does not take into account inequality, lack of resilience and lack of sustainability. Joseph Stiglitz argues that it is more favourable to put in place a multi-faceted strategy, which addresses climate change and stimulates the transition to a green economy and which can serve as a long-term economic stimulus as it will encourage companies to modernize their operations.

This will stimulate private investment and innovation and make the economy more dynamic. Paul Krugman, on his part, called for firm measures to protect the environment and to liberate ourselves from dependence on oil. He believes that the most urgent thing is to drastically reduce coal consumption and its use to generate electricity - unless we can really capture CO2 emissions - and advocates reducing fossil fuel consumption and sharply increasing electricity prices. Indeed, growth theories have long ignored the environment as inexhaustible and considered a stylised world in which agents produce with manufactured capital and labour and derive satisfaction from the consumption of goods alone. However, from the 1970s onwards, and following the oil shocks, economists recognised the need to take account of the natural environment, in various aspects, in growth models and undertook to study the role of non-renewable (fossil fuels, minerals) and renewable resources in growth. Their focus has been on the circumstances in which the finite nature of the environment and the scarcity of natural resources constitute a physical limit to growth. This has provoked the debate on the emergence of an environmentally sustainable global economy in recent decades. This debate has become larger and more diverse, and at times more controversial, and has given rise to a new concept, the 'green economy'. Following the 2008 financial crisis, the green economy has become part of economic debates and has gained popularity as a policy paradigm and acceptance within states and in international policy discourses. International organisations and governments currently perceive the green economy as a paradigm shift in contemporary development thinking to advance sustainable economic development. South Korea, China and the European Union have been forerunners in implementing green economy initiatives over the past decade through the implementation of development plans that dedicate a significant share of investments to green initiatives and the integration of green economy initiatives into state strategies. In Africa, too, several countries have integrated green economy strategies into their national programmes. Morocco, for its part, is working to position the country as a competitive, green and sustainable economy. It adopted a National Strategy for Sustainable Development at the Council of Ministers meeting of 25 June 2017, which is based on seven fundamental pillars, including the strengthening of sustainable development governance, the transition to a green economy, improving the management and development of natural resources, preserving biodiversity, accelerating the implementation of a national policy to combat climate change, reducing social and territorial disparities and promoting human development and the culture of sustainable development. Based on this strategy, Morocco has also endowed a National Climate Plan, which outlines the key orientations for successful adaptation efforts in vulnerable sectors and remains firmly committed to the objectives of the Paris Agreement, by developing a Low Carbon Strategy 2050. In this article, we will define the concept of "green economy", then analyse the issues and opportunities of the transition to a green economy and focus on the case of Morocco.

2. GREEN ECONOMY: CONCEPTUAL ANALYSIS

After the Earth Summits organised since 1972, the Brundtland report of 1987 until 1992 in Rio, it was suggested that development should be sustainable and combine environmental, economic and social dimensions. In 2012, in Rio, it was imperative to seek to balance economic logic with the consideration of an environmental imperative that was becoming increasingly apparent. This was the occasion for the institutional consecration of the "green economy", which should represent a new stage in the reconciliation between the environment and the market. The aim was to present the environment not as a parameter to be taken into account, and even less as a constraint, but as an opportunity. The term 'green economy' has been increasingly used on the international stage in recent years, culminating in the recent Rio+20 Heads of State Conference, where its rhetorical success was matched by the controversy it generated.

The green economy is generating undeniable enthusiasm throughout the world. However, it is still poorly understood outside certain circles of insiders. Indeed, to define the character more or less green" of an activity, two approaches can be considered, one by impact, the other by finality.

2.1. Approach by impacts

According to its impact on the environment, an activity qualified as "green" in reference to an equivalent activity a greater pressure on the environment (more polluting or more consuming of natural resources). It is therefore a relative notion, taking into account a given state of technological knowledge, the production costs of the various activities and consumption standards. Green" products are usually alternatives whose use and disposal are less polluting than conventional products at a defined date.Analyse the However, the interaction between the economy and the environment requires clarification of what is meant by "environment". The environment can be defined as the assets that are not produced by human activities, such as air, water, forests, biodiversity, rocks, fauna, flora, etc. Economic activity affects these different components, either by releasing pollutants into the air, water and soil, or by creating new ones. Economic activity affects these different components, either by releasing pollutants into the air, water and soil, or by producing waste, noise, damage to biodiversity, or by taking scarce or endangered resources. Depending on the environmental criteria used, certain activities may or may not be considered "green".

2.2. Approach by economic purpose

Following this approach, an activity will be qualified as "green" if it produces goods or services whose purpose is to protect the environment.. Nevertheless, an activity whose purpose is environmental may have a negative induced effect on the environment. Conversely, an activity whose primary purpose is not environmental protection may exert very little pressure on the environment in terms of material removal, waste generation, or discharges to water or air. The term green economy refers to environmentally friendly production methods that use fewer or better natural resources and have less negative impact on the environment. This concept is similar to green growth, which aims to change the trajectory of national and global economies. Indeed, the OECD states that: «A green growth policy is about promoting economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being depends». To do this, it must catalyse investment and innovation that will underpin sustainable growth and create new economic opportunities. This is achieved by prioritising the steering role of growth, while redefining the foundations on which growth is based. The proponents of the green economy specify the objectives of economic development and identify concrete policy instruments to create the conditions for the implementation of sustainable development. The United Nations programme defines the green economy as «an economy that leads to improved human well-being and social equity while significantly reducing environmental risks and resource scarcity». The green economy, therefore, is an approach to development that aims to stimulate the global economy through policies that prioritise sustainable energy, consumption and production patterns. Moreover, through the creation of jobs in new "green" sectors, it aims to ensure a more equitable distribution of the benefits of growth in order to improve the living conditions of poor populations. According to the same report, the green economy aims to:

- Ensure economic sustainability;
- Fight poverty by creating jobs in new sectors;
- Preserve the natural capital that supports human activities (UNEP, 2011).

In fact, experts or officials within international institutions initially constructed the green economy concept as a technocratic category, at the interface between the economic discipline and the decision-making sphere. Their stated aim was to propose a way of talking about the environment that would be more audible to the private sector, but above all to those responsible for economic policies. It is liberal in the sense that the tools recommended for the advent of the green economy are those traditionally associated with the proper functioning of markets, but these are not thought of as self-regulating mechanisms. State intervention in the form of direct investment and tax incentives is central to the policies envisaged. The green economy does not, in any case, refer to a precise theoretical project. The vagueness should be compensated for by the multiplication of examples, instruments and sectoral applications that are sufficiently diverse and adaptable to be appropriated by various actors.

3. OPPORTUNITIES OF THE GREEN ECONOMY

The Green Economy has appeared as a way to promote human well-being and social equity while significantly reducing environmental risks and resource scarcity. Indeed, the transition to greener growth will require annual investments of around 2% of global GDP (or US$1.3 trillion), which will require policies and investments that decouple growth from the intensive consumption of raw materials and energy. Studies conducted by the United Nations Environment Programme (UNEP) argue that sustainable development and the economy go hand in hand, as the green economy does not hinder but rather encourages the development of employment and wealth of nations. Public and private investments worldwide in sectors important for green growth have already proven to reduce poverty and reduce or eliminate environmental damage and misguided subsidies. The ten core sectors identified for these investments are agriculture, construction, energy supply, fisheries, forestry, industry (including energy efficiency), tourism, transport, waste management and water. For each sector, a number of challenges were identified that facilitate the transition to green growth and the conditions for their implementation. However, it was found that a reallocation of public and private investments, stimulated by appropriate reforms, is needed to develop and/or strengthen natural capital, such as forests, water, soil and fisheries stocks, which are particularly important for the rural poor. However, we can draw from the findings of this international context three facts, which are the green economy, can contribute to wealth generation and GDP growth.

The green economy offers several opportunities:

- A "green" economic growth through:
  - The development of technologies whose use is less harmful to the environment than the use of conventional techniques to meet the same needs;
  - The practice of responsible production and consumption, from the design to the production of thousands of products;
  - The protection and restoration of ecosystem services: water, soil and biodiversity;
  - Sustainable development in transport, industrial production, housing and many other areas...
- Boosting the employment sector by:
  - Job creation, since the green economy will certainly create new jobs, but above all it will modify existing jobs, which will be equipped with new skills;
  - The creation of new jobs specifically dedicated to the environment (consultancy, carbon trading, recycling, and waste and wastewater treatment...)
  - The transition to a green economy will create new jobs and consequently a higher rate of economic growth.

- Improving the productivity and competitiveness of businesses through:
  - Wider adoption of resource-saving technologies with expected gains in price competitiveness;
  - Reorganising the value chain to reduce waste throughout the product life cycle;

To succeed in the green transformation, governments, businesses and civil society will have to engage jointly in this movement.

4. GREEN ECONOMY ISSUES

There exist a series of quantitative estimates to represent the magnitude of the consequences of implementing the green challenges. For example, average losses from natural disasters are about $181 billion/year, infrastructure development needs to 2030 are $5-7 trillion/year, funds needed for energy efficiency and building a low-carbon economy by 2050 are $1.1 trillion/year respectively. The green economy is a major challenge to promote an equitable distribution of wealth within and between nations, to reduce the disparities between rich and poor, and to achieve social and economic justice, in a sustainable and equitable sharing of the planet's resources and leaving sufficient space for wildlife.

- Safeguarding biodiversity and preventing environmental pollution:
  As an integral part of human development and well-being, there is a need to protect and restore biodiversity, and to develop a governance system to protect ecosystems and their resilience from irreversible damage. Human well-being, quality of life and environmental health should be the guidelines for economic development. Ecosystems and environmental resources must be carefully managed and safeguarded in order to increase the value of environmental benefits to future generations and to meet their needs equitably, thus enabling them to prosper.
- Maintaining green economic growth and employment:
  Sustainable development and the economy go hand in hand, as the green economy does not hinder but rather encourages the development of employment and wealth of nations. The transition to a green economy will create new jobs and therefore a higher rate of economic growth. A green economy creates tens of millions of green jobs. The employment potential of the renewable energy and energy efficiency sectors, confirmed by the 2030 perspective, shows that biomass, energy efficiency and the photovoltaic industry represent a potential of more than 23 million jobs worldwide.

Support of sustainable development by the financial system would have a positive impact on financial stability and can also play a major part in improving the quality of financial services. A key direction for the transformation of the world and national financial architecture is the formation of a "green" banking system in the form of a "network" of financial intermediaries: "green" banks, development banks, as well as commercial banks with separate eco-financial divisions. Financial policy of banks, geared towards achieving sustainable societal goals, is a tool to create opportunities for the development of a green economy.

5. TRANSITION TO A GREEN ECONOMY IN MOROCCO

Environmental problems are numerous and diverse in Morocco, as they are in many developing countries. They result from the poor management and overexploitation of natural resources. Indeed, every year, large areas of forest are destroyed, with more than 31,000 hectares of forest lost annually. The discharge of industrial and domestic waste, the large-scale use of phytosanitary products, fertilisers and the mineralisation of water due to the intrusion of marine water, which causes the degradation of water quality.

Wind and water erosion, the practice of inappropriate crops, the urbanisation of agricultural land, the use of archaic techniques in the field of mining and quarrying, threaten the soil resources, which represent one of Morocco's strategic resources. It should also be noted that 6 million tonnes of municipal solid waste and more than 975,000 tonnes of industrial waste produced annually end up in uncontrolled dumps. The cost of environmental degradation in Morocco is equivalent to 4% of GDP, and the country continues to suffer the annual destruction of 30,000 hectares of forest, threatening 92% of its national territory with desertification. Hydric resources are characterised by a strong growth in demand while resources are threatened by shortage and a growing energy dependence of 97%. All these elements and many others lead to huge environmental problems, so it is essential to put in place a real sustainable development policy through the implementation of several sustainable development and green economy initiatives. Indeed, Morocco has adopted an integrated, participatory and comprehensive approach to the transition to a green economy, in line with international efforts in this area and in accordance with the recommendations of the International Panel on Climate Change and the Sustainable Development Goals. The country has made a strong commitment to sustainable development and is already engaged in a green economy process. By setting up several plans and programs, structuring and large-scale: Green Morocco Plan, the energy strategy, the Halieutis plan, the Emergence plan. In addition, Morocco was among the first countries to sign and ratify the three framework conventions resulting from the Rio Summit:

- The first, the United Nations Framework Convention on Climate Change;
- The second, the Convention on Biological Diversity, aims to protect the entire diversity of life;
- The third, the convention to combat desertification, was signed two years after Rio.

As part of the transition, Morocco has elaborated the National Climate Plan 2020-2030. Which focuses on strengthening the capacity to adapt and accelerate the transformation to a low-emissions economy, implementing national climate policies at the local level, and encouraging innovation and awareness to better respond to the challenges posed by climate change, and is based on strengthening governance and mobilising resources to combat climate change. Thus, to strengthen the stability of the financial sector and ensure the financing of development projects. He emphasised the need for more promising financing mechanisms and tools that could replace traditional sources of financing in order to fill the financial gap and achieve low-carbon development that is adaptable to the effects of climate change and based on the particularities of the territories in order to strengthen the resilience of the population. He added that public finance is of paramount importance for investment in green projects and the fight against climate change, not only as a direct financial resource, but also as a catalyst for private investment. Morocco has also benefited from support for energy and digital transition, which is part of the implementation of the Paris Agreement on climate change. 1.6 billion Over the next five years, as part of the European "Global Gateway" strategy. However, the Kingdom is committed to reducing its greenhouse gas emissions by 45.5% by 2030. It has set itself the target of increasing the share of renewable energy to over 52% by 2025. After citing Morocco's various strategies for the transition to the green economy, the regulatory framework was included through:

- The Constitution, at the level of Article 31 which stipulates that the State, public institutions and local authorities must work to mobilise all available means to facilitate equal access of citizens to the conditions allowing them to enjoy the right to a healthy environment.
- The National Charter for the Environment and Sustainable Development (CNDD), adopted in December 2012 by the Government Council, which had already anchored our country in the spirit of preserving its environment and sustainable development, has become a major concern to all Moroccans.

6. CONCLUSION

A green economy is an economy that reconciles the environmental and economic interests of society for a sustainable development. It is a trend in economics that has emerged over the last two decades, according to which the economy is an element dependent on the natural environment, within which it exists and of which it is a part. Morocco needs to strengthen the conditions for the green economy by strengthening political will and regionalising public policy on the green economy, investing in research, development and innovation, and raising awareness of the opportunities of the green economy.

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CRITICAL SUCCESS FACTORS OF IMPLEMENTATION OF ERP IN PUBLIC ORGANIZATIONS: SCOPING STUDY

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ABSTRACT
The purpose of this research is to study the Critical Success Factors (CSF) of implementation of ERP in organizations and especially in the public sector. The public sector is subject to specificities that should be taken into account when integrating or modernizing information systems (IS). This analysis is based on a sample of 10 actors evolving in the implementation of modernization projects of ERP in the public sector. The research highlights the different key dimensions to the success of a project and more specifically the key features to the success of a project in the public sector.
Keywords: *ERP, critical success factors, dimensions, implementing ERP, public sector*

1. INTRODUCTION

ERP is one of the major tools for strengthening competitiveness today. They are an asset that modifies work practices through the rapid circulation of information, the coordination of action, the development of new ways of doing things, rapid access to a wide range of knowledge and the opening up of new services. The organisational consequences of ERP are therefore numerous: ERP changes the structure of the organisation through the creation of new services and the reorganisation of IT services, or even services included in the scope of ERP, by changing the nature, circulation and modes of creation of information. Similarly, ERPs affect the decision-making process in companies, control processes and cause changes in the social behaviour of individuals within organisations, but also in management methods (Leger, 2009). Indeed, the process of implementing an ERP is complex in the sense that it requires technical and organisational skills, as not only does the configuration of the ERP need to be carried out, which is a process emanating from the very complexity of the architecture of the modules and data management, but it also needs to integrate the company's business processes (Robey et al, 2002) and, eventually, the integration of the ERP with existing systems needs to be ensured while managing ERP adaptation issues (Roque, 2008). The role of ERP in a public organisation is as important as in a private company. An analysis of the specificities of public establishments reveals realities that are different in nature from those of private sector companies. It is therefore interesting to identify and analyse the different tools implemented in this context. We have seen a few field studies that focus on the adoption of ERP in a private organisation context. Our research aims to study the implementation of ERP in a public environment. The ERP implementation process is considered to be one of the factors explaining the failure or success of the project (Bourdreau, Robey, 1999). Therefore, our research question is: what are the key success factors for the implementation of ERP in the public sector? We assume that the stages of this process are linked to the structural, cultural, strategic or marketing dimensions of the organisation in question. In this context, our analysis draws on the work of the dimensional model of (Chaabouni Amel, 2006). It is from this perspective that we have studied the different dimensions of ERP implementation in a public setting. Methodologically, our analysis is based on an exploratory study that aims to explore, discover and describe the reality of the success or

failure factors of ERP implementation. For the data collection, we carried out semi-structured face-to-face interviews, i.e. about ten interviews lasting an average of 50 minutes. In order to achieve a good level of comparison of information and interpretations, we conducted the interviews with the various stakeholders in the ERP projects (integrator, publisher and end customer). These data were analysed using non-statistical methods by analysing the content of all the statements made during the interviews we conducted as part of this study. To this end, we will first present the results we obtained following the collection of data using the qualitative research software "Nvivo" by analysing these data in relation to the research hypotheses, and then we will try to formulate recommendations based on these results.

2. SYNTHESIS AND ANALYSIS OF THE RESULTS OBTAINED

In general, the hypotheses put forward are all confirmed, although some are more important than others. The dimensions most mentioned in our interviews and therefore most important when setting up an ERP in the public sector are listed in order of importance.

2.1. The cultural dimension

The cultural dimension was the most mentioned during our study; in particular with an important section on change management which confirms the hypotheses below:

- Hypothesis 1: *The involvement of end-users in the ERP implementation project is a key factor in their implementation in the public sector*.

Our study shows that the involvement of end-users in the implementation of an ERP is a determining factor in the success of a project in general (in the public and private sectors). They are almost systematically involved in the implementation process in order to provide the business vision necessary for the implementation of a solution. It appears that many failed projects are linked to poor user involvement. They are sometimes poorly represented and, as a result, the business processes are inaccurate.

"*I'd like to say that no, the testing phases mean that in general they are involved. I mean, it's still very, very rare or really on a very simple tool or there it's not necessarily necessary to involve the users*."

- Hypothesis 2: *The training of actors on the software package and the understanding of the new system are key factors for their implementation in the public sector*

Our study also mentions user training as a structuring element of the project in order to get them on board and increase the rate of appropriation of the tool. This part is often implemented by the public organisation but requires training by the solution integrator. This is often a part that is neglected by organisations.

"*Then it's how we prepare the users to use this new system. This is something that is often poorly perceived and poorly constructed because the client says "OK, but I'll do the training at the end" and that's a total mistake"*.

- Hypothesis 3: *Communication between the different levels of the organisation (hierarchy & staff), a key factor in the implementation of ERP in the public sector*.

Communication is often the part on which organisations invest least in terms of change management, yet it is crucial to promote acceptance of the solution and avoid rejection by users.

"*Change management from the start of the project, i.e. we have to communicate, we have to communicate on what it will bring, how the end users are going to be associated with the construction of the system, how we are going to train them, how we are going to accompany them during the implementation of the system and how we are going to make sure that they have properly integrated the implementation*".

In addition to these three hypotheses, we note a strong reference to the subject of the public procurement code. Public institutions are in fact governed by this regulation when they issue calls for tender. This is a key factor in the success of a project, because without compliance with this code, the project will not be successful. It is extremely structuring and subjects responses to calls for tender to time and form constraints. It also imposes strict adherence to the specifications defined in the pre-sales phase, so that any modification during the project becomes complicated and must be subject to amendments.

"*Finally, the public procurement code is also an important point. And often one of the key factors for success is also to be familiar with the accounting rules of the public sector*."

In order to successfully implement a tool in the public sector, it is also necessary to adapt to the norms and values of the organisation. There is a political dimension as well as a non-profit aspect to take into account. The public procurement regulations mentioned above lead to a lack of flexibility and difficulties in the validation circuit, which is much slower than in the private sector. As all decisions are formalised, validation procedures are important.

"*A very big difficulty to validate, often we adapt because we have to crab forward*."

"*Contract management it's a real, it's a real point of complexity, the contracts are complex and the actors who have to sign validation minutes often... maybe, so it's maybe not politically correct that I'm going to say, but maybe more difficulties to engage in the public sector to decide*."

In the public sector, the culture of quality predominates, the tools that are put in place are long-term tools, unlike the private sector. "And a certain, still a certain culture of quality. That is to say that in the private sector today it is really a general philosophy of fast and dirty, that is to say software developed is very badly done, disposable, to respond to a problem but tomorrow the problem will be different, so there you have it... In the public sector we are not at all in that philosophy, we are in the process of setting up the software of the EPLEs in the spirit of our customers, it is the information system of the next 10 or 15 years".

2.2. The strategic dimension

This dimension studied confirmed the following hypothesis:

- Hypothesis 4: *Compliance with project objectives and issues are key factors in the implementation of ERP in the public sector*.

Compliance with the objectives and challenges set by the public body during the pre-sales phase is particularly important in the public sector. The regulatory factor must be taken into account: IS modernisations in the public sector are often the result of a regulatory obligation, so there is very little flexibility on the subject. The public sector also imposes, through the public procurement code, strict compliance with the specifications formulated before the sale.

We thus distinguish two predominant objectives: the financial objective, which aims to reduce the debt and expenditure of the State, and the regulatory objective mentioned above.

"*We know the client's objective, i.e. I must have an easily scalable information system that must take into account regulatory changes*".

In order to meet the project's objectives, it is necessary to measure the customer's satisfaction. This step is an important part of the success of the project and allows for the detection of any difficulties or dissatisfaction of the client.

"*You already have a tool developed by our IT services company called the CSE and this is a tool which has been put in place by the quality team which allows us to say at the launch meeting: "Mr. Customer, we are going to work with you but in order to work with you in order to judge our efficiency, we propose that every three or six months you give us feedback on the satisfaction of the teams and the quality of what we produce*".

There is also a key success factor to be taken into account, mainly on the side of the public institution integrating the new project: the definition of needs. Indeed, poorly or insufficiently assessed needs can lead to failure. It is therefore important to involve the right actors in the definition of the needs and to detail them sufficiently to avoid "surprises" during or at the end of a project.

"*The risk is that organisations either haven't expressed the different cases sufficiently and gone down into detail so in that case we couldn't anticipate it and we discover things on the fly*".

"*If there is a rejection, it is because there was a defect in the tool or because it was designed on the basis of an expression of needs that did not reflect the reality of the users' expectations*".

2.3. The structural dimension

The study of this dimension confirmed the following hypothesis :
Hypothesis 5: *Company restructuring and department reorganisation is a key factor in the implementation of ERP*.

The implementation of a new information system often involves organisational changes. A harmonisation of processes is always necessary for the success of the project. Indeed, the implementation of an ERP system requires a redesign of processes in order to adapt to the solution. This harmonisation leads to a modification of business practices and a readjustment of the users of the solution. It is imperative to review the structure of the organisation if the regulations are changed.

"*Often it is not organisational changes but procedural changes that are brought about by the software package because the software package involves a number of screens*".

"*They need to review all their processes to modernise them*".

Public sector organisations often face more reorganisation than private sector organisations. The latter would certainly not have survived all these reorganisations, which is a strength of the public sector. However, as the process can be lengthy in the public sector, changes can occur at any time and alter or even cancel new projects.

All these reorganisations will have an impact on the staff and the tasks entrusted to them. The implementation of a new IS often implies a reduction or modification of FTEs (full-time equivalent). This poses a problem in view of the "lifetime employment" of the public sector. It is necessary to anticipate these reorganisations. The aim will be to computerise as many processes as possible in order to save time and money by cutting jobs. Or even to make people more versatile so that they can manage more tasks. The aim is to optimise FTEs and reduce public expenditure. Not all posts will be abolished but they will have to evolve with the new system.

"*We will have an impact on the agents as such, since certain tasks will disappear, the way of doing things will be different, the processes will be re-modelled, so we will review all the practices, the ways of doing things in the financial function. (...) And then tasks linked to the materialisation or dematerialisation objective will disappear (photocopying, archiving, etc.)*".

Mutualisation is a key element in the implementation of a new system, especially in financial services and human resources for example. A person will not only manage his or her tasks at the level of his or her city, but perhaps at the level of his or her country or continent.

"*In passing, there was a reorganisation for these ministries, it was the only Chorus project where shared service centres were created to deal with all the authorising officers of the three ministries plus the DGFIP, so this was a major problem because they were obliged to create shared service centres ex nihilo with the recruitment of people who had to be trained etc*".

However, organisational change is not easy in the public sector because the organisation is subject to various regulatory constraints, such as a very hierarchical organisation based on laws and decrees that have been applied for years and are becoming too cumbersome or no longer suitable. In addition, there is a lot of paperwork, which slows down the processes even more. It takes a long time to get something done or to make things change. Decision-making is very complicated, no one has the courage to sign or wants to decide for career reasons but also because there is no point for them to change it.

"*It is the implementation of the information system that will hide the organisation which is not optimal and it is also, for me, the number one reason why all the major state programmes are complicated, particularly on the subject of human resources, because no one has the courage to modify the regulations and the organisations*".

This complexity is also related to the size of public sector organisations and their structural complexity. Indeed, the diversity of actors makes decision making slower and project progress more complex. Each actor asks the others to do more or blames the other parties when a problem occurs. Often the service provider ends up with two clients to manage instead of one, but they also have to respect the contract. Moreover, it is very complicated to question the status of civil servants.

"*On one side you had the ministry and on the other the AIFE. There were two clients. There was the ministry which said, I don't accept to put these tools in place and the AIFE which said to us: you must respect the contract for the deployment of this ministry. That was a big difficulty*".

2.4. The marketing dimension

- Hypothesis 6: *The perception of the tool by users and in particular the ergonomics of the solution are key factors for their implementation in the public sector*.

We can see from our study that when implementing ERP in the public sector, the perception of the tool by users is important for its adoption because it will influence the intention of users. It is complicated at the beginning to adopt this new solution, as in any project, there are always those who are reluctant. In general, the first impression of users is often negative, because they have to change their habits, they are going into the unknown and have to adapt to this new process. In addition, users are afraid of not being able to use the new tool despite the training and assistance provided during its implementation.

"*Often there is a difficulty at the time of start-up which is inherent in the fact that users are confronted with a new tool and despite the training, the support they are given, etc., they lose their points of reference, and when you lose your points of reference, you have difficulties*".

The public sector is a special sector and more complex than other sectors. During the interviews, the example of the complexity of payroll systems came up regularly. The old systems in the sector were specific and customised for each department, but now the systems are much more general, the ease of use is not immediately perceived by the future users, which adds complexity to the implementation. Each person must therefore learn what will and will not work for them in order to be effective. Moreover, public sector employees are resistant to change, especially when the decision to change is first made. Afterwards, users are less and less reluctant because they really see what the tool can do for them. They also know that they will get used to the new tool.

"*The public world is a world that doesn't like to change, (...) it's the archetypal world that doesn't want to evolve because it's afraid of change for a lot of reasons and so it's not easy, so you have to go through management and then go for it, be clever, find the right ways of doing things*".

Some people are in favour of implementing this new system from the start, they believe in the project and are motivated by the change. They need to be identified early on so that they can help with the implementation and can be relied upon.

"*Often at the beginning there is a lot of grumbling, well a lot of grumbling for nothing, then there is a bit of everything, there are enthusiastic, dynamic people and generally, we have to rely on this to be relays, we have to identify them as soon as possible, even well upstream before the software arrives or the first training courses arrive, in order to be able to rely on people who are a bit key and who can spread the word a bit*".

All the people are aware of the need to evolve because the systems are obsolete and therefore give useless work but they know that it will require extra time to adapt and a rethink. In the end, a few months after the implementation, the majority of people are satisfied with the tool. The key is to bring about the change properly.

"(...) overall the feedback is very positive for the moment, there is no rejection as such".

3. RECOMMENDATIONS

In this section, we try to devise practical solutions for the weaknesses noted above, while supporting the answers to the various questions formulated above, on the basis of our qualitative study.

3.1. The cultural dimension

Implementing change management as early as possible in the project: change management is an essential point for the success of a project. Our results show that it is increasingly integrated into projects. However, it often comes in late, which reduces the potential for user acceptance. Involving change management from the design phase of the tool seems to be a good way of increasing the potential for acceptance and reducing the risks of rejection. Involve the users who best represent the business processes and at each phase of the project: user involvement is also identified as a determining factor. However, it is necessary to involve the right end-users: those who are most representative of the reality of the business, and not representatives who have a less "hands-on" approach and therefore less mastery of the business processes and their specificities. Communicate about the project from the pre-sales phase so that end users feel as involved as possible: change management is often summed up as training during projects. However, a determining factor for the acceptance of the solution is communication. Users who are informed in advance and throughout the project will be better prepared to integrate and accept the new tool. Training users throughout the project, not just during the deployment phase: focus on short training sessions spread throughout the project. User training often takes place at the end of the project, during the deployment phase. Users would be more likely to understand the modernisation or integration work if they have the opportunity to handle the tool as soon as possible. This would make them feel more comfortable during the deployment phase. Regular, short training sessions were also found to be more effective than occasional, highly concentrated training sessions.

3.2. The strategique dimension

Identify the needs at the finest level and review them throughout the project: as public sector projects are long, it is important to ensure that the needs do not change radically during the project. Regular updating of the requirements would allow the solution to be adapted to any changes (regulatory or structural, for example). Measuring user satisfaction after the deployment of the solution: the perception of the tool during the project is a highlighted subject. However, it is necessary to continue to measure this satisfaction after the deployment in order to measure the degree of appropriation of the solution and to check that it corresponds to the organisation's practices. Users will also feel followed and involved.

3.3. The marketing dimension

Using key users from the beginning of the project as ambassadors to motivate and get others to adapt to the project: selecting key users from the beginning of the project will improve user perception. If these "ambassadors" are well trained and informed, their perception will be positive. Positive feedback from users is more likely to be taken into account than feedback from integration consultants or line managers. Implementing an ergonomic and user-friendly tool: the ergonomics and ease of use of the solution are important factors that can improve user perception. Users, by discovering a solution that is ergonomic and corresponds to their usage needs, will have a positive perception of the tool. The key is to add value in comparison to their current processes.

3.4. The structural dimension

Identify and communicate on organisational impacts from the pre-sales phase and implement the necessary actions: the organisational impacts of implementing a new system are often identified during the project. The consequences are therefore identified and dealt with in parallel with the implementation of the solution. For many, these changes are the cause of rejection of the tool. Businesses are modified and reorganised, which causes users to misunderstand. It is important to identify the impact of these reorganisations and to communicate as soon as possible to users about the changes in their daily lives so that they have time to assimilate them. Organise the retraining of people whose jobs are to be abolished in order to train them for other jobs in the company: the jobs affected by structural reorganisation will inevitably be changed. Supporting and training the people affected is a structuring element so that they do not feel "pushed out".

4. CONCLUSION

The key success factors for ERP implementation are numerous, regardless of the sector, but some are specific and very important for the public sector. This sector is indeed a little more complex, it is very structured, regulations are very present and evolve rapidly and the deadlines are often very long. The objective of this study was to gain a better understanding of the issues and challenges faced by the public sector in introducing ERP systems. Key success factors were identified and recommended for the implementation of new systems. This research project has shown that it is important to implement change management as soon as possible to increase the acceptance rate of users. Users need to be involved in the process, especially those who are in favour of change. Key users should be used from the beginning of the project as ambassadors to motivate those who are less accepting of the project. Communication and training around the project are also very important from the beginning in order to prepare all stakeholders. The very specific identification of needs from the outset and throughout the project conditions the progress of the project. Evaluating user satisfaction also makes it possible to adapt the solutions and make them evolve in the right direction. The tool must of course be developed with good ergonomics and must be as easy to use as possible. Finally, the project will have an impact on the payroll, so it is necessary to plan in advance for the retraining of the people affected. To go further we could have conducted group interviews to create a debate between people and compare their different points of view, as we noticed some points of disagreement between the different interviews. A quantitative questionnaire could also deepen the view of the key success factors in order to confirm our results.

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IMPACT OF THE COVID-19 PANDEMIC ON CONSUMER BEHAVIOR: LITERATURE REVIEW

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ABSTRACT

The year 2020 was marked by the most destabilizing event that humanity has experienced in recent decades. It is the Covid-19 pandemic, which first appeared in the Chinese city of Wuhan, and then spread its wings around the world. This unprecedented situation has had a severe impact on consumer habits and behavior. The objective of this paper is to examine the perceived dynamics of these habits based on a review of consumer literature worldwide and in Morocco in particular. Our work is the result of reading 40 articles published in scientific journals, dealing with consumer behavior since the outbreak of the Covid19 pandemic. The main objective is to describe, synthesize and analyze the existing literature in order to detect the gap that could be the subject of future research. Based on a descriptive analysis, and after gathering common findings across articles, we divided the impact of the Covid19 pandemic on consumer behavior into three key components: Shopping, e-commerce, and food. At the beginning of the pandemic, a situation marked by panic and uncertainty, consumers adopted a behavior of stocking up on necessities and hygiene products. On the other hand, the sale of luxury goods dropped considerably. Consumers also used a new channel, e-commerce, and home delivery was part of their daily routine. After an analysis of previous research related to our research problem, the question of the new post-Covid consumer model was only weakly addressed, this could be the subject of future research.

Keywords: *Consumer behavior, Consumer habits, Covid Pandemic*

1. INTRODUCTION

Since the dawn of time, mankind has had to face several tragic events that have disrupted the lives of mankind during its time on earth; natural disasters, wars and pandemics. The impulsive catastrophe, which has created enormous destruction in the lives of citizens, is the Covid19 pandemic, often considered by professionals to be the "Black Swan" of the year 2020. Humans, being social by nature, are constantly interacting with others, which has accelerated the spread of the Covid19 virus. In order to limit this hemorrhage, several strict sanitary measures have been put in place internationally. Containment, social distancing, closure of schools, businesses and enclosed spaces... This particular situation is accompanied by a huge change in consumer behavior and daily life. The outbreak of the Covid19 health crisis led to unusual purchasing behavior. Consumers focused their purchases on basic necessities and hygiene products. They adopted a behavior of stocking up on products, mitigated by the total or partial shutdown of production, which had impacted the supply chain. The consumer is shopping more consciously; therefore, the sale of luxury goods and non-essential goods has experienced an inestimable drop.

Following the closure of shops and/or the change of their opening hours, and in order to avoid contamination at the points of sale, the consumer has used a new supply channel, which is e-commerce, and this has accelerated the digitization of services for citizens. Some consumers, late adopters of this new digital channel, have welcomed the speed and security offered by the technology. Consumers have become health conscious and in order to strengthen their immunity, they have adopted a healthy diet. In this sense, food supplements and medicinal plants have experienced a strong demand. On the other hand, during the period of confinement, home delivery of meals was part of the consumer's daily life following the closure of restaurants. The objective of this article is to detail the impact of the Covid 19 pandemic on consumer purchasing behavior and consumption patterns based on a literature review. Our research is mainly based on recent studies since the outbreak of the Covid19 pandemic in early 2020. This scientific work was developed following a series of steps common to systematic literature reviews. First, we started the search for scientific articles, browsed on consumer behavior during the covid19 pandemic, published between the year 2020 and the year 2022. This search was launched on reputable databases in the field of scientific research that offers a good balance between quality and coverage, including Scopus, Google Scholar, Web of science, Science direct...using two key terms "Covid19" and "Consumer behavior" simultaneously. As the search process progressed, other terms were added: shopping, e-commerce, home delivery, and storage. The uploaded articles were then reviewed for relevance, content and scientific legitimacy. These works must also demonstrate an acceptable level of quality. After filtering out inappropriate articles, 40 relevant articles were reviewed, while few research papers addressed the issue of "consumer behavior" and the "COVID-19 pandemic."

The methodology adopted is summarized in the figure below:

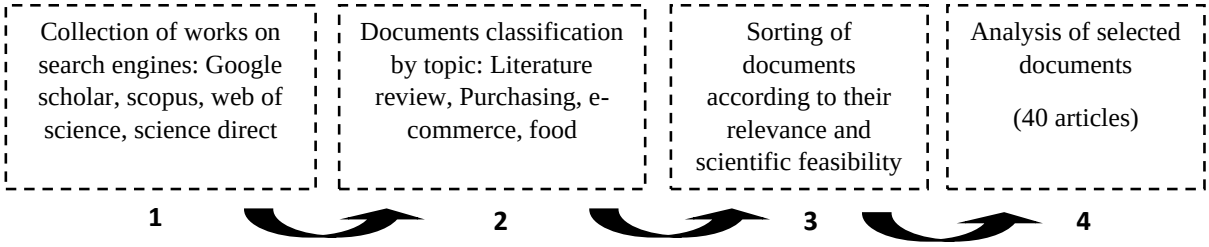

Figure 1: Methodology of the paper
(Source: Meryeme Ajlani, 2022)

The table below outlines the main changes in consumer behavior and consumption patterns according to our literature review. These changes have been broken down into three key headings: Consumer Buying Behavior, E-Commerce, and Food.

Table following on the next page

Dimension studied	Authors	Purpose of the study	Key findings
Consumer purchasing behavior	Martinez.U.J.V., Mediano.J.M., & Rodriguez.A.L.L. (2021)	Studying the impact of the Covid19 pandemic on consumers' motivation and behavior.	* CPB change during crisis because of a change in the perceived levels of risk * Increase of basic goods (Non-persishable & hygiene products) *Postpone luxury products & Decrease leisure services. *Concentrating all purchases in one trip.
	Laato.S., Islam.A.K.M.N., Farooq.A., & Dhir.A. (2020)	Proposing a structurel model to explain unusual purchases, based on the stimulus-organism- response framework.	*Consumer behavior change occurs when environmental stimuli change. * A clear relation between intention to sef-isolate and intention to make unusual purchases. * New habits like public policy, digital technology and changing demographics.
	Sheth.J. (2020)	To examine the impact of Covid-19 pandemic on consumer beahavior, and changes in consumption habits.	*First effect is hoarding: Stockpiling essentiel products for daily consumption. *Postpone purchase and consumption of discretionary products. * Increase in purchasing products which are boosting immunity
E-commerce	Kawasaki.T., Wakashima.H., & Shibasaki.R. (2021)	Analyzing the changes in Japanese consumers toward the use of e-commerce.	*Transition from physical to online stores. *Positive correlation between stay-at-home duration and the necessity of e-commerce. * e-commerce usage is expected to continue to grow in the future.
	Guthrie.G., Wamba.S.F., & Arnaud.J.B. (2021)	To explore how online purchasing behavior envolved during the covid19 pandemic.	*Increase of online purchases of personal care and well-being products. * The pandemic has accelerated a trend towards e-commerce. * After the lockdown period, online purchases of essential goods remained stable.
	Bonilla.F.F., Gijon.G., & Vega.B.D. (2021)	Analyzing the determinants for developing e-trust for using digital resources.	*E-trust show a huge impact on the consumers' final decision. *More e-trust equals more e-commerce. *Women are less interested in e-commerce in Spain.
Food	Ben hassan. T., El Bilali.H., S.Allahyari M., & Berjan S. (2021)	Studying changes in consumer eating habits in russia following the occurrence of the covid19 pandemic	*Increase in home cooking and decrease in ready meal use. *Eating with family. * Move toward healthier diets * Stockpiling of non-perishable food. *Reduction in food waste
	Chenarides.L., Grebitus.C., Lusk.J.L.,Printezis.I. (2020)	Investigating food shopping behaviors and consumption during the pandemic lockdown.	*Decrease in purchasing premade salads and dining out. *Increase in food safety concerns. * Increase in the consumption of fresh produce and diary among households with children.
	Sun.X., Su.W., & Tian.Z. (2021)	Studying green consumption behavior based on the theory of awe "emotion-cognition-behavior"	*Positive awe of Covid19 serve as motivator for pririoritizing nature and green consumption. *Negative emotions let consumers to pay more attention to themselves. * Increase in purchasing products which are boosting immunity.

Table 1: Effects on consumer behavior and consumption patterns
(Source: Meryeme Ajlani, 2022)

2. COVID19 AND CONSUMER PURCHASING BEHAVIOR

In March 2020, the World Health Organization declared the Covid19 epidemic to be a global pandemic. This sense of threat has triggered atypical consumer behavior observed around the world. In Morocco, a scene of panic was seen in supermarkets and strange images made the rounds of the web: sparse shelves, empty shelves and consumers filled their carts in anticipation of a possible shortage of products. This irrational behavior was also seen in the United States, when household spending peaked at 845% between February and March of this year, according to NCSolutions. Previous studies agree that when a crisis occurs, regardless of its nature, consumers change their purchasing behavior and consumption patterns. The Covid19 pandemic, for its part, a situation marked by fear and uncertainty, aroused hoarding behavior in consumers. This behavior is defined as "the action of accumulating and saving a large number of goods for future use" (Chu, 2018). It is a common response to manage the uncertainty of future supply of necessities when a country experiences hyperinflation (Sheth, 2020). (Colleen and Laura, 2020) adopted the Reacting- Coping and Adapting approach to try to explain the change in behavior and consumption patterns during the Covid19 pandemic.

During the Reacting stage, the phenomenon of hoarding resulted in aggressive behaviors by some individuals. "Consumers stockpile essential products for their daily consumption, resulting in stock-outs and temporary shortages. These products contain toilet paper, bread, water, meat, disinfectants and hygiene products" (Sheth, 2020). (S.laato, N.Islam, A. Farouq and A.Dhir 2020), on the other hand, adopted the Stimuli-Organism-Respons (SOR) model, developed by Mehrabian and Russel in 1974, to analyze consumer buying behavior. This model states that "behavior occurs in an environment that consists of stimuli. Stimuli affect the organism, specifically the cognitive and affective processes of consumers, which then result in a behavioral response." In the context of the Covid19 pandemic, the authors suggest that stimuli should be the sources of information from which the consumer discovers the pandemic. In 2021, the study conducted by (J.V.Martinez, J.M.Mediano, L.Rodriguez) on the impact of the Covid19 crisis on consumer buying behavior and motivation, revealed changes in the frequency of visits to the points of sale. Indeed, consumers concentrate their purchases in one trip and in sufficient quantity to avoid the risk of contamination. The authors also concluded that spending on non-perishable goods and hygiene products increased remarkably, while purchases of luxury goods, travel and leisure services were postponed to a later date.

3. COVID19 AND E-COMMERCE

The Covid19 pandemic took the world by surprise, and the virus was circulating at full speed. To slow its spread, stay-at-home, distance learning and telecommuting were encouraged. "The physical stores of most businesses were closed, except for those stores needed to meet basic needs and operate critical infrastructure. Despite this closure, the majority of restrictions did not apply to e-commerce operations" (F.follak et al 2022). This new lifestyle has driven consumers to a new shopping channel that is e-commerce. E-commerce can be defined as "any transaction carried out through a computer network that involves the transfer of property rights or the right to use goods or services" (Mesenbourg, 2001). It could also be defined as "the use of the Internet to buy, sell or support products and services, not only in an economic exchange but also in an exchange of information and after-sales service" (Garin-Munoz and Perez Amaral, 2011). That said, "Electronic purchasing includes any commercial activity even if the payment is not made online" (A.Bourchich, 2021). The Covid 19 pandemic significantly impacted e-commerce worldwide. (Beck and Hensher, 2020) observed that online grocery shopping increased with the occurrence of the covid19 pandemic in Australia. (Bhatti et al 2020) reported in their article that e-commerce is a substitute for retail stores. (Akhtar et al 2020) identified a strong relationship between covid19 restrictions and consumers' psychological reactions to offline shopping. In Korea, (Bae and shin, 2020) surveyed users of contactless services to examine their consumption patterns. Similarly, the Seoul institute 2020 reports that online shopping increased by the equivalent of US$1.06 billion, with a continuous increase from March to June. In Morocco, according to reports from the CMI (Interbank Monetary Center), e-commerce activity grew by 22.2% in number and 25.3% in volume during the first quarter of 2020 compared to the same period last year. Internet payment activity has remained on a strong upward trend with an increase of +48.4% in the number of transactions and +30.5% in the total amount during the first 9 months of 2021 compared to the same period of the year 2020. According to a survey conducted in Morocco by the firm Research and quality consulting, "several brands have created e-commerce windows, hosted on their websites or in partnership with marketplaces. The investigators add that "the practice of e-commerce already existed in the Moroccan consumer before the occurrence of the pandemic Covid19, but it has increased following the confinement with a preponderance of the use of cash. On the other hand, 46% of respondents have stopped shopping online after the lifting of the containment, reports the same source. General trends in the e-commerce sector have shown gradual growth since the advent of covid19.

However, this practice remains timid due to several limitations that push the consumer to take the traditional shopping route. According to the study conducted by (Fernando Fernandez bonilla in Spain, 2020) "consumer confidence has a strong impact on the final consumer decision". The risks perceived in relation to the Internet can constitute as many potential brakes or sources of resistance to the innovation for the non-initiated (Ram, 1987). According to the study of (El Bayed.H, 2020) based on the work of (Cases, 2002), the perceived risks with regard to the online purchase can be related to the technical or functional risk which consists in the disappointment of the consumer compared to his expectations with regard to the product, to the financial risk related to the loss of money in the event of a bad purchase, to the risk of delivery of the product, to the risk related to the private life and to the confidential information revealed on Internet, and finally to the risk of fraud related to the credibility of the merchant site. The Covid19 pandemic gave e-commerce a boost. Given the closure of retail outlets for an unpredictable period of time, companies were under pressure to optimize sales and distribution channels, and e-commerce was the only alternative for market survival. The study of post-Covid online shopping trends may be the subject of future research.

4. COVID19 AND FOOD

It is clear that consumers are becoming more health conscious, thanks to the popularization of medical jargon, the accessibility of information on the internet, and the role of the media and social networks in raising awareness. Recent studies have shown that consumer perceptions and behavior are shifting toward greater safety, health, and environmental friendliness during the Covid pandemic19 (Yang,Y; Li, O; Peng,X; Wang;L; 2020). According to the "emotion-cognition-behavior" awe theory developed by (X.Sun, 2021), negative emotions such as fear and sense of threat lead individuals to take care of themselves and their families, which was seen during the Covid19 pandemic. Consumers tend to choose healthy products to preserve their health and boost their immunity. It should be noted that many consumption patterns prior to the outbreak of the covid19 pandemic, including the purchase of prepared salads or other fresh meals and eating out, have been affected due to food safety issues and changes in working conditions (L. Chenarides and I. Printezis, 2020). The authors add that during the covid19 pandemic, consumers with children in their households consume more fresh produce, dairy products and cereals. According to (K.Chikhi, 2021), the purchase and consumption of aromatic and medicinal plants, have experienced a remarkable increase at the beginning of the alert related to the pandemic in Algeria. The author adds the growth of the consumption of food supplements, in particular vitamin C, Zinc... because of the supposed role of micronutrients in the reinforcement of the immunity of the individual to face this pandemic. The Covid19 pandemic and accompanying health measures have revealed new consumption patterns. Consumers have shifted from eating away from home to eating at home, resulting in the use of home-based meal preparation and baking. This new trend is an entertaining activity for family members. According to the results of the study by (Ben Hassan and al, 2020), Russian consumers moved toward healthy diets. They reduced their consumption of unhealthy foods such as snacks, cakes, and pastries during the pandemic and adopted healthier consumption patterns, including more fruits and vegetables. Russian consumers tend to use home delivery to avoid the risk of contamination and time wasted standing in line at restaurants (Deloitte, 2020). Despite these changes, some consumers prefer to follow the traditional shopping process to check the quality and freshness of food. The choice of consumers in terms of points of sale, particularly for the purchase of food products, is strongly influenced by the permanent search for good health. This quest is reinforced in times of crisis with all the media coverage that comes with it. In Romania, "mobile applications are an alternative strategy for restaurants and food delivery services to increase turnover and the opportunity for consumers to conveniently receive products and services" (A.Burela;S.Puiu; A. Dinu).

Another key point identified in the online food delivery sector concerns the heavy traffic and longer delivery times that reduce customer satisfaction and frequency of use of the FDA, the same authors add. It should be noted that this period of confinement has closed a certain innovation of consumers especially the most rational and informed in the supply, cooking, storage and management of leftovers, which has allowed to maintain the psychological and social well-being and all by reducing waste.

5. CONCLUSION

Based on the literature review, the Covid19 pandemic is circulating worldwide with one face. Unusual behaviors have been observed globally; consumers have changed their shopping preferences and adopted a new diet. The pandemic has also boosted e-commerce and home delivery has become a part of consumers' daily lives. However, the issue of the post-Covid consumer model has been little addressed. This literature review is a reference that can provide some answers on the aspects of change in consumer behavior and consumption habits related to the Covid19 pandemic. However, we have not been able to highlight all aspects of change in this article due to time constraints, and these areas may be the subject of future research. It should also be noted that the topic is new and research on it is limited, especially in the context of Morocco. In conclusion, we would like to ask the following question: Would the consumer maintain these habits after the return to normal? Or would these habits disappear and the consumer would return to his old way of life? No one has a crystal ball to predict the future. However, thinking about new consumer trends after the return to "the new normal" could be the subject of future research.

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TOWARDS A MOROCCAN POLICY OF ECONOMIC INTELLIGENCE FAVORABLE TO REGIONAL DEVELOPMENT

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ABSTRACT

Like businesses, local and regional authorities need to know how to react to the changes in today's economy and the diversity of risks and dynamics of today's economy. In this sense, Territorial Economic Intelligence is a strategic approach that allows decision-makers to understand better their increasingly complex and uncertain environment. Since 1990, Morocco has carried out many activities in the economic intelligence. However, the lack of a clear vision and coordinated actions that reflect the realities and particularities of the Moroccan regions, the strategic consecration of EI to purely security purposes while giving priority to the areas of information intelligence and intelligence. Similarly, the delay in implementing the advanced regionalization adopted in 2015 may be one of the reasons for the lack of a clear and forward-looking national policy of territorial economic intelligence geared towards regional development. Throughout our paper, we have highlighted a series of actions and public policies in the territorial economic intelligence. These actions testify to the Kingdom's desire to achieve territorialized regional development adapted to the specific characteristics and identity of each region. In addition, we will take this opportunity to highlight the cultural, legal, organizational, and economic barriers to the emergence of a national policy of territorial economic intelligence in which each region will have the privilege of devising its development vision.

Keywords: *Regional Development, Territorial Competitive Intelligence, Moroccan Competitive Intelligence*

1. INTRODUCTION

In a globalised environment, subject to increasing competition, Morocco, like other nations, is concerned with developing strategies and policies that will enable it to demonstrate its new capacities as an economic, cultural and technological power in order to ensure the sustainability of its development. The potential of the Moroccan economy lies not only in its strategic positioning as a gateway to Africa and a bridge to the European continent, as well as its political stability. But also on the diversity and potential of its regions. The Kingdom of Morocco attaches crucial importance to and judiciously monitors the changes and dynamics that are increasingly transforming its regional and international environment. With the advent of information and communication technologies, information is increasingly available and transferable at any time and through different channels. This implies a strategic need for each country or territory to have an agile and efficient approach to the governance of information useful for decision-making. Many political, economic and social strategies and actions have been deployed by the Moroccan State to strengthen and upgrade the competitiveness of the national economy. Therefore, due to the diversity of wealth and potentialities enjoyed by the Moroccan regions, our paper will be an opportunity to reflect on some strategic mechanisms in terms of territorial economic intelligence. Of course, the objective behind the implementation of an EIT approach is to enable regional decision-makers to better identify the particularities and potentialities of each region in order to design a territorialized development perspective.

Furthermore, our article will explain, through the State strategies applied at the regional level, the political and economic will of the Kingdom to develop an economic intelligence strategy capable of strengthening its competitiveness in priority and strategic economic sectors. However, despite the fact that this practice has been adopted in Morocco since the 1990s, particularly in large groups and multinationals that aim to maintain and develop their economic facilities internationally. It appears that in Morocco, this practice has not yet reached a sufficient degree of maturity to speak of a national economic intelligence strategy. Capitalising on the Moroccan context, our paper will be dedicated to shedding light on the State actions deployed by the Kingdom, in terms of territorial economic intelligence. Moreover, this article is interested in the study of the causal relationship that traces the impact of territorial economic intelligence on regional development. Moreover, an effective implementation of this approach requires to overcome multiple types of obstacles which hinder, indeed, its effective deployment at the regional level. Through this article, we will emphasize certain obstacles which mark the Moroccan context in a strategic perspective to invite the public decision makers to bring the necessary actions and to invite the researchers and the academics to carry out more scientific reflections on this question.

2. TERRITORIAL ECONOMIC INTELLIGENCE: BETWEEN STATE INTERVENTION AND TERRITORIAL DYNAMICS

2.1. The operational forms of the State in terms of territorial economic intelligence

Economic intelligence is a powerful service to the strategy and competitiveness of nations. This practice is based on an orderly process designed to provide decision-makers with useful information to inform them (MARTRE et al. 1994; SAWKA, 1996; ROUACH, 2010). It also makes it possible to make decisions based on real knowledge of the facts. In Morocco, economic intelligence has not yet reached the expected level of maturity. However, it has been practiced since the 1990s by major groups and banks involved in international development to ensure their competitiveness and strengthen their economic security. But long before discussing the potential of territorial economic intelligence practices in Morocco, it seems to us useful to focus on three operational forms of the expectations of businesses vis-à-vis the State in the field of economic intelligence (cf. Philippe Caduc), namely:

- **The anticipatory state** capable of assessing and building strategic visions. This confirms the need for public foresight studies of cardinal technological and industrial issues related to the exploitation of emerging markets and the exploration of technologies of the future. Companies expect the State to provide insights on such issues in the medium and long term.
- **The State that provides information and expertise.** It is in this perspective that the State is the main producer of information; however, the multiplication of actors producing information leads to dispersion and failure to exploit it most properly. Greater readability and a more coordinated and operational availability of knowledge is necessary for economic agents to better define the useful information for decision-making.
- **The accompanying State,** can offer its companies operational keys to help them conquer foreign markets. For example, industry players would appreciate practical guides setting out, sector by sector, the conditions for access to and influence on several foreign markets (including local decision-making circuits, maps of key decision-makers, methods for effective lobbying, identification of French public and private support points in the area under consideration, etc.).

Indeed, public action is crucial and confirms its major importance in the integrated development of territories and their actors. This prompts Michael to ask a rather important question: why do firms located in certain countries occupy the top of global competition in specific segments and sectors of activity?

2.2. Determinants of the economic development of a territory

Any development theory should not take into account only economic factors. It is essential that this theory also be based on the internal organization of States, the institutions, attitudes, and history of each territory. Hence, we can never speak of a valid theory for all countries. We have identified four (4) interdependent determinants of economic development: the institutional environment, physical capital, human capital, and infrastructure.

	Fundamentalhypothesis	Authors	Recommendations
Physical Capital	Investment in physical capital is a fundamental source of economic growth	Guellec& Ralle (1995) Mckinnon (1973), Keynes (1969)	Mobilise domestic and external savings to finance the national economy.
Human Capital	Knowledge, skills and competences are a key asset to support economic growth and development.	Ricardo (1817) Schultz (1961) Becker (1964) Smith (1776) Roemer (1990) Lucas (1988)	Increasing local capacity: schooling, further education, apprenticeships, qualifications, etc.
Infrastructure	Economic development depends on the existence of an efficient physical infrastructure.	Israel (1993) Frank (1969) Myrdal (1959) Amable et Guellec(1992)	Develop sufficient quality and quantity of infrastructure for economic needs.
Environment Institutional	An effective institutional framework creates the right conditions for economic development.	Azam (1993; 1994) Lewis (1954) Rodgers (1994) Veblen (1921) Commons (1934)	Creating an effective legislative framework, effective democratic institutions, an attractive regional framework.

Table 1: The determinants of economic development

3. THE DIMENSIONS OF THE TERRITORIAL ECONOMIC INTELLIGENCE APPROACH IN MOROCCO

Starting from the fact that the main idea around which Porter's work is based is that the essential objective of an economic policy is "to deploy the country's resources (capital and labour) with maximum productivity" (Michael Porter). Overall, the role of the state is to foster general conditions that allow all industries to prosper, provided that firms know how to innovate and improve their productivity (Michael Porter, 1993). From there, it seems essential to underline that the Kingdom of Morocco has implemented multiple policies and strategies by which we can better understand the imminent interest of the Kingdom for the implementation of a territorial economic intelligence approach that will be able to offer a territorialized vision for the development of Moroccan regions. In addition to the fact that the Moroccan model of advanced regionalisation is clearly part of a decentralised democratic state and marks a qualitative leap in the process of democratisation of society. This model also aims to involve the regions in the social, economic and environmental development of the Kingdom while deploying a strategic approach based mainly on the specificities and challenges of each region. The notion of territory is understood here as a space to be redefined in the current context of globalisation. The territory is defined by what it is capable of: "a social place of proximity being built to conceive horizons and projects (...) And the territory, far from being a domain of withdrawal, is called to be a space of relations and opening instituting its own coherence and its link with the world. The effect of proximity (cognitive, institutional, organisational) that characterises the territory helps to create confidence and contributes to the visibility of the issues, initiatives and carriers (...) As a place of human resources, it thus becomes a privileged site for the constitution of social capital. In this way, it will be the basis of tomorrow's governance" (Courlet, 2003).

From this point of view, economic intelligence intervenes in order to help economic actors develop a better knowledge of the market with the aim of better identifying development opportunities and knowing how to act in relation to the risks linked to a given environment. In this perspective, a controlled and optimised flow of information becomes an essential vector for creating wealth. It is in such a context that economic intelligence, originally defined as "all the coordinated actions of research, processing and distribution with a view to its exploitation of information useful to economic players" (Martre Report, 1994, 16), appeared as an approach responding to these new information challenges.

3.1. The terms of a Territorial Economic Intelligence approach oriented towards specialization

Moroccan decision-makers are today more than before led to set up an agile approach of territorial governance, based much more on an anticipatory vision than on an adaptive one, stimulating its foundations of the regional reality while providing a management personalised to this reality. It is important to note that regional profiling allows any region to build up a territorial offer that will highlight the comparative advantages it enjoys. Let's start from the principle of specialisation, as David Ricardo's theory of comparative advantages told us 200 years ago. A country has an interest in specialising in sectors in which it is relatively more efficient, i.e. devoting more working hours to them, so as to export part of its production in exchange for foreign products from other sectors. As each country specialises in the sector in which it is relatively more efficient, world production increases and there is a world price that allows each country to consume more in free trade than in autarky.

3.1.1. The Green Morocco Plan at the heart of the Moroccan vision of creating regional competitiveness clusters: The case of agri-businesses

A better knowledge of its environment, its actors, its potentialities, its stakes and its limits, constitutes a cornerstone in the process of strategic development and competitiveness of regions. We continue in this direction by giving the example of the Green Morocco Plan which was launched in 2008 as the first agricultural strategy deployed in the Kingdom. It aims to intensify agricultural production and stimulate investments in this sector through intervention instruments adapted to the sectors, territories and types of exploitation. And as the agricultural sector in Morocco is the first contributor (about 14%) to the GDP before tourism and industry. Its performance even conditions that of the entire economy. Indeed, the country's growth rate is strongly correlated to that of agricultural production. Moreover, agriculture in Morocco employs nearly half of the active population and provides 23% of the country's exports. The evolution of international economic relations has been marked over the last two decades by two important trends: the globalisation of the economy and the proliferation of regional trade agreements. These trends are explained in particular by the search for markets, the desire to achieve economies of scale and the desire to improve the parameters of competitiveness of national economies. Indeed, given this context, Morocco is involved in a highly competitive global market that is increasingly uncertain and complex. Hence the mandatory recourse to territorial economic intelligence approaches to strengthen the competitiveness of the Moroccan agricultural sector is no longer justified. It is with this in mind that the Kingdom of Morocco has opted to set up agropoles as competitiveness clusters with the aim of creating synergies between players in the agri-food and agri-industrial sector, with multiple skills and references, sharing common values and acting in a coherent manner. This strategic project aims at enhancing the value of the Kingdom's important and diversified agricultural productions with the objective of creating wealth, employment and added value. Below are the main agropoles set up by the Moroccan government as part of the Green Morocco Plan.

Region	***Surface area***	***Research and innovation Center***	***Comparative advantage Vision***
The BeniMellal-Khénifra region (Agropole of BéniMellal)	208 ha 15a 15ca	Representation of the National Institute of Agronomic Research	- Attract 3 billion dirhams of investment and create about 9,000 direct jobs and 20,000 indirect jobs. - Promote agricultural products, mainly the five growing agricultural sectors in the region, namely the olive sector (olive-oil and table olives), the livestock sector (meat and milk), the citrus sector and the market gardening sector (niche products).
The Oriental region (Agropole of Berkane)	102 ha	Research, development and quality control centre.	Attract 1. 25 billion Dh and create 8,000 direct and indirect jobs. -Promote the key sectors: Citrus, Olive, Vine, Almond Cereals Market gardening Milk and red meats
The Fez Meknes region (AgropôlisMeknès)	140ha	Qualipôle alimentation: centre of competence in Research & Development. -Agropole Olivier: competence and innovation hub for the development of the olive sector.	- Enhance and ensure the agro-food processing of diversified crops: fruit trees, olive growing, market gardening, cattle and poultry farming, local products.
The Souss-Massa region	75 ha	-"Qualipôle" comprising research and control laboratories and a training centre.	-Develop the production of the following agricultural sectors: Citrus, Market gardening, Milk and red meat.

Table 2: The main agropoles set up in Morocco
(Source: www.zonesindustrielles.ma - Ministry of Industry, Trade, Investment and Digital Economy - Ministry of Agriculture, Maritime Fishing, Rural Development and Water and Forests)

3.1.2 Morocco tech, a new impetus of specialisation for the Moroccan economy

The international economic situation has evolved rapidly under the effect of the massive development of information and communication technologies (ICT) and the growing importance of innovation. The economic, technical, organisational and social consequences of this development are considerable. Research expenditure is around 2.3 per cent of GDP (PIB) in the OECD area. Spending on product improvement fuels the growth of knowledge-based services, such as engineering and advertising. In this sense, Morocco celebrated this year its new strategic positioning towards a digital economy under its brand"Morocco Tech", a brand by which the Kingdom positions itself as a destination for investment in the information and communication technologies (TIC) sector. This is a strategic action aimed at stimulating the development of infrastructures dedicated mainly to hosting IT competitiveness clusters. We can say that this new positioning of the Moroccan economy will also make it possible to develop and promote the existing device in terms of infrastructures in TIC, namely: Rabat Technopolis, Technopark Casablanca, Technopark Tangier, Technopark Agadir.

3.2. The dynamics of networks as a strategic pillar of territorial economic intelligence

From there, we are at the heart of one of the strategic approaches of territorial economic intelligence: the networking of actors. It is a question here of putting into perspective two approaches of territorial intelligence, the first qualified as "top-down", the second as "bottom-up" (Pélissier, 2008). The first one is the direct declension, at the local level, of the EI concept as it was defined previously. The second is the idea of local recomposition through the synergy of actors sharing common values and goals. Finally, the implementation of an IT approach can consist in favouring the setting up of partnership networks between the public and private

sectors with a view to improving the circulation of strategic information from the former to the latter. This is in particular the vision defended by Raymond Pautrat, who actively contributed as a regional prefect to the development of IT: IT consists of organising the synergy of public authorities at local level and public/private cooperation for the benefit of national power, which today requires economic prosperity. This approach is part of the public reform intended to bring about the emergence of a strategist and partner state (Pautrat, Delbecque, 2008, 16). In this sense, let us take as an example the case of the Souss Massa agropole, which is the result of an institutional partnership between the Ministry of the Interior, the Ministry of Economy and Finance, the Ministry of Agriculture and Maritime Fishing, the Ministry of Industry, the CDG group, Haliopolis, which is a mixed public-private company. It is a model of capital partnership between the Souss Massa Region, Medz and the banking sector through the Agricultural Credit of Morocco. This vision illustrates the top-down approach of IT as previously mentioned, considering the territories as a space of continuity of the economic intelligence policy carried out at the national level: defensive aspect to counter traditional threats and new risks or to protect the material and immaterial heritage; offensive aspect to give the company the means to develop and remain competitive. On the other hand, the bottom-up approach of IT apprehends the territory as a space of valorization of constructed resources (history, knowledge, culture, identity, etc.) according to an endogenous logic and favours the sharing of information according to a cooperative logic. Yann Bertacchini (2006) assimilates this understanding of territorial intelligence to a phenomenon of appropriation of the territory's resources and then of transfer of competences between categories of local actors of different cultures. The territories become local resorts of dynamism and actors of their own development. Considering the considerable impact of networks in the co-creation of value, the challenge of networks (in the form of clusters) is to promote cooperation synergies between heterogeneous actors belonging to distinct sectors and cultures and more or less anchored in the territory. These communities of practice (Wenger, 1998) represent groups of individuals sharing the same interests and/or the same problems. They deepen and enrich their knowledge and expertise through regular interaction. The challenge is to build 'bridges' between different 'cliques' of actors grouped around these communities. The communities of practice that make up a network are characterised by the existence of strong links between their members. After discussing the multiple dimensions of the bottom-up approach of the EIT and the importance of the cooperative approach and networks within a territory, it seems to us that it is of major importance to have a strong network of networks. It seems to us of major importance to shed light on the concept of the "learning" territory. In management sciences, David-A. Gavin has defined a "learning" organisation as one that continuously develops its learning capacity, notably through action and experimentation, regulation, feedback and collective memory. Therefore, the territory must develop its capacity to create, acquire and transfer knowledge, and to modify its behaviour according to new knowledge. For Alain Bouvier: "an intelligent or learning organisation is a system of action and management of action that organises itself to learn continuously through its work, to capitalise on its know-how and skills, to pass them on and to transform itself voluntarily in order to achieve its objectives according to the changes in its environment, its resources, its culture and the representations of the groups of actors within it".

3.2.1. The reform of the Regional Investment Centres :Towards a federation of regional actors

In this perspective of strengthening the competitiveness of the national economy and Moroccan SMEs, the arsenal of national TEI approaches has received a real boost through the birth of Law 47-18 on the reform of regional investment centres and the creation of Unified Regional Investment Commissions. (B.O. n° 6754 of 21 February 2019). In this sense, this reform aims to create a synergy of collaboration and mutualisation of regional actors through the

establishment of the CRUI, which will replace all the regional and provincial commissions involved in the process of managing investment projects. It is a single commission whose main mission is to evaluate, study and process all investment files. Henceforth, the CRIs are intended to contribute to the implementation of the State's policy in terms of developing, encouraging, promoting and attracting investments at the regional level and providing overall support to companies, particularly SMEs. The objective is to create a regional dynamic favorable to economic growth through the promotion of investment and the active mobilisation of regional actors. As a single desk, each regional investment centre has as its main missions:

	Missions	**Actions**
THE CRI MISSIONS	**Single DESK**	- Receive and review investment and the related administrative acts in and related administrative acts in coordination with administrations and bodies concerned; - Develop and administer electronic platforms dedicated to investment at regional level;
	SUPPORT FOR INVESTORS AND COMPANIES	- Assisting investors and Accompanying them in obtaining authorisations and Administrative acts necessary; - Ensure the follow-up of the companies, in particular SMEs and accompany them in their development but also to enable them to cope with difficulties; - Follow up on projects and agreements related to investment.
	AMICABLE SETTLEMENT OF DISPUTES	- Carrying out conciliation with a view to reaching an amicable settlement of disputes between investors and administrations and public bodies concerned.
	ECONOMIC IMPETUS AND TERRITORIAL OFFER	- Ensure a regional economic intelligence ; - Contribute to the development, implementation of regional development strategies and plans for promotion and attractiveness of the region ; - Build up a database of on investment opportunities and make it available to investors; - To make available to investors And companies, particularly SMEs, by any available means, the information of a public nature.

Table 3: The main missions of the Regional Investment Centers in Morocco

3.2.2. The National Business Environment Committee, a new boost to the Kingdom's economic competitiveness and a challenge of regional variation

To give a new impetus to the Kingdom's economic competitiveness, and to guarantee a transparent and investment-friendly framework, the Kingdom of Morocco has undertaken the establishment of a dedicated institutionalized framework, notably through the creation of the National Committee on Business Environment (CNEA). This body, chaired by the Head of Government, has thus been institutionalized by decree and constitutes a platform for coordinating and monitoring cross-cutting reforms related to the business environment. However, although all the measures and provisions put in place by the CNEA are important, they could not have concrete results in the absence of a regional declination carried out by a

charter establishing the Regional Committee for Business Environment (CREA). The objective of the CREA-BMK is to improve the business climate at the regional level. The establishment of this regional committee will help to better address issues and barriers related to the business and investment environment at the regional level and strengthen the legislative and regulatory framework for the business environment. Since the establishment of the National Business Environment Committee (CNEA) in 2009, several projects have been accelerated, mentioning only legislative texts already published in the Official Bulletin, simplified administrative procedures, or dematerialized physical procedures. These reforms have had a double positive impact: on the life of the company and the international image of our country, through international reports, in particular the World Bank's Doing Business and the publication of the World Economic Forum. The CNEA is today, the only public-private dialog platform for improving the business climate and monitoring Morocco's image internationally. It is a force for proposing, guiding implementation, and evaluating reforms at both national and regional levels, in close collaboration with the Regional Business Environment Committee (CREA). A co-constructed diagnosis with public and private sector representatives identified twelve main types of constraints (referred to as "macro-constraints") related to the business environment, which can be grouped into three categories:

- A relatively complex and inflexible business environment;
- An insufficiently collaborative and inclusive business environment;
- A business environment affected by the Covid-19 crisis, and which will require a review of priorities.

Beyond these three categories of constraints, a fourth transverse problem was identified. It concerns the complexity of governance and communication between all stakeholders involved in business environment issues. This will reinforce the interest in aligning stakeholders with a common vision and policy for the business environment in Morocco.

4. CONCLUSION: CRITICAL REVIEW OF THE OPERATIONALITY OF TERRITORIAL ECONOMIC INTELLIGENCE PRACTICES IN MOROCCO

Morocco, as a unitary nation-State, has adopted the basic premise of the dissociability and close organic link between regional construction and national and state construction, considering that the general economy of the advanced regionalization model is dialectically linked and intertwined with the national development model. However, this representation must be concrete through a series of coordinated and clear actions to support and equip the regions with the instruments needed to enable each region to build a territorial vision favorable to its development. In the age of the knowledge-based economy, information has become the core of all decision-making. Nevertheless, our regional actors continue to favor and express a "cultural" attachment to financial and logistical means as an essential basis for any decision-making process. In the age of a knowledge-based economy, information has become the core of any decision-making process. Nevertheless, our regional actors still prioritize and express a "cultural" attachment to financial and logistical means as an essential basis in any decision-making process.Any territorial economic intelligence initiative requires, above all, a collective awareness of the strategic importance of this initiative among all public and private stakeholders within a territory. It is to be noted that economic intelligence contributes positively to the development of the competitiveness of enterprises as a mechanism of economic growth for the territories through the creation of value and employment. However, the importance of this practice is not yet better understood among Moroccan SMEs and remains well answered than among large companies and multinationals. In Morocco, non-exchange of information predominates and is considered the norm.

To the extent that the cultural need and social sensitivity to the collection and collection of information create a real reluctance to share information among individuals. However, considering, on the one hand, this informative behavior is not conducive to the success of a territorial economic intelligence initiative whose sharing, building, and sharing of knowledge between the actors is a pillar of strategic decision-making. Moreover, as Morocco is engaged in a globalized knowledge-based economy, awareness-raising approaches should be promoted among public actors to help them better understand the different dimensions and strategic uses of information and its impact on decision-making. As explained in our paper, networks are a real opportunity for exchange and sharing, enabling actors to align around a common culture and shared values. The purpose of networks does not only require the commitment of institutional stakeholders. From this point of view, we recommend the development of networks dedicated and adapted to Moroccan territorial circumstances. Public-private partnerships should be activated and multiplied and civil society should be more involved in regional development as the primary clients of public policies. Admittedly, territorial marketing is a fundamental component of any territorial economic intelligence initiative. It helps to promote the attractiveness of regions by developing a territorial offer that is competitive vis-à-vis competing for territories. However, this practice has been timidly adopted by Moroccan regional actors and it boils down to the elaboration of slogans and the creation of logos. This means that territorial marketing is considered the equivalent of territorial branding. We quote subtitles of some Moroccan territorial trademarks, namely: WE CASABLANCA (the Casablanca-Settat region) – HEART OF MOROCCO (the BeniMellal-Khenifra region) – CHAMAL (the Tangier-Tetouan-Al Hoceima region).

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THE IMPACT OF DIGITALIZATION ON POVERTY ENTREPRENEURSHIP AND SOCIAL EXCLUSION IN DEVELOPING COUNTRIES, CASE OF MOROCCO: A LITERATURE REVIEW AND FUTURE RESEARCH DIRECTIONS

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ABSTRACT

In the era of global digitalization, entrepreneurs have thrived to achieve their best performances wielding all forms of digitalization yet the issue regarding poverty never seemed to be solved and even worsened after the emergence of COVID 19. Not to mention the fact that, historically, the entrepreneurial literature in the context of poverty has shied away from major issues surrounding poverty. Entrepreneurship is frequently regarded as a critical tool for addressing the persistent problem of poverty in developing countries. People in emerging countries are significantly more entrepreneurial than people in developed ones, according to numerous research. Moreover, their entrepreneurial abilities are put to the test significantly more frequently and intensely than those of their developed-country peers. From the other perspective, these more entrepreneurial countries are more impoverished and more susceptible. Is the scarcity of digitalization within those countries to blame for this problem? This is a theoretical study that relied on secondary data from journals, textbooks, internet sites, and government documents in order to conduct a literature review and identify our research problem. We took interest in different contexts based on country approach, we selected recent studies conducted in several developing countries such as India, Nigeria and KwaZulu-Natal province as a base to our research. In this study, we are interested in exploring the correlation between digitization, entrepreneurship, we also examine how the adoption of digital technologies by the vulnerable entrepreneurs will enhance their social inclusion and reduce their poverty.

Keywords: *Developing countries, Digitalization, Digital technology, Entrepreneurship, Social exclusion*

1. INTRODUCTION

Fostering entrepreneurship is commonly cited as a major policy priority for increasing job and income opportunities while reducing poverty (Cho and Honorati, 2013). Not to mention that the majority of people seeking entrepreneurial activities are impoverished, and the explanation for this behavior is obvious: being an entrepreneur is frequently easier than finding an employer to work for, if you have few skills and little funds (Banerjee and Duflo, 2007). Furthermore, in Sub-Saharan Africa and South Asia, farmers and non-agricultural self-employed people make for three-quarters of the workforce; the global average is around 50% (Newhouse, 2013). The majority of self-employed employees who take this path are either rationed out of wage jobs or forced to quit their positions (Fields, 1990), or because they appreciate the flexibility and autonomy of working for themselves (Maloney, 2003).

In any event, it's critical not to glamorize these underserved business owners. Because they don't have any money, borrowing is hazardous, and no one wants to lend to them, their firms are unavoidably small, to the point where economies of scale are visibly unrealized (Banerjee and Duflo, 2007). Given that a lack of resources leads to poverty, ensuring that resources are available permits the entrepreneurship to thrive (Sutter, Bruton and Chen, 2019), When entrepreneurship is encouraged, the value gained by the entrepreneur in the form of income and resources will aid in the reduction of poverty and the enhancement of life satisfaction (Kimmitt, Muñoz and Newbery, 2020). There are two perspectives to assess the role of digitalization on entrepreneurship intentions (Ben Youssef *et al.*, 2021). The first is that an entrepreneurial activity's potential influences one's desire to become an entrepreneur (Ben Youssef *et al.*, 2021). As per Mansfield (1962), countless potential entrepreneurs are ready and willing to enter the market. However, two elements influence entry: the potential for profit and the capital requirements (Mansfield, 1962). Nambisan (2016) raised the question regarding the intersection of digital technologies and entrepreneurship, he claims that entrepreneurial processes have grown less restricted as a result of digitalization . Digital technolgies cut unecessary expenses, reduces the time in the execution of many processes, minimize the challenges linked to firm establishment. An increasing number of people are becoming interested in entrepreneurial activities as a result of the reduced risk, enhanced accessibility, and adaptability enabled by digital technologies. Secondly entrepreneurship education has improved due to the use of technologies (Sousaa *et al.*, 2019), the use of technology is on the rise in entrepreneurship education (Solomon, 2007). When the economy is collapsing, entrepreneurship is both fundamental and mandatory. Dynamic entrepreneurship may be able to help turn things around when unemployment rate increases and the economy is falling or faltering (Kritikos, 2014). When entrepreneurship and digitization are combined, the results are overwhelmingly beneficial for the socio-economic growth of particular regions and countries (Kwilinski, Vyshnevskyi and Dzwigol, 2020). Because digital tools enable businesses to leverage commercial prospects, digital technologies have the potential to have a substantial impact on entrepreneurial endeavors (Bharadwaj, 2000; Yoo *et al.*, 2019). We try to map the digitalization and poverty entrepreneurship at a national level, focusing on the particularity, objectives and the impact of digitalization on poverty entrepreneurship. To do so, this paper is organized in four parts, after the introduction, a part is dedicated to present a theoritical background on the concepts of Entrepreneurship, Poverty and Digitalization, the third part will be reserved for an international benchmarking perspective in certain developing countries, the fourth part will detail the moroccan context regarding the concepts studies, the positioning and the arguments of the study.

2. THEORITICAL BACKGROUND

We evaluate a wide range of academic journals in several fields and discuss the underlying ideas about entrepreneurship and poverty alleviation, as well as the usage of digital technology. In this study, we purposely incorporate a diverse range of articles to ensure that we are thoroughly integrating this literature. This review delves at entrepreneurship, poverty, and digitalization, as well as the assumptions and viewpoints that each phenomenon entails. The results of the study will help to integrate the existing literature in new ways. This review will conclude with a detailed discussion of a number of crucial opportunities and challenges for future study on this critical topic. To do so, a theoritical background is defined.

2.1. Concepts of Poverty and Entrepreneurship

Poverty is a complex and challenging phenomen marked by poor living conditions. It manifests itself in a wide range of forms, expressions, and circumstances (Odhiambo, Muthaka and Omiti, 2005). "Poverty is hunger," according to a World Bank statement on understanding poverty.

Poverty is defined as a lack of shelter. Being sick and not being able to see a doctor is an indication of poverty. Poverty is defined as the inability to read and the lack of educational opportunities. Poverty is characterized by a lack of employment, worry about the future, and surviving day to day. Poverty is the loss of a kid due to disease caused by contaminated water. Poverty is a multi-faceted concept that encompasses not only monetary deprivation, but also deprivation in terms of capability, susceptibility, and power over institutions that affect one's life (Bolnick, 2006). One of the government's measures to eradicate poverty and unemployment is entrepreneurship.. The idea that entrepreneurship may help people get out of poverty isn't new, and It is based on the assumption that in most industrialized countries, entrepreneurial activity leads to economic advancement. Entrepreneurship is critical for success and well-being at the individual, familial, communal, and national levels (Hisrich, Langan-Fox and Grant, 2007). In the 1700s, the term "Entrepreneurship" was meant to describe the risk of purchasing at a fixed price and selling at a variable price (James and Cantillon, 1953). As one of the key drivers of economic development, entrepreneurship is considered as a feasible strategy of supporting emerging economies in their development. (Christensen *et al.*, 2010; Kimmitt, Muñoz and Newbery, 2020), and overcome the main difficulties that poverty imposes on developing countries (Sutter, Bruton and Chen, 2019; Si *et al.*, 2020). Entrepreneurship is the process of starting a new business from the ground up. It is the process of making something valuable by dedicating the significant time and effort and embracing the associated financial and societal risks (H. A. Salako and B. S. Adebusuyi, 2008). To start a business, one must first identify a business opportunity. These business opportunities are available when new products, raw materials, and operating systems, services are invented and offered at a price higher than their manufacturing costs (Casson, 1982). For example, the invention of the telephone has nonetheless paved the way for new opportunities for communication to rise. These Opportunities for communication were evident whether people were aware of them or not. Identifying a business potential is necessary, but not sufficient. After spotting an opportunity, a knowledgeable entrepreneur must determine whether or not to pursue it (Shane, 2000). Potential entrepreneurs combine entrepreneurial initiatives to develop new opportunities and compete more effectively through strategic procedures (Hitt *et al.*, 2008) . Entrepreneurship also implies that people have differing perspectives on the worth of assets and ressources (Shane, 2000). In Sub-Saharan Africa, almost 80% of the workforce is self-employed, working in small businesses and domestic enterprises. Many researchers have expressed an interest in researching poor people's entrepreneurship in developing countries. In (Banerjee and Duflo, 2007)'s 18-country-samplebased description of the lives of the poor, They claim that a considerable proportion of the impoverished are self-employed entrepreneurs.

2.2. Digital technology adoption

Because the surrounding environment is unlikely to provide all of the resources required for a new firm to succeed, it is critical to create fundamental capabilities, such as digital technology capabilities, as we live in the age of digital globalization (Cai, Hughes and Yin, 2014). "Digitalization" refers to the use of digital technologies in business, the economy, and society, as well as the ability to connect products, people, and entire organizations (Autio, 2017). Acquisition, integration, and technical infrastructure support scientific and technological activities, create innovation skills, and ensure long-term business success (Soh and Subramanian, 2014). digital technologies are interaction technologies that may be used to improve, extend, and enhance interactions between economic and societal constituents (Autio & Thomas, 2016). The use of computer-based solutions for business objectives is referred to as digital technology adoption (Urbinati *et al.*, 2020). Such as smartphone apps that can assist in cost reduction, profit growth, and gain competitive advantage (Soluk, Kammerlander and Darwin, 2021).

When it comes to helpless and impovershired entrepreneurs, technology eases lots of processes for them. digitalization enables small businesses become more competitive by removing the exclusivity of previously unexplored markets (Darbyshire, 2008). Given the emphasis on increasing and accelerating the use of internet technologies in underdeveloped countries (Martin and Matlay, 2001). Internet is a medium for commerce and marketing (Sparkes and Thomas, 2001), it allows these small entrepreneurs to gain market share and achieve competitive advantage (Darbyshire, 2008). This rapid expansion in ICT usage could transform rural communities into "telecomunications enhanced communities" (TECs) (Martin and Matlay, 2001). Using digital technologies in the field of entrepreneurship is summarized as “digital entrepreneurship” which is defined as new initiatives that are tied to digital activities, goods, and services, and so pursue opportunities using any digital aspect (Davidson and Vaast, 2010). Digital entrepreneurship is the pursuit of opportunities through the use of digital media and other communications technologies (Davidson and Vaast, 2010). Adoption of digital technologies may have a significant impact on entrepreneurial endeavors, as digital tools enable firms to capitalize on business opportunities (Bharadwaj, 2000). Despite the fact that digital technology adoption is becoming increasingly important for any entity in developing countries, few studies have looked into the role of digital technology in boosting entrepreneurship (Martin-Rojas, Garcia-Morales and Gonzalez-Alvarez, 2019). The goal of innovation and entrepreneurship, in conjunction with digital infrastructure, is to drive economic growth and improve people's quality of life (Caragliu, del Bo and Nijkamp, 2011).

3. INTERNATIONAL BENCHMARKING PERSPECTIVE

We reviewed academic articles from a variety of sources, using a country approach on the concepts under study, to gain a broad overview of general perspectives on entrepreneurship, poverty, and digitization research.

3.1. Case of Nigeria (2019)

In Nigeria, and according to (Ogundele, Akingbade and Akinlabi, 2012), if entrepreneurship is supported at all levels of government, particularly at the local and community level, it will help to alleviate poverty by promoting youth empowerment and the growth of social welfare services. The Nigerian government declared war on poverty by promoting entrepreneurship and expanding numerous poverty alleviation programs (Ezeanyeji, Imoagwu, Ejefobihi, 2020). Similarly, (Osuagwu, 2002) highlighted the importance of entrepreneurial development in Nigeria as a turning point for accelerating economic growth, creating jobs, reducing imports of manufactured products, and reducing trade imbalances caused by such imports. In Nigeria, entrepreneurship is the key to long-term wealth creation (Ogundele, O.J.K, 2000). The study led by EZEANYEJI Clement, IMOAGWU Chika and EJEFOBIHI Ugochukwu, titled entrepreneurship development and poverty reduction in Nigeria: the synergy (Ezeanyeji, Imoagwu & Ejefobihi, 2020). The theoretical research conducted by them suggested that education has a favorable impact on production in both the non-agricultural and agricultural sectors: Pinkney (1997) demonstrates a significant reduction in poverty as a result of increased academic achievement. They believe that in order to enhance the entrepreneurial activities, the human basic needs should all be satisfied first. Van De Wale (1990) conducted a study on poverty reduction in Nigeria, and she concluded that meeting basic needs immediately alleviates some of the worst effects of poverty. She argued that those who are well, well-nourished, and educated have a greater level of living than those who are sick, hungry, and uneducated. The report highlights the obstacles of government officials pressuring entrepreneurs for money, a lack of infrastructure, such as inadequate roads, water shortages, intermittent electricity supply, and a weak telecommunication system, as well as the difficulty in obtaining bank credits.

The most serious and harmful issue affecting Nigerian entrepreneurship is the government's lack of interest in and support for micro and macro enterprises. Access to finance, access to licenses/permits, corruption, courts, crime, customs and trade registration, electricity, an inadequate educated labor force, employment laws, political uncertainty, informal sector practices, tax system, business taxes, and logistics were also mentioned as challenges in the Business Environment and Enterprise Performance Surveys (2007) (Ezeanyeji, Imoagwu & Ejefobihi, 2020).

3.2. Case of India (2021)

One of the studies that uncovers the role of digitalization in improving entrepreneurship is the one led by Jonas Soluk, Nadine Kammerlander and Solomon Darwin concluded that digital technologies play a significant helping role in entrepreneurship after surveying over 1,000 micro entrepreneurs in rural India. They collaborated with an international program that aimed to roll out digital technologies in some of the surveyed villages in recent years to capture the diversity in digital technology adoption. They have proved that both the families and communities of entrepreneurs have a positive and significant effect on entrepreneurship that is strengthened only when digital technologies are used. They discovered a beneficial effect of family and community support for entrepreneurship, Family members can assist entrepreneurs by offering advice and criticism on their businesses. They argue that when entrepreneurs use digital technologies, the associated beneficial effect is enhanced. By changing social media channels and other sales and marketing platforms, a business can quickly adopt or test suggestions from family members while using digital technology. In this way, he or she can address institutional deficiencies in his or her rural developing country. The entrepreneur receives timelier real-market feedback on his or her family members' suggestions as a result of using digital technologies. As an outcome, digital technology use enhances the possibility that entrepreneurs may test their family members' ideas. They have also showcased those Digital technologies have the potential to improve the frequency of community connection. Entrepreneurs may ask for and provide support at any time via platforms like WhatsApp and WeChat, as well as ‘record' or save the advice they receive. As a result, if communities embrace digital technologies, the quality of such feedback (as well as the archives of information and input received) may significantly improve. Additionally, business partner support has a negative effect. They also discovered that adopting digital technology boosts the positive effects of family and community support while having minimal impact on the impact of business partners. Their research attempts to show how digital technologies make it easier to enlist the help of family and friends for business efforts. Some business partners, such as customers, can raise complaints at any time and expect rapid responses when using digital tools (Rauschnabel, Kammerlander and Ivens, 2016). The purpose of the empirical study was to introduce entrepreneurs to digital technologies such as smartphone apps. They found that slightly less than half of the entrepreneurs (45.9%) said they were currently using digital technology for business, while 54.1 percent said they were not. Furthermore, the adoption of digital technology moderates the relationship between family support and entrepreneurship. Adoption of digital technology and family support have a significantly positive interaction effect.

3.3. Case of KwaZulu-Natal (2018)

Lekhanya (2018) has revealed that the vast majority of participants choose to utilize their digital equipment for personal conversations and social networking rather than for business. He discovered additional layers of digitization use by entrepreneurs in developing countries. The aim of the study was to showcase how entrepreneurship can be used by entrepreneurs of the region for survival, growth and success.

The study presented the inner factors affecting the performance of small business owners. such as: management skills and the know-how, technical skills that are a must, education and training. External factors can be political, sociodemographic, socioeconomics, technology, competitive environment. Entrepreneurship education played a significant role in the study; it has been established that the primary hindrance to the economic progress of entrepreneurs is a lack of training and education which results in the inability of mobilizing and coordinating all required input materials. The main difficulty mentioned is the poor diffusion rate of technology, which can only highlight the massive impact digitalization has on the productivity and effectiveness of entrepreneurship, Technology is essential because it helps small businesses to gain access to mass markets, connect with global supply chains, track customers more cost-effectively, and improve internal processes. The study also demonstrated that information and communication technologies (ICTs) can be used to promote socioeconomic development, such as poverty reduction, and, more specifically, to facilitate the growth of small and medium-sized businesses (SMEs). The findings of the study were the following:

- Regarding the attitude towards entrepreneurial digitalization, the most frequent variable is that Costs of Internet are very high.
- The most frequent method of digitalization is social media
- As for the benefits of entrepreneurial digitalization, the access to international markets is the most frequent
- The factors affecting entrepreneurial digitalization are mainly economic factors
- Internet marketing is the main area of knowledge and understanding of entrepreneurial digitalization
- Reducing advertising costs is the major reason behind the implication of entrepreneurial digitalization

4. THE MOROCCAN CONTEXT

In order to define the economic structure in which we will work, we sought to study feminine entrepreneurship, most of the extant research on digital adoption by entrepreneurs has focused on men, leaving feminine entrepreneurship in absolute obscurity. Several studies have shown the differences and gender inequalities in entrepreneurship, such as obtaining funding due to skepticism about women's capacity to start or run a business (OCDE, 2004), Moroccan women face this difficulty the most (Asli, Amina; Nour, 2018).

4.1. The Moroccan culture

We sought to have a look first at the cultural aspect, women's labor outside the home has long been frowned upon in Moroccan culture, our culture that is highly influenced by Islam. Even though Islam kept women’s rights safe, but after all human interpretations that have accumulated in religious production, as well as in mentalities, and that have been aided by sociocultural and political contexts that are structurally hostile to the presence of women (Lamrabet, 2015). It has been proven that Moroccan society's patriarchal and sexist nature is a major impediment to female entrepreneurship (Asli, Amina; Nour, 2018). This has been an issue for women since their childhood, their education was never based on developing their self-assurance, autonomy, a feeling of risk, and a zest for invention are all skills that any individual who desires to start and run their own firm must have (Rachdi, 2006). Morocco ranked 144 out of 156 in the World Economic Forum on Gender Equality's March 2021 global gender gap report (World Economic Forum, 2021), a rank that keeps getting lower and lower after the years, in 2019, Morocco ranked 139 out of 156. This is a dismal ranking, given the country's attempts to establish gender equality as promised by the constitution.

4.2. Positioning of the study

We will acknowledge poverty as an entry variable, since women are more affected by unemployment than men, especially in urban areas (20.6% compared to 11.5% for men) (Constantinidis, Abboubi and Salman, 2017), Digitalization is the moderating variable between poverty and entrepreneurship, also taking the cultural aspect into account. Our hypothesis is that, if digital tools are employed more by women in their entrepreneurial ventures, the rates of poverty and social exclusion will decrease significantly.

5. CONCLUSION

In the context of entrepreneurship in developing nations, there are a variety of concerns and challenges to overcome poverty. In this article, we explore a few topics, including how digitization is one of the most important tools for entrepreneurs to improve their situation.

A reduction in poverty is enhanced when it is based on broad-based growth instead of concentrated in pockets or monopolies (Bolnick, 2006). For instance, in Morocco, policies that promote productivity can help boost development within the company. To attain this goal, it is vital to first understand the elements that drive growth before developing a detailed plan for employing digitalization to identify critical policy and program goals. In terms of business behavior, investment decisions in digital technologies are mostly based on the expected rate of return relative to perceived risks and uncertainties (Bolnick, 2006). It may appear unattainable, but the results will undoubtedly benefit the impoverished entrepreneurs. The new future approaches should be able to take advantage of a variety of digitalization opportunities to help people get out of poverty.

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CONCEPTUALISING AND MEASURING CUSTOMER PERCEIVED VALUE IN THE BANKING CONTEXT

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ABSTRACT
The purpose of this paper is to study the value of a product, a service or a consumption as it is perceived by the customer. The perspective adopted in this paper is to clarify this polysemic concept, to present the different models of construction and conceptualization of the value in marketing services. Then, the results of the study conducted with a sample of 323 individual clients of Moroccan Banks will be presented. This paper focuses on the perception of value by clients vis-à-vis the banking services. The data analysis conducted using AMOS structural equations highlights the most meaningful value to clients and their contribution to forming the overall value of the relationship. The goal is to move from the perceived value of the service to a more global notion of the value of the relationship.
Keywords: *Perceived Value, Retail Banking, Relationship Value, SEM*

1. INTRODUCTION

Today, the issue of creating value for the customer has become a major concern for marketers. Service companies have long used Customer Relationship Marketing to retain customer relationships. However, faced with the standardization of products and services, increasing competition and a more mature and demanding consumer, customer loyalty will henceforth be based on their ability to provide and create a true relationship with superior added value offered by the competition, a more relational value that is now being redefined with regard to the evolution of consumer behavior, their consumption values, their tastes, their expectations and their needs. The Customer Value Creation concept entered the field of marketing research some thirty years ago, notably with the work of Zeithaml (1988), which offered the first guidelines for understanding and defining this new framework. Since then, a considerable amount of research and theoretical development has been devoted to the study of customer value (Woodall, 2003, Aurier et al., 2004, Rivière, 2007). In this article, the notion of value refers to the value created and offered by the company to its customers (customer value, perceived value by the customer or simply *perceived value*) So, then value is what the customer perceives and not what the supplier objectively offers through its products or services. However, the concept of perceived value continues to face difficulties in conceptualization and measurement and is a major impediment to exploiting and integrating it into relevant research issues. These challenges are largely due to the richness of customer value, its subjective and contextual nature. The idea of the present paper is to shed light on this concept by reviewing its importance stated in the literature and the study the impact of the components of perceived value in an analytical framework on the overall value. The main goal of this research is to understand the behavior of consumers in the face of a subjective dimension on relationship loyalty in the context of *retail banking* services.

2. FROM DEFINITION TO CONCEPTUALIZATION OF PERCEIVED VALUE

Perceived value is defined by Zeithaml (1988) as: "*an overall appreciation of the utility of the product, based on the perception of what is received and what is given away".* In line with the work of Zeithaml (1988), perceived value can be represented according to an integrative approach. This approach, which consists of obtaining a general evaluation of the level of value of an offer, has for a long time approached the value of a product through a simple quality/price ratio (notion of *value for money*). According to Dodds, Monroe and Grewal (1991), this conceptualization of value is based on a one-dimensional operationalization of value. However, with the development of the "mixed" approach, the nature of the perceived benefits and sacrifices taken into account has gradually diversified. This conceptual enrichment has thus led to the development of multidimensional measures of perceived value by considering the various perceived sacrifices and benefits as so many dimensions of the construct (Aurier, Evrard and N'Goala, 2004). In line with Holbrook's vision (1994, 1999), perceived value can also be conceptualized according to an analytical approach. This approach does not consist in assessing a general level of value, but in distinguishing, within the value itself, different components. These components then constitute the dimensions of the associated measurement model (multidimensional measurement of value). Holbrook et al (2009), proposed a measure of value based on the classification criteria proposed in his previous work. According to him an overview of the literature reveals two main research approaches to conceptualizing value. The first approach conceives of consumer value as a unidimensional construct that can be measured by a self-reported item (or set of items) reflecting cognitive and utilitarian perceptions of value. The second defines value as a multidimensional construct that consists of several interrelated attributes, and which forms a holistic representation of a complex phenomenon.

2.1. Classification of the value the moment it is established/while it is formed

According to this criterion, three types of perceived value are distinguished (Mencarelli, 2005; Merle, 2007):

- The purchase value has its origins in economic theories and corresponds to the exchange value. This approach of value refers to a comparison between the sacrifices and the perceived benefits associated with the purchase of a good (Zeithaml, 1988).
- The *shopping value (*Babin et al., 1994; Mathwick et al., 2001) corresponds to the value that results from the experience that the clients gets from his visit to the store. This approach refers to the context of retail distribution in particular.
- *Consumer value, which has* its origins/roots in use value in economics, has been defined by Holbrook (1994, 1999) as "*a relative preference, characterizing the experience of interaction between a subject and an object*".

2.2. Towards an integrative framework of perceived value

The study of perceived value still has shortcomings at both the conceptualization and measurement level. Thus, value is a concept that means different things to different clients (Zeithaml and Bitner, 1996). Its measurement remains complex and multidimensional (Walsh et al, 2014).

2.2.1. Perceived value: from a transactional to a relational perspective

In the transactional framework, the perceived value is reduced to the purchase and exchange value. It is the result of a comparison between all the benefits and costs associated with the transaction. This reductive and limited aspect of this approach has been highlighted by several authors (Day and Crask, 2000; Cova and Remy, 2001) who criticise it for not taking into account the emotional, social, ethical, situational and epistemological benefits and non-monetary costs (time, energy, psychology, etc.) that the consumer may have in his or her current

commercial relations. This approach to value seems rather restrictive (Ravald and Gronoos, 1996). On the one hand, it does not allow us to consider the long term and complex relationship that consumers form with brands and chains. On the other hand, it disregards/maginalises all the emotional responses of the consumer during the consumption experience. With the emergence of a set of approaches described as experiential (Holbrook and Hirshman, 1982; Aurier et al. 2000), value is no longer considered as a basis for a purchase decision but as the consequence and result of a consumption experience. In this experiential and relational approach, value results from a global and cumulative experience.

2.2.2. Perceived value measurement

PERVAL (Sweeney and Soutar, 2001) remains the most popular value measurement scale in marketing. It has been tested in several fields including services and financial services (Vera and Trujillo, 2013). It has the virtue of being structured by functional value/quality, functional value/price, emotional value and social value classification criteria and has a high operational potential to characterize value profiles. However, this measure seeks to identify the sources of value without really questioning their integration within an overall judgment. In this paper, we will opt for an integrative approach by considering that perceived value is composed of different attributes (functional, social, emotional and epistemic) (Lai, 1995), while taking into account the ethical value, which is very much linked to our research field. Additionally, sacrifices are also included in the study in terms of monetary costs and sacrifices (time, energy, risk). This perceived value composition is an antecedent of the overall value (Aurier et al., 2004). Based on our analysis of perceived value models and with reference to the results of empirical studies in the field, it is possible to consider the following:

- Functional, social, emotional and epistemic dimensions are important to consider in any value study.
- Relational value is particularly important in the service industry and therefore in financial services.
- Ethical and moral value deserves to be developed and evaluated given its growing importance to today's customers.
- Costs and sacrifices must be considered separately from the benefit dimensions.
- And, finally, the role of ICT and the Internet in the dematerialization of the relationship and therefore the questioning of the perceived value.

3. RESULTS OF THE PERCEIVED VALUE STUDY

In this paper, only the results of the perceived value study will be presented. The quantitative survey was based on a sample of 323 individual customers of Moroccan Banks. The questionnaire was administered online and on paper in order to increase the response rate and to reach as many different categories of respondents as possible in diverse geographical areas.
The questionnaire, before being administered, went through a pre-testing phase on a sample of 50 students in order to arrive at questionnaires that are clear, understandable and of an acceptable length for the respondents. It should be noted that the response rate in the online survey is 34%. This rate is acceptable according to *The National Social Norms Center* . An acceptable rate depends on the target population and their convenience in responding to online surveys (Fan and Yan 2010). The response rate on the paper questionnaire is 53%. This rate, although low, is acceptable given the length of the questionnaire and the willingness of respondents to express their perceptions.

3.1. Socio-demographic profile of respondents

52% of the bank clients surveyed were men and 48% were women. These respondents are employees of the private or public sector (28.5% and 24.5% respectively); the respondents are

also company managers and people practicing liberal professions (doctors, lawyers, notaries, etc). This category of clients is called Professionals by the banks. Students are also part of the banks' clients (20% of respondents); this segment is attracting the interest of the banks with increasingly attractive offers. The respondents' educational level is high (94.5% have a university degree). Their annual family income is mostly average (50% of the respondents have an average annual income between 60.000 and 240.000 DH). This is the category of customers preferred by banks. Only 7.4% of the respondents have an annual family income higher than 360.001 DH. The majority of respondents are between 21 and 40 years old (80%). The following table details the socio-demographic profile of the sample.

Variable	Category	Frequency	Percentage
Gender (N = 323)	Male	167	52%
	Woman	156	48%
Main occupation (N = 316)	Student	64	20%
	Private sector employee	93	28.5%
	Public sector employee	79	24.5%
	Company manager	24	7.4%
	Liberal profession	47	14%
	Retired	6	1.9%
	Homemaker	1	0.3%
	Unemployed	3	0.9%
Annual family income (N = 314)	Less than 60.000	87	27%
	Between 60.001 and 120.000	84	26%
	Between 120.001 and 240.000	79	24.5%
	Between 240.01 and 360.000	40	12.4%
	More than 360,001	24	7.4%
Education Level (N = 316)	Primary	1	0.3%
	College	1	0.3%
	Secondary	7	2.2%
	University	299	94.6%
	Other	8	2.5%
Age (N = 317)	Under 20 years old	4	1.2%
	Between 21 and 30	182	56.3%
	Between 31 and 40	85	26.3%
	Between 41 and 50	29	9%
	Between 51 and 60	11	3.4%
	More than 61	6	1.9%

Table 1: Socio-demographic profile of respondents

This socio-demographic profile of respondents is in accordance with the first survey conducted by Bank Al Maghrib and the World Bank in 2014 on the perception of financial services. The study involved a sample of 3,000 adult individuals, 45% of whom were women. 45% of respondents were under the age of 35. In terms of income, 28% of the respondents have an income of more than 9,000 Dhs/month, which is close to the data in our sample. The study also included illiterate people, which is not the case in our study, because of the difficulty of administering the questionnaire to this category of respondents. As for the language of the questionnaire, we administered it in French only because using a questionnaire in two languages could increase the likelihood of measurement bias (Hunt & Angoli, 1991). Based on this comparison, we can state that despite our use of a convenience sample, we were able to gather the main characteristics that mark the Moroccan banks customers and thus ensure the representativeness of our sample.

3.2. Principal Component Analysis (PCA)

The index of perceived value in our research, is considered a second-order formative construct with reflective constructs as first-order indicators (Roig et al., 2006). This choice is guided by two considerations. First, theoretical (direction of causality and nature of the construct) and second, empirical (correlation between items or indicators). This type of variable is referred to as a hierarchical latent variable using reflexive-formative type models (Becker, Kelin, & Wetzels, 2012). It is then appropriate to conduct a principal component analysis on the dimensions that form the perceived value and correlation matrix between items. All the items used in the study are listed in the following table:

Code	Item	Author
	Functional value (3 items)	**Ruiz et al. (2008) Barry and Terry (2008)**
VAL.FO1	1. In this bank, financial services are always provided in accordance with the quality standards of the sector	
VAL.FO2	2. The services offered by this bank meet my needs perfectly	
VAL.FO3	3. The services offered by this bank give me the desired result	
	Social value (3 items)	**Sweeney and Soutar (2001) Lappierre (2000) Zhou (2010)**
VAL.SO1	1. Being a customer of this bank helps me to feel socially accepted	
VAL.SO2	2. Being a customer of this bank greatly improves the way I am perceived by others	
VAL.SO3	3. I am very proud to tell people that I do business with this bank	
	Emotional value (5 items)	**Sweeney and Soutar (2001) Sanchez-Fernandez, Iniesta-Bonillo and Holbrook (2009)**
VAL.EMO1	1. Having an account at this bank gives me pleasure	
VAL.EMO2	2. I am delighted with the services offered by this bank	
VAL.EMO3	3. I feel very comfortable when I visit this bank	
VAL.EMO4	4. I feel good when I meet the employees of this bank	
VAL.EMO5	5. The staff always make my visit a pleasant experience	
	Ethical value (3 items)	**Inspired by Sanchez-Fernandez, Iniesta-Bonillo and Holbrook (2009)**
VAL.ET1	1. Being a client of this bank is in line with my ethical values	
VAL.ET2	2. I will continue to adopt this bank even if it does not offer services in accordance with my religious beliefs	
VAL.ET3	3. The day I find a bank that offers services in line with my religious beliefs, I will change banks	
	Epistemic value (3 items)	**Adapted from Pihlotrom and Brush (2008) Pura (2005)**
VAL.EP1	1. This bank allows me to learn new things	
VAL.EP2	2. My experience as a customer of this bank allows me to try new technologies	
VAL.EP3	3. I like to try the new services of this bank	
	Monetary costs and sacrifices (6 items)	**Sweeney and Soutar (2001) Lapierre (2000) Ruiz et al (2008)**
CS.MON1	1. This bank's service fees are excessive	
CS.MON2	2. Compared to other banks, the financial fees charged by this bank are too high	
CS.MON3	3. Obtaining and using the services of this bank requires a lot of time	
CS.MON4	4. The effort I invest to obtain and use the services of this bank is too high	
CS.MON5	5. I spend a lot of energy to obtain and use the financial services of this bank	
CS.MON6	6. Solving problems with this bank is usually very difficult	
	Overall value (2 items)	**Lin, Sheh and Sih (2005)**
VAL.GL1	1. Overall, considering all the monetary and non-monetary costs, I think the service offered by this bank is worth it	
VAL.GL2	2. Comparing the benefits offered to the various costs I incur, I think this bank offers excellent value	

Table 2: Statements of the Perceived Value Scale

Confirmatory Factor Analysis (CFA) is an extension of Exploratory Factor Analysis (EFA). Both techniques allow to study the latent structure of a given concept.

Items	Components						Quality of the representation	
	1	2	3	4	5	6		
VAL.FO1	,271	-,335	,158	,261	-,139	**,708**	,540	
VAL.FO2	,410	-,176	,141	,285	-,120	**,910**	,848	
VAL.FO3	,456	-,186	,177	,269	-,075	**,884**	,796	
VAL.SO1	**,851**	,165	,263	,218	-,082	,366	,751	
VAL.SO2	**,875**	,149	,216	,311	-,129	,313	,773	
VAL.SO3	**,756**	,018	,094	,071	-,132	,233	,606	
VAL.EM1	**,846**	-,063	,302	,342	-,037	,462	,753	
VAL.EM2	**,807**	-,163	,384	,319	,006	,557	,762	
VAL.EM3	,441	-,356	**,618**	,230	-,218	,593	,729	
VAL.EM4	,506	-,258	**,705**	,110	-,132	,590	,786	
VAL.EM5	,506	-,251	**,676**	,221	-,147	,598	,748	
VAL.ET1	,324	,064	,294	-,079	-,284	,325	,584	
VAL.ET2	, 228	,048	,039	**,600**	-,608	,206	,778	
VAL.ET3	-,080	,158	-,067	,166	**,832**	-,126	,725	
VAL.EP1	,531	-,030	,208	**,684**	-,044	,458	,641	
VAL.EP2	,355	-,022	,248	**,769**	,242	,317	,692	
VAL.EP3	,380	-,071	,302	**,632**	,026	-,302	,563	
COU.SAC1	-,105	,477	**,621**	,186	,099	-,236	,715	
COU. SAC2	,081	,596	**,662**	,052	,027	-,143	,769	
COU.SAC3	,065	**,836**	,138	-,002	,048	-,218	,714	
COU.SAC4	,077	**,902**	,145	,061	,006	-,156	,819	
COU.SAC5	,111	**,888**	,105	,046	,116	-,340	,805	
COU.SAC6	-,039	**,809**	,076	,063	,078	-,567	,675	
Proprietary value (PV)	Eigenvalue4							
6,991	1,373							
Eigenvalue2 (VP)	Eigenvalue 5							
4,110	1,225							
Eigenvalue3	Eigenvalue 6							
1,543	1,032							
Total Equity		Cronbach's Alpha					KMO Test	Bartlett Test
16,247		0,832					0,863	significant
Total EV	70,761							

Table 3: Results of the factor analysis with Oblimin rotation of the perceived value scale

Data for the variable 'perceived value' are factorable. The Bartlett's test of sphericity is significant and the KMO = 0.863 is satisfactory. The measurement instrument has a reliability exceeding 0.7 (Cronbach's alpha = 0.832). The scale of perceived value is composed of six factors that account for 70.761% of the total variance. These are functional value, social value, emotional value, ethical value, epistemic value, monetary and sacrificial costs. In addition, we propose to draw up descriptive statistics for these variables in order to determine the type of value most strongly perceived by the clients.

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
VAL.FO	312	1,00	5,00	**3,2634**	,89109	,794
VAL.SOC	311	1,00	8,67	2,6731	1,15515	1,334
VAL.EMO	312	1,00	5,00	**3,0838**	,96179	,925
VAL.ETH	310	1,00	15,33	**3,0328**	1,04411	1,090
VAL.EPI	309	1,00	5,00	2,8091	1,00864	1,017
COU.BAG	309	1,00	5,00	2,7906	,93842	,881
Valid N (listwise)	308					

Table 4: Descriptive statistics perceived value

Respondents tend to be most sensitive to functional value, followed by emotional value and then ethical value. Functional value in the banking sector is represented by the quality of the services offered, their conformity with the sector standards and their adequacy with the customer's needs. As a result, customers always seek to be served well. We can consider that the perceived value is the result of a cognitive process "*thinking*". The social value refers to the acceptance by others within a group or community, the perception of oneself and the pride of being part of a bank's clientele. However, the emotional dimension, which is part of a "feeling" dimension, is about appreciating the customer's delight, experience, pleasure, and feeling at ease. This value is also based on trust and sympathy between the customer and the bank. As long as this emotional value is placed second for customers, it is threatened by the turnover constraint that marks the financial sector and may cause the relationship to deteriorate or even end. Ethical value refers to the suitability of the banking products offered with the precepts of the Muslim Religion. According to a survey conducted by Reuters and IFAAS (Islamic Finance Advisory and Assurance Services) in 2014, 64% of respondents among current customers of Moroccan banks expressed discomfort with using non-Sharia-compliant products. Hence the interest in including this value is highlighted in this paper. Additionally, the epistemic value refers to the capacity of the product/service to satisfy the curiosity, the desire for knowledge or novelty. This value is also significant in the eyes of customers, especially the younger ones who prefer to discover new products, new communication and distribution channels. Finally, monetary costs and non-monetary sacrifices: the price paid, time, energy, effort and conflict come second to last for the clients interviewed. These costs are also significant in any relationship because they condition its duration and provide a sense of equity and recognition.

3.3. Results of the confirmatory analysis of the perceived value

Perceived value in our research is considered a second-order formative construct; in other words, a formative variable is measured without error, making the reflective measurement purification approach inappropriate (Chin, 2010; Hair et al, 2013). Indeed, a formative measure consists of four steps.

- Step 1: Define the domain of the construct under study
- Step 2: Select indicators and ensure that they cover the domain of the construct
- Step 3: Statistical verification to ensure that the indicators contribute significantly to the construct.
- Step 4: External validity of the formative index.

Step 1 and 2 are already done. Step 3 and 4 need to be verified. In step 3, we perform a multi-linearity test and examine the *Variance* Inflation Factor *(VIF).* The VIF indicates how much of the variance of a variable is explained by the other variables. VIF = 1/Tolerance, where the tolerance corresponds to $1\text{-}R^2$ (the principal of the regression). A general rule is that a value of VIF is considered acceptable when it is less than the critical value l0 (Ruiz et al., 2010). Another more stringent rule requires that the FIV be less than 3 to consider the components to be well separated (Chin, 1998; Hair et al., 2013). This mutli-colinearity test is performed with SPSS 24.0. The results obtained are presented in the following chart.

Table following on the next page

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	,148	,031		4,792	,000		
VAL.FO	**,196**	,008	,273	23,656	,000	,552	1,813
VAL.SOC	,106	,006	,262	23,264	,000	,579	1,728
VAL.EMO	**,179**	,009	,269	20,436	,000	,424	2,357
VAL.ETH	**,163**	,006	,248	26,199	,000	,822	1,217
VAL.EPI	,152	,007	,257	22,619	,000	,570	1,755
COU.BAG	,114	,006	,168	17,910	,000	,838	1,194
a. Dependent Variable: perceived value							

Table 5: Multi-linearity statistics of the variable perceived value
VAL.FO (Functional Value); VAL.SOC (Social Value), VAL.EMO (Emotional Value), VAL.ETH (Ethical Value), VAL.EPI (Epistemic Value), COU.SAC (Monetary costs and sacrifices)

The mutli-colinearity test shows satisfactory results (FIV < 3 and Tolerance > 0.33). As well as the t-value of each of the independent variables (t-value of functional value = 23.656; t-value of social value = 23.264; t-value of emotional value = 20.436; t-value of ethical value = 26.199; t-value of epistemic value = 22.619 and t-value of monetary and sacrificial costs = 17.910).

3.4. Convergent and discriminant validity of perceived value

Many authors consider that a formative measurement model is not identifiable in isolation (i.e., without including another external construct) (Diamontopoulos, Riefler and Roth, 2008; Diamantopoulos and Riefler, 2011; Ruiz et al, 2008). In order to be estimated, a formative construct should be integrated into a more global causal model that includes consequences of the latent construct and allows for testing its nomological or predictive validity. As the customer perceived value index is operationalized as a second order construct (reflexive first order and formative second order), certain validation analyses cannot be performed in isolation on the measurement model. This is the case of *redundancy analysis, which* makes it possible to demonstrate convergent validity and also external or nomological validity. For the redundancy analysis, 1 index of perceived value as estimated by the repeated indicator approach, is related to a global, reflexive measure of customer perceived value (VAL.GLO). The results indicate a regression coefficient of 0.674, a value that approaches the 0.80 threshold suggested by Hair et al. (2013). In addition, the formative index of customer perceived value explained nearly 45.4% of the variance in the overall perceived value measure. These results indicate the convergent validity of the formative construct.

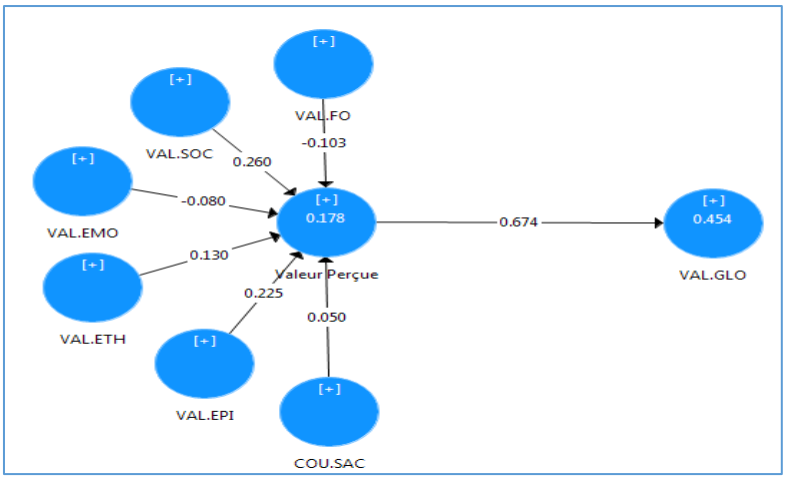

Figure 1: Perceived Value Redundancy Analysis

These results show that the validity of the reflective and formative measures match the recommended criteria of reliability and validity. In the following, the results of the hypotheses and the structural model will be presented.

3.5. Study of the perceived value scale

The absolute fit indices indicate how well the model posed a priori reproduces the collected data. Then, the incremental fit indices allow to compare the tested model to a more restrictive competing model called independent model. And finally, the parsimonious fit indices allow us to compare different models in order to select the one with the best parsimony.

χ^2/df	GFI	AGFI	CMA	RMSEA	TLI	CFI
2,125	0,920	0,870	0,021	0,038	0,860	0,930

Table 5: Adjustment indices for the perceived value variable

The analysis of the values of the indices as well as the low value of the residuals, allowed us to confirm the global structure of the model and the existence of a strong link between it and the data. Examination of reliability, convergent and discriminant validity did not reveal any particular concerns. The reliability of each factor is above 0.7. The Rho coefficients of convergent validity systematically exceed the threshold of 0.5, and the coefficients of discriminant validity exceed the convergent validity.

4. CONCLUSION

The operationalization and validation steps allows us to ensure the reliability and validity of the perceived value construct. The objective of this paper is to test the formative nature of the perceived value construct. The results show a good fit and support those obtained using the SEM-PLS approach. However, the quality of representation of the value types in the perceived value improved significantly in the overall model. The contribution of functional, emotional and epistemic value continues to form the most representative value. The same applies for social and ethical value. Each of these dimensions has had its share of contribution in improving the overall model. As for monetary costs and sacrifices (-0.36), this negative direction is well explained in the literature considering that the relationship between perceived value and costs is often reversed. This proves that customers are sensitive to bank fees as well as the time and energy spent managing their finances. Ethical value, although ranked third, deserves to be explored in the current context of the arrival of participatory banks in the Moroccan financial landscape. Although the formative approach is not yet widely applied in marketing, the results obtained in terms of explaining perceived value are satisfactory. All the effort is expected from these banks to make their commercial arguments shine in front of clients who are still more reluctant and who consider that this new offer only aims at enlarging the share of the already existing banks. It is in this perspective that this research aims to understand first the perceived value, its composition, its conceptualization as well as its measurement to be able to move on to the value of the relationship, based on mutual trust, commitment, interpersonal relations and proximity. The goal is to create a sustainable perspective where B2C relationships will be beneficial for both parties.

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THE GOVERNANCE OF TERRITORIALIZED NETWORKS OF ORGANIZATION (GTNO) AND COLLABORATIVE WORK: THE CASE OF THE LARGE INDUSTRIAL PORT TANGIER MED

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ABSTRACT

The governance dimension is crucial in ensuring the stability, competitiveness, and even the existence of territorialized networks of organizations (Alberti, 2001 ; Ehlinger et al., 2007). Or, when applied to a territorialized network, this concept of governance poses a problem of operationalization, not definition. To put it another way, it is now necessary to examine the actual actions of an TNO's governance organs. Networks corporate , whether sectorial or territorialized, are a strategic development vector for regional economies. The evaluation of TNO performance, in whatever form it takes (clusters, industrial districts, competitiveness zones, etc.) is a new field of study that sits at the crossroads of network managers' concerns, public-sector concerns, and academic concerns. The goal of the TNO is to facilitate inter-organizational collaboration between businesses of various sizes, government agencies, research laboratories, and educational institutions in order to stimulate economic growth. These TNOs aim to strengthen geographical proximity through organizational proximity, and they rely on a strengthening of inter-actor collaboration that might lead to various forms of mutualization at various levels. A high level of collaboration necessitates not only investments (both in terms of time and effort) and network traffic, but also a feedback loop that might be useful to each of the network's participants. The Covid-19 pandemic that is currently raging on our planet also seems to have some advantages besides the simple spread of the disease and the containment measures. This pandemic invites companies to learn lessons in order to develop their medium and long-term to develop its medium and long term appropriation capacities. More than ever, companies are required to become agile, developing proactivity and confidence in order to seize new opportunities. This time of confinement has allowed companies to evaluate their weaknesses and strengths to reinvent themselves and take on new challenges. This complex period gives organizations the opportunity to work in a collaborative mode, to learn, to draw a post-crisis learning effect, to put in place the confidence to accompany an organizational change in line with an environmental reality. We will list the obstacles to the effective functioning of collaborative work within the TNOs, which will lead us to highlight the actions that the governance of the TNO must put in place. We identify three problems preventing the operation: the lack of knowledge between the actors, the limited strategic and collaborative skills on the part of the companies, and the absence of a structure that manages the requests for collaboration, We will then show how the governance of TNOs can loosen these brakes.

Keywords: *collaborative work, governance, performance, Post-Covid, TNO*

1. INTRODUCTION

Supporting a network of territorial organizations (Ehlinger, Perret, and Chabaud, 2007) is a tool increasingly used by governments to foster the development of their industries. Until now, research on TNOs has mainly focused on cooperation in co-production, such as the development of new technologies or products.

However, this concept of governance applied to an TNO raises a question, not of definition, but of operationalization. In other words, it is now necessary to study the specific actions of TNO governance institutions. Therefore, in this research, we need to highlight the influential relationship between the governance of localized networks and the collaborative work of business organizations. In other words, the central questions of our research are: In what way would the collaborative work put in place by the governance of the TNOs be able to contribute to collective performance? and what isthe impact of COVID 19 on enterprise collaboration? To answer this central question, we will organize our work in the following order. In the first part, we will see what an TNO is in the management literature, but also in regional economics. This will lead us to the question of their governance and then the role of the collaborative work put in place by the governance. Then, a second part will allow us to present our research methodology. Finally, in a third part, we will see what collaborative work and governance does, based on the case study of the LIP Tanger Med .

2. REVIEW OF THE THEORETICAL LITERATURE: CONCEPTUAL FRAMEWORK AND THEORETICAL FOUNDATIONS

This review of theoretical and empirical literature offers a reading grid addressing the key concepts of our study, namely, territorial organization networks, RTO governance, as well as collaborative work**.**

2.1. Definition of TNOs

The TNOs aim to improve geographical proximity between actors by focusing on organizational proximity rather than geographic proximity, and they rely on a deepening of cooperation between them that might lead to various forms of mutualization. In order to carry out its business, each network member must choose between three options (Assens et Baroncelli, 2004): either she intervenes directly at all stages of production; either she does it herself; or she does it with the help of independent partners. The network model focuses on the concept of inter-organizational cooperation as a result of logical coréalization rather than integration or order-giving. The authority of one organization over another is not contractually formalized between the parties. Within these territorialized networks, we can distinguish, first of all, by limiting ourselves to the "theoretical world", clusters from industrial districts. Let us give the "canonical" definitions of these two concepts:

- An industrial district is a "socio-territorial entity characterized by a community of individuals and a population of firms grouped together in a space that is naturally and historically limited. In the district, unlike what happens in other environments, for example the manufacturing city, the community and the population are not the same.
- “Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions(e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate” (Porter, 2000,p.16)

These two theoretical concepts have inspired French industrial policy, which has moved from a strategy of helping to build global champions to one of supporting the creation and consolidation of territorialized networks of organizations (Ganne, 1991), through the labeling, in 1996, of Local Productive Systems (SPL) and in 2005, of Competitiveness Clusters. We will give some elements of assessment of these two measures, in order to differentiate them. The local productive systems have been labeled in sectors with mature technology (wood, packaging, food processing for example). Their action was concentrated on training (Pecqueur, 2005; CDIF, 2005) or business development assistance and very little on research and development projects.

These characteristics were not very consistent with the government's desire to bring the French economy into the "21st century economy" (Pommier, 2004). Also, these SPLs were mainly composed of companies: research laboratories were relatively absent. Competitiveness clusters have been accredited in high-tech sectors, or in more mature sectors,but which are expected to benefit from advances in technical and scientific research. Thus, public and private research laboratories are important players in the Competitiveness Clusters,whereas they had only a marginal role in the LPS. The declared aim is clearly to implement radical innovations. There are various sorts of networks. The authors Douard and Heitz (2003) distinguish two types of network logic : additive and complementary. The term "additive logic" refers to the collaboration of organizations with the goal of implementing a new manufacturing process. It is defined as the implementation of a new activity made feasible by the gathering of resources from network partners, resulting in a new value-added process. The result of this pooling of resources is beneficial to all of the partners. In this case, collaborative research agreements that allow for the development of new products or processes, as well as co-development agreements between partners who want to export their products, come into play. A network ofproducers within a certain territory who share a degree of homogeneity and who band together to market their wares (these are called clusters).The additional logical concern is networks in which each organization participates in a certain stage of the manufacturing process. Elhinger, Perret, and Chabaud (2007) define territorio-organizational networks as "coordinated groups of heterogeneous, geographically close actors who cooperate and participate collectively in a production process." This definition allows for the identification of TNO-specific characteristics in comparison to other networks of organizations. Following Colletis-Wahl and Pecqueur (2001), Chabaud, Elhinger, and Perret (2006) distinguish three types of proximity found in territorially organized networks :

- **geographical proximity:** the ability for the project's various stakeholders to maintain regular and frequent physical touch, allowing for the testing and implementation of personalized knowledge transfer procedures.
- **Institutional proximity:** It allows for the recognition of some coordination logicals that are not well understood by network sociology. Indeed, due to the inherent properties of strong and weak ties (transitivity), this last aids in understanding the géography of social networks.
- **organizational proximity:** It refers to internal organizational coordination rules, similar to how interactionists do, but these rules are defined in relation to institutions.

The TNOs are based on collaboration between organizations of various origins in order to allow for collaborative development of both the organizations and the territory in which they are established. Within territorialized networks, we can identify an industrial district where "the actors do not have the desire to integrate research into their innovation process." As a result, the majority of implemented innovations are incremental, consisting of improvements to existing technologies and products. A cluster in which industrial and scientific research is mobilized throughout the implementation of innovations, giving them a more radical character than within a district. Local production systems have primarily been tested in mature technology industries. Alternatively, competitiveness zones have been identified in high-tech or established industries that are expected to benefit from technological and scientific advances. As a result, one of the challenges facing territorially organized networks is to encourage and develop organizational closeness (Gadille et Pélissier, 2009) in order to make collaboration more successful. As a result, the TNOs are tasked with fostering collaboration. The coordination refers to the project group's hierarchical structure ; cooperation refers to the group's self-regulation through mutual adjustments ; and support activities are those that help the group.

2.2. The TNO Governance

Mendez et Bardet (2009) based their study on the governance of Pôles de Compétitivité, which are primarily made up of PME and TPE, on the fact that networks must deal with a high degree of heterogeneity among members ; organizations lacking in technical, financial, and human resources to participate in collective projects ; and individualistic behaviors, with PME and TPE entering direct competition for access to resources, effectively canceling out each other. Elhinger, Perret, and Chabaud define network governance as a "hybrid form of regulation, between the merchant and the non-merchant, characterized by non-economic regulatory mechanisms" based on Jones, Hesterly, and Borghatti's (1997) definition (2007, p157). Ehlinger, Perret, and Chabaud (2007) identified three different sorts of governance ideals: By the focal company, which is characterized by a power imbalance in favor of a business; By the associative network, which is led by a set of organizations with a close referentiel. Territoriale, a mix of private and public organizations can be found here.

2.2.1. Collaborative governance

It is the current state of innovation and research in the field of public sector management theory paradigms. The public sector administration has evolved over time. In 1995, the World Commission on Governance defined governance as "the sum of the various ways in which individuals and institutions, both public and private, manage their common affairs" (Commission sur la gouvernance mondiale, 1995). Collaboration governance (GC) is not limited to public actors who participate in a one-of-a- kind way, but it can also provide public goods and services through formal or informal relationships between public and private sectors. This governance strategy (Calanni, Leach, et al., 2010) deconstructs the one-size-fits-all approach to government management, emphasizing that a group of interdependent individuals may solve a complicated problem or situation with various facets or a scenario that is complex and multifaceted, requiring cooperative policy development or implementation, and that negotiation is becoming increasingly integrated into local government work (Cooper, Bryer et coll., 2006). In theory, the GC has the following characteristics : the diversity of the primary collaborative governance organ, which is a necessary condition for the theory of collaborative governance to work, covering a wide range of network organization forms. This diversity is conducive to taking advantage of collective decision-making and scenario formulation, resulting in a globalfunction that is superior than the individual system's performance. As well as the order of the GC mécanisme, which is an important characteristic of GC theory. The term "collaboration" implies that the system is well-organized. The primary body's status is equal, and the secondary system operates in a collaborative way. In the end, it's important to consider the GC's goal and format. The goal is to establish a starting point and a theme for multi-stakeholder governance, whether to achieve common goals or to solve common problems. At this time, the overwhelming viewpoint in academic circles is that the GC was initiated by the government. As a result, the goal of the GC is to better reach and maintain public and social interests. Factors :a subset of subjective factors for which the GC is not a hierarchical bureaucracy and the primary organ is singular. This person comes from a variety of social backgrounds, with unique skills and experiences. The objective factors, on the other hand, provide the GC with the ability to resolve public problems and maximization of public interest through the integration of all resources. On the one hand, the government can effectively provide strategicdirection, information resources, and project funding support; on the other hand, non- governmental organizations have more management experience, professional skills, and market awareness than the government. Processes that are capable of : o Creating a system that is legitimate according to GC standards. Define the day's order through the definition of problems, objectives, project development, evaluation, and control.Reaching an agreement via communication and trust.

Act first and foremost on the resources required for the implementation of the policy, including people, financial and material resources, as well as determining specific arrangements for the implementation of policies and procedures. Synthesize at the end of the period in terms of exchange at the appropriate time, so promoting the good development of the GC, which is based on the exchange and sharing of government resources and necessitates a joint accounting of responsibilities. Due to the GC of TNOs and the necessity of pursuing the development of a certain territory, anew kind of territorial governance may emerge, sometimes transcending the TNO's region. This territorial governance can be materialized in a concrete way through TNO projects that benefit both its constituents and the immediate environment.

2.2.2. Territorial governance

The term "territorial governance" refers to a type of local policy management. She is based on the mobilization of human resources and the ability to regulate a territory within the context of a multi-actor participatory system. She ensures that policy, social, and economic priorities are based on broad social consensus, and that the voices of the poorest are heard. In Morocco, territorial governance plays a significant role in the management of the territory in order to improve the effectiveness and efficiency of public policies. She is regarded as a territorial administrative organization for public action that allows for better local management and effective and genuine participation of the populace in development decisions. According to (At Lemqeddem & Tomas, 2018), territorial governance appears to be a critical factor in territorial development since it allows for the recognition of the importance and the uniqueness of the territory, as well as the proximity of various territorial actors and their homogeneity in the latter's development process. The territorial government (GT) appears as the result of a complex network of interdependent activities, like a never-ending construction project. In other words, GT can be defined as a process of negotiation between various groups of interests in which the participants (individuals or groups) strive towards a mutually agreeable outcome (Pruitt, 1981). In addition to the social order, the GT is the result of negotiations, therefore the negotiation is constrained by previous encounters. Rules and constraints bring order to the world and reduce uncertainty, while also generating new conflicts, inconsistencies, and ambiguities (Powell et DiMaggio, 1991).

3. THE TNO'S COLLABORATION MECHANISMS

In this section, we'll define collaborative governance, territorial entrepreneurship, and accountability as collaborative mechanisms required for the implementation of TNO governance and capable of contributing to the network's overall performance.

3.1. Collaborative governance and flexibility

Collaborative governance has the potential to reduce conflict, facilitate learning, and increase consensus among stakeholders (Weible et Sabatier, 2009 ; Lixiviation et all., 2014). However, the confidence of the participants is critical in cultivating collaborative dynamics and promoting positive collaboration outcomes (Emerson et all., 2012 ; Siddiki et all., 2017). Collaborative governance has emerged as a viable alternative to more accusatory and conflict-focused governance models (Ansell et Gash, 2008). In fact, collaborative governance is a broad word that encompasses a wide range of institutional structures and governance styles (Emerson et coll., 2012). According to Emerson et al. (2012), collaborative governance is defined as "the processes, structures, and mechanisms for making decisions and managing public policies that engage people in a constructive manner beyond the boundaries of government agencies, executive orders, and/or public, private, and civic spheres in order to achieve a public goal that could not be achieved otherwise." Emerson and colleagues (2012) define three components that interact to stimulate collaborative dynamics: shared principles-based engagement, shared

motivation, and joint action capability. Each component contributes to a synergistic "virtuous cycle" that leads to collaborative acts. Despite its relevance in collaborative governance, trust is sometimes undervalued. TNOs mustlearn to put their ways of organization on hold or assouplir them. Furthermore, innovation canonly be achieved through experimentation, which is why businesses must allow employees to experiment with new practices and procedures. Flexibility also relies on a continuous reallocation of resources in response to unforeseen events.

3.2. Territorial entrepreneurship and support

In terms of concept, there are three sorts of partnerships that have evolved independently, each with a very different concept of why they exist:

- Service-based partnerships are generally made possible by governmental policies aimed at attracting private capital and expertise in the delivery of public goods.
- The majority of resource partnerships are made possible by the efforts of private actors, with the primary focus being on the need to satisfy clients or clients in order to fulfill contractual obligations with government partners and thus be able to fulfill fiduciary obligations to their shareholders.
- Rule-making partnerships are generally associations of interested parties and specialists charged with developing and negotiating rules governing defined actors, most often businesses, but also, in some cases, government agencies and civil society organizations. The main focus of these partnerships is, once again, non-commercial, with a focus on the "adopters" (organizations that adopt the agreed-upon rules) and their stakeholders.

The many forms of business support are numerous, but they all play an essential role through a variety of products and services tailored to the needs of project managers (Bakkali et al., 2010). Beyond actual product and service offerings, support structures assist in the identification of opportunities (Albert, 1986; Chrisman, 1999), provide knowledge (Sammut, 2003), and provide the owner with entrepreneur legitimacy (Sammut, 2003). (Chabaud et al., 2005). Structures for assisting in the formation of innovative businesses have been established as partof a policy initiative aimed at boosting a region's economic development. To carry out their purpose of accompaniment, they enlist the help of a variety of public and private actors, who are enlisted in a group process known as governance.

3.3. Accountability and evaluation

Despite the fact that civil society governance and accountability are a relatively new practice and subject of investigation, there are already a slew of projects around the world aimed at identifying and promoting good practices, as well as codifying them in codes and, in some cases, statutes. Partnerships frequently create or evolve ineffective governance and accountability mechanisms, processes, and standards, in large part because:

- During the early stages of partnership experimentation, when individual energies and commitment count the most, governance and responsibility are established, but they prove difficult to change when institutionalization takes place.
- In contrast to businesses, government organizations, and the private sector, the design and implementation of governance and accountability suffer from a lack of accepted standards or even advice on best practices. The partners and their advisors are inexperienced in the implementation of effective partnership governance and accountability, as they are more familiar with their own "sectoral" experience.
- Performance evaluation and internal reports focusing on associated partners and publics are underdeveloped and, in certain cases, prohibited by contractual obligationsimposed on specific partners, such as commercial considerations.

The evaluation step is used to determine whether or not the network adds value. She does not always determine the network's end. Assens (2003) proposes a network periodization in three stages: creation, expansion, and maturation followed by decline. The creation phase does not begin from scratch ; rather, it is built on the shoulders of a group of founders who have already established working relationships and who enjoy legitimacy as a result of their reputation. With the addition of new members, the network expands during the extension phase. The expansion of members necessitates an increase in inter-member cooperation through the formalization of each member's role and the network's operation. The network's borders are gradually becoming more visible. The third stage is maturation, which is followed by a decline. During this phase, the network receives a high level of formalization, including rule stabilization and addition.

4. THE IMPACT OF COVID 19 ON ENTERPRISE COLLABORATION

The concept of collaboration is neither more nor less than the simultaneous work of its collaborators to achieve, collectively, a goal that may be common. But, in order to benefit from it, it is still necessary to set up an effective working method within the companies. With the COVID and telework imposed on activities that allow it, workhabits must be changed. We have to adapt and try to find new ways of doing things while trying to keep the fundamentals of collaborative work like communication, coordination and organization. The Covid-19 health crisis has disrupted our work habits and has logically impacted our economy. To face this unprecedented situation, companies had no choice but to react very quickly and to work in collaborative mode. The health crisis has accelerated the adoption of teleworking and hybrid work arrangementsin many companies. It has also encouraged the adoption of collaborative work to facilitate exchanges. While many managers and employees have seemed to find telecommuting appealing in times of emergency, the model may endure beyond the health crisis. However, in order to move to full or partial telework, the right work styles and tools need to be adopted. For example, telecommuting requires much more cross-functional ways of working, with collaborative tools, so that you never have to ask questions. The idea of implementing collaborative work essentially allows for greater and stronger cooperation between players, regardless of the department to which they are attached, with thegoal being the same for all: to move the organization forward. Opening up the opportunity for all employees to participate in problem solving not only increases the opportunity to access many different ideas, but also ensures that decisions are shared and implemented effectively.

5. RESEARCH METHODOLOGY

5.1. The choice of the case study method

We will answer our research question via a case study, a methodology that Yin defines as follows: "The case is an empirical investigation, which studies a contemporary phenomenon, in its context, especially when the boundaries between the phenomenon and the context are not clearly discernible" (Yin, 2003). We can justify the choice of this methodology via our research question, but also via our fieldwork. First of all, we are in an emerging theoretical field. Therefore, a hypothetical-deductive approach does not seem very suitable to answer our question. For this reason, it is advisable toproceed via a more open and flexible methodology, via field-theoretical back-and-forth, which is what a case study allows. On the other hand, at the level of our research field, the territorialized networks of organizations are complex cases.

5.2. Choices in terms of fieldwork

It is important to appreciate the quality of the fields available to us to answer our questions. Given that we could not carry out an international comparative study, we had the choice of studying one or more TNOs. The reasons that led us to choose the Tanger Med IPG are the following: first, Tanger Med is an industrial hub for more than 1,100 companies that represent

an annual business volume of 5,300 MEUR in different sectors such as automotive, aeronautics, logistics, textiles and trade. Tanger Med Zones is TMSA's subsidiary in charge ofplanning and developing the large industrial platform, with a long-term development vision, on a dedicated land base estimated at 50 million square meters, with the creation of a network of industrial and logistics parks developed according to the best international standards and benchmarks. This regional competitiveness cluster has nearly 1,000 export-oriented companies in operationto date, and more than 80,000 jobs mainly focused on industrial and logistics activities operated by international players in sectors such as aeronautics, automotive, textiles, logistics and electronics. This industrial platform, backed by the Tangier Med port complex, enjoys significant advantages and provides a value proposition in line with the expectations of global players:

- A strategic position at the intersection of major maritime flows and close to target markets
- An integrated set of first-rate infrastructure and a significant land reserve
- Integrated management of the various business parks by a single operator
- A well-established industrial fabric

Tanger Med Zones includes the following activity zones: Tangier Free Zone, Tanger, Automotive City and Renault Tanger Med,Tetouan Park., Tetouan Shore.
For our case study, we have mobilized the following sources:

- First and foremost, the interviews, of which there have been 10 to date. Most of these interviews were recorded and lasted between 20 and 40 minutes. We also had a few informal contacts that were able to provide us with elements of an answer to our question.
- Documents: newspaper articles, internal documents of the industrial platform Most of these documents will be analyzed and coded with the help of N-Vivo software.

6. RESEARCH RESULTS

In order to learn about the prevailing mode of governance in the LIP Tanger Med network, we asked the partners surveyed as part of our interview guide to tell us about the prevailing mode of governance. According to the responses, associative governance, according to which the rules of adaptation and collaboration are established by a community network of private actors, is very/fairly prevalent in their territory, while the majority see the opposite. Generally, it is the governance actors of territorialized business networking that determine its form. Tangier Med is managed by the Tangier Mediterranean Special Agency (TMSA), a limited company with a board of directors and supervisory board. Its agency was created in 2003 to meet the government's commitment to an innovative mode of governance based on controlling the costs and impacts of a major project on the national territory. The major role of the LIP Tanger Med (TMSA) governance is divided into three divisions:

- The first concerns the port pole with Tanger Med Port Authority. It manages the port's terminals and has sovereign functions over the port district.
- The second division is dedicated to the industrial pole with Tanger Med Zones. This structure develops the various free zones around the port, builds warehouses, rents space to companies and markets space in the six zones scattered around the port.
- Finally, a third pole focuses on services with Tanger Med Engineering, Tanger Med Utilities and Cires Technologies.

The network directors have answered that a network does not function entirely by self-organization (associative governance according to Ehlinger et al (2007)) because there are blockages to innovation and cooperation within it. The task of governance, collaborative work and the emergence of the COVID will consist mainly in trying to remove the obstacles to performance.

it has been observed that the crisis linked to the Covid-19 pandemic, via the development of telecommuting, has led to a multiplication of the uses of different digital tools facilitating ubiquitous collaboration. COVID-19 was an opportunity to review and upgrade the digital platforms of companies large and small. Compared to the four tasks assigned by Ehlinger et al (2007) to meta-managers, we prefer to divide the managerial actions of a collaborative work structure into two parts: ,defining a strategy and then implementing it, mainly by setting up collaborations between actors. From this division, we will retain the main task for the collaborative work structure of a competitiveness cluster: to contribute to the elaboration of a network strategy that will lead to the realization of joint projects. Beyond being a trend for organizations, the culture of collaboration appears in these times ofcrisis as a necessity, to the point of becoming one of the pillars of the company of tomorrow. According to Powell (1990) and Williamson (1995), a network is a collaborative structurewhose exchange conventions are not tributaires, neither of the market nor of the hierarchy(1991). The network organization is made up of several partners who are financially, legally,and/or operationally independent, but are mutually dependent in order to achieve commongoals. As in an écosystème, as defined by Moore (1996), the network is fed by externalexchanges, which drives it to expand its sphere of impact while constantly repouncing its ownlimits. However, as the network grows in size, it becomes more difficult to manage due to thegrowing number of interconnected elements. Indeed, on the one hand, it promotes well-being and is meaningful for employees who areconstantly questioning their relationship with work. On the other hand, because it allows for the sharing of intelligence, it improves productivity and generates innovation to meet ever more demanding business expectations.

7. CONCLUSION

The Territorialized Networks of Organizations, contrary to what an "angelic" presentation (Mendez, 2005) might lead one to believe, are objects that need to be managed. As Lauriol, Perret and Tannery (2008) remind us, territory is not a natural concept, but a construct, so an TNO, which is by definition located in a territory, is also an object to be constructed, in other words, to be managed. Under these conditions, it appears that the meta-organization in charge of the network plays an essential role at three stages of the process: in the mobilization of all the actors; in the monitoring of the process; and in the capitalization of the collective results of the process. It isthus located at the interface of the individual and the collective. Through this iterative process, the TNOs constitute a tool for developing individual and collective skills. The case of LIP Tanger Med is perfectly suited to serve as a rich example of an TNO that never fails to attract new stakeholders to its circle of operation. A collaborative effort is being put in place to improve the latter's governance. A collaborative and territorial governance model, centered on the network's goal, is based on the ability to take risks and share responsibilities in order to create collaborative mechanisms that contribute to the TNO's overall performance. We need to build an organization around increasingly agile concepts, such as collaborative work, remote work and collective intelligence, where the autonomy of employees is based on trust and accountability. The objective is to establish a sustainable corporate culture, capable of dealing with the various changes and transformations of its environment. Each employee must not only be made aware, but also convinced of the ambition and the sense of collaboration and positive impact of his or her company and of his or her role in achieving it.It is also a question of rethinking employee relations, on the basis of sustainable contracts and relationships that combine economic, social and environmental dimensions. Externally, companies will have to learn, more than ever, to integrate the expectations of external stakeholders into their decision-making processes. The main objective is to create a climate of trust in order to maintain relationships with these partners in the economic success of companies.

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INNOVATION-DRIVEN BY COLLABORATION BETWEEN STARTUPS AND SMES IN AFRICA

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ABSTRACT

Open innovation is key to the success of many companies. It is based on the intelligent use of all possible resources, including collaborations with parties outside the company. Although it is well known that large companies foster and use startups as experiments in their innovation process, little is known about similar activities with small and medium-sized enterprises (SMEs). Small and medium-sized enterprises (SMEs) and startups are widely recognized as playing an important role in the economy. Their important role in the economic aspect of a country can be seen in increasing job opportunities, and gross domestic products including net export, which is the sign of a healthy and productive business ecosystem in an emerging country. They are traditionally known to be responsible for generating the majority of disruptive innovations. To achieve continued economic growth, SMEs and startups must be able to meaningfully collaborate. With the rising need for innovation within a complex and dynamic world especially in the post covid era, a collaboration between complementary partners offers the potential to create a competitive advantage. Early-stage startups and small and medium-sized enterprises (SMEs) can exploit opportunities by collaborating early and jointly developing innovations. However, a collaboration between two actors that are so different from each other is also challenging. If the aim of a collaboration between a startup and a small or medium enterprise is the upscaling of a sustainability-oriented innovation, the success of this collaboration is not only in the interest of the two involved actors but can be said to be a concern to society as a whole.

Keywords: *SMEs, Startups, Open Innovation, Collaboration, Business growth*

1. INTRODUCTION

For large companies helping & supporting startups is an affordable way to identify innovative ideas outside their business. These companies offer not only financial aid but also infrastructure, advice, and platforms. For startups, it's an opportunity to grow faster as the potential boosting effect appears to be substantial. However, our attention in this paper is on the collaboration among startups and small medium-sized enterprises (SMEs) as they're able to support and collaborate with considerably more startups than large companies do especially in emerging countries. Also, SMEs and startups are both customer-centric, innovative, and typically focus on a niche market. The differences in size are smaller and they are usually both led by strong founders and owners. Those similarities are good prerequisites for promising partnerships that will continue to grow and secure innovations. SMEs could then enhance their innovation process with limited investments. But for collaboration to succeed many challenges have to be overcome. Without mutual trust and the necessary commitment, there are only small prospects for later cooperation successes. The present analysis examines the collaborative relationship between SMEs and startups using available studies. Our goal is to address the following questions : (1) How can collaborations among startups and SMEs be encouraged? (2) What are the motives for SMEs and startups to collaborate? (3) How SMEs can implement an open

business model by collaborating with startups? We also review the theory and literature of open innovation and place it at the level of startups and SMEs.

2. SMALL AND MEDIUM-SIZED ENTERPRISES

2.1. Literature review

One of the earliest references to SMEs concerns 1971's report of the "Bolton Committee" concerning the British firms. For the Bolton Committee, a small medium-sized enterprise is "an independent business, managed by its owner or part-owners and having a small market share". SMEs have not been spared the definition problem as many authors have given different definitions and had been divided into two major categories, qualitative and quantitative. Researchers who focus on the qualitative method based their definitions on variables such as the mode of decision-making (Belletante and al., 2001), the presence of the owner in the management of the company (Miller and Toulouse, 1986), the predominance of family management style, etc … National economies in the other side prefer to refer to quantitative data which are more pragmatic. These definitional criteria of SMEs generally concern data such as the annual balance sheet, the annual turnover, or the number of employees (Harvie, 2004; Senderovitz, 2009). The following table summarizes some institutions definitions of SMEs worldwide.

Institutions	Number of employees	Annual turnover	Balance sheet
Africa Development Bank	<50	Not applicable	Not applicable
World bank	<300	≤ $15 million	≤ $15 million
European Commission	<500	Not applicable	Not applicable
Unido (Developed country)	<500	Not applicable	Not applicable
Unido (Emerging country)	<100	Not applicable	Not applicable

Table 1: Institutions' definitions of SMEs worldwide

2.2. Contributions of SMEs to economic development in Africa

Small and medium enterprises (SMEs) are the seeds of big businesses and the fuel of national economic engines (Abor and Quartey, 2010). SMEs make up 90% of the private sector worldwide and create more than 50 percent of jobs in their corresponding economies. SMEs in Africa provide more than 80 percent of jobs across the continent and represent an important factor in economic growth according to the center for strategic & international studies (CSIS). Also, SMEs contribute between 52 and 57% to GDP (CSS, 1998; Ntsika, 1999; Gumede, 2000; Berry et al., 2002). The World Bank's Doing Business reports indicate that a healthy SME sector corresponds with a reduced level of informal or "black market" activities (World Business Council for Sustainable Development, 2007). As a result, the economies of Africa rely on their SMEs in order to enhance their competitiveness and restructure their economies (United Nations Economic Commission for Africa Office, 2008). In Egypt, three-quarters of new employment generations are caused by SMEs which constitute more than 99% of all non-agricultural private enterprises (Elasrag, 2011). This situation is reproduced in Libya where 96 % of companies are SMEs contributing to 93% of employment (United Nations Economic Commission for Africa Office for North Africa, 2008). In South Africa SMEs contribute about 57% to the country's GDP and represent 91% of Ghanaian businesses employing over 61% of the population (CSS, 1998; Ntsika, 1999; Gumede, 2000; Berry et al., 2002).

In Tunisia, 97% of companies are SMEs (Agency for the Promotion of Industry, June 2002.). In ghana SMEs contribute about 70% to Ghana's GDP and represent 92% of Ghanaian businesses employing over 80% of the population. Finally, in Morocco more than 95 % of companies are SMEs and they are responsible for 20% of the value-added and account for 40% of production (Hamoumi. 2012). Therefore, given their economic weight in African countries, SMEs contribute heavily to poverty alleviation and play a crucial role in generating employment and stimulating growth.

3. STARTUPS

3.1. Literature review

The word "Startup" was first used in the 1960s as a reference to any form of business in its early stage of development (Breschi et al. 2018; Csaszar et al. 2006). In the 1970s the use of the word "Startup" narrowed toward the ambitious, dynamic, and technological undertaking. The most used and cited definition of a startup is Blank definition. Blank defines a startup as a temporary organization formed to search for a repeatable and scalable business model and it can be identified by its goals, function, and financing structure (Blank 2003, 2013). Eric Ries's definition is also very popular among researchers. He defines a startup as a group of individuals that had come together to create and deliver new value in the form of a new product or service in extremely uncertain circumstances (Eric Ries 2011). Those definitions don't include the word "technology". The adoption of startups in academic literature had been across all industries. But some authors linked the concept to technology ventures (Ornek & Danyal 2015). Technology-based startups can be understood as new ventures where know-how and advanced technological discoveries are capitalized and exploited through new products and services (Klofsten 1994).

3.2. Startup & risk of failure

A startup's chances for success depends mainly on rapid and effective management of knowledge-intensive assets and the development and exploitation of the technology (Nonaka et al. 2000). As cited in Ries's definition, a startup operates in extremely uncertain circumstances. This extreme uncertainty combined with the dynamic and complex nature of entrepreneurship contributed to a high failure rate (Bruyat & Julien 2001; Trimi & Berbegal 2012). Startups failed mainly as a result of not possessing the required capabilities to build complementary assets (Paradkar, Knight, & Hansen 2016) and the degree of competition (Velu 2015). In highly innovative startups where competition doesn't exist, failure could be attributed to their inability to commercialize innovation effectively despite the presence of a market opportunity (Paradkar et al, 2015). Failures could also be a result of insufficient knowledge of the targeted customer (Johnson 2010) or the lack of financial resources to maintain development (Comberge et al, 2014). Finally, failures could be for external reasons such as regulatory obstacles (Herrington, J.Kew, & P.Kew 2014).

3.3. Startups & African environment

The number of African startups receiving financial backing grew exponentially between 2015 and 2020 with a rate of 46% annually which is six times faster than the global average according to the venture capital firm Partech Partners. The Boston Consulting Group (BCG), one of the most prestigious consulting firms, released a report with very important statements. According to this recent report, African startups can't survive the second round (Series B) funding stage which results in a very low return on venture capital investments (Less than 3% on average). Nevertheless, Africa enjoys a very fertile environment for startups due to the continent's youthful and growing population and the rising internet penetration. In order to encourage innovation that drives job creation and economic opportunities throughout Africa, BCG

advocates for enterprise partnerships and government reform to generate strategic alliances with local startups. These strategic alliances can introduce cutting-edge digital technologies and novel business models that benefit all the actors of the economy. Thus there are no relevant contributions of African startups to the economic environment so far but if encouraged and developed strategically their impact could be huge on the emerging economies of Africa.

4. COLLABORATION BETWEEN SMES AND STARTUPS

4.1. What is collaboration?

According to the glossary of the association for intelligent information management (AIIM), collaboration is a working practice whereby individuals work together for a common purpose to achieve business benefit. Another definition of collaboration is "a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together" (Thomson and Perry, 2006). This collaboration could be either synchronous (where everyone interacts in real-time) or asynchronous (where the interaction can be time-shifted). Also, collaboration isn't only about working together and sharing pieces of information. Unlike cooperation, it includes that the parties have a shared common goal and complementary competencies which works much better for open innovation (Järrehult, 2017). According to Ashkenas (2015) collaboration involves making tough decisions and trade-offs about what and what not to do, in order to adjust workloads across areas with different priorities.

4.2. Motives for collaboration

4.2.1. Motives for SMEs

Innovation is the biggest reason for SMEs to connect with startups. For SMEs, it's very hard to conduct all research and development activities in-house. The innovation process is limited by financial means. Thus, SMEs need to collaborate with startups in order to remain innovative (Vanhaverbeke et al., 2012). Collaboration with startups enables SMEs to deepen their knowledge and grasp new opportunities. Startups can provide SMEs with continuous improvements by assisting in the development of existing products, and services or solving business problems (Heratri & Klang, 2019). Also through collaboration with startups, spotting potential future trends could be facilitated (Mocker et al., 2015).Lastly, all of the drivers mentioned above could lead to a substantial financial return for the company in the long run (Heratri & Klang, 2019; Schättgen & Mur, 2017).

4.2.2. Motives for startups

There are different skill sets needed for creating and scaling a business (Yoon & Hughes, 2015). Startups might be good at innovating and finding emerging demand but usually, it's not enough. Soon startups find themselves with scaling issues (Heratri & Klang, 2019). SMEs on the other hand are often professionals at scaling and have the resources and experience needed. By collaborating with SMEs, startups get all the support in the development of their products and access to finance, markets, distributors, and partners. Also working in a committed collaboration could facilitate the startup's scaling process by using the company's marketing channels and network. When providing a joint solution with a startup, the company becomes a distribution partner. The startup can in this way benefit from the corporation's network rather than having to build up its own (Kohler, 2016). Startups could also benefit from market knowledge and experience of the company, and get help establishing economies of scale (Mocker et al., 2015). Gaining credibility within a new market could be very difficult for a startup, but it could be encountered easily when partnering with well-established SMEs (Heratri & Klang, 2019). Lastly, using the company as a reference customer or strategic partner could easily achieve reliability among other actors.

4.3. Advantages and potentials in Africa

SMEs and startups have different competencies that complement each other. Most SMEs operating in emerging countries suffer from the difficulty of facing competitors in a globalized context. This competition in terms of cost quality and productivity affects their potential for growth and development. As a result, the economies of Africa rely on the dynamic and adaptability of their SMEs in order to enhance their competitiveness and restructure their economies (United Nations Economic Commission for Africa Office, 2008). One way to do that is to encourage the collaboration of SMEs with local startups to come up with technological-based solutions such as cloud computing, big data, the Internet of Things, ICT, blockchain, or Artificial Intelligence which affect business behavior. The capacities for SMEs to develop new skills in the digitization and industry 4.0 era are very limited. Collaboration should be seen as a way for SMEs to survive the technology revolution. SMEs, in particular, are able to use the know-how of startups to acquire skills that they are too small to develop on their own. Collaboration between SMEs and startups results in increasing the competitiveness of SMEs and the success rate of startups which will have positive impacts on the economy.

4.4. Challenges

In order to benefit from all the advantages of SME-Startup collaboration, SMEs and startups need to overcome many challenges. The main challenge for startups entering collaborations is the difference in pace (Jacobson & Ramslöv, 2017; Bannerjee et al., 2016). Startups are used to fast decisions making while SMEs have hierarchical structures to ensure the good functioning of the company which causes lead times for decisions to increase. As a result, the enterprise will take a much longer time to approve decisions. Prashantam & Birkinshaw (2008) mention that there is a risk that the startup gets slowed down by the corporations. Also Jacobson & Ramslöv (2017) state that the size difference between both sides is the main cause of challenges in these collaborations. Prashantham (2019) claims that startups often face difficulties to connect with the right departments or individuals in the enterprise because of the size, structure, and power disparities. Startups often find that coordination is lacking in the collaborations (Bannerjee et al., 2016). Coordination is important to ensure trust and alignment of goals. Another challenge is the cultural differences. The two parties have different mindsets. For instance, startups' main priority is to quickly build a minimum viable product (MVP), which is not necessarily a priority for the SME. Another example would be that SMEs in general avoid making risky decisions because they fear failure so there is little or no incentive to take risks. But the culture of start-ups is far less geared towards continuity than is the case in SMEs. With completely new digital business models the newly founded startups initiate disruptive changes in the economy, whereby failure is often already considered a possible early exit option for the founder(s) (Röhl, 2019). Thus, it would be two different attitudes and driving forces. (Jacobson & Ramslöv, 2017). Other most frequent challenges are the difficulties of defining common goals, the resistance to the collaboration from inside the SME, the unreliability of startups, insufficient trust base, issues related to privacy, and the lack of a common basis for communication (Engels, Barbara; Röhl, Klaus-Heiner, 2019).

4.5. Types and models of collaboration

The following table shows the five types of collaboration according to Kohler (2016).

Table following on the next page

Type of collaboration	Examples
Get a pilot project supported	- Funding product development for the startup. - The startup co-develops a new product with the enterprise.
Find an engaged customer	- The enterprise could be the first customer. - The SME helps the startup acquire customers.
Find a distribution partner	- Access to the enterprise distribution network.
Find an investor	- The enterprise invest in the startup.
Become acquired	- Selling a part of the startup.

Table 2: Types of collaboration according to Kohler 2016

A collaboration model between SMEs and startups was presented following a study conducted by Alexander Humboldt Institute for Internet and Society. The classification is based on the duration of the collaboration and the intensity of the cooperation. The collaboration model specified three phases for collaborations. The learn phase is where the two parties get to know each other. The match phase where the two parties determine if they fit together. Lastly, the partner phase is characterized by medium- to long-term activities such as co-creation, joint ventures, and strategic alliances (Wrobel et al. 2017).

4.6. Key factors for successful collaboration

Successful collaboration require alignment between both parties in terms of capabilities and culture. SMEs could for example facilitate an internal bureaucratic system when collaborating with a startup. Another critical success factor includes determining clear goals in the early phases of the collaboration (Ashkenas, 2015). It is also helpful to prioritize targets and create a collaboration hypothesis (Schättgen & Mur 2017). Finally going beyond financial deals, and being more mission-oriented increase the chances of successful collaboration (Yoon & Hughes, 2015). According to Bannerjee, et al. (2016) study conclusion, startups should (1) focus on what can be done for the corporate, not what the corporate can do for the startup; (2) don't assume things, try to understand why and ask questions; (3) network, network, network; (4) build trust, don’t promise too much and be honest about your stage of development; (5) be clear about who will own intellectual properties; (6) incremental innovation is an easier sell than radical innovation; (7) don't underestimate the time corporations need; (8) contact and collaborate with many; (9) don't collaborate with everyone, it is ok to say no; (10) know when to quit, all collaborations are not success stories.

4.7. Intermediate organizations

Collaborations between startups and SMEs may be very difficult because of the many challenges cited above. Thus, third-party organizations may be the solution to overcome the difficulties of collaboration. Intermediaries have been recognized as important enablers of partnerships (Howells, 2006) and play a major role in adapting specialized solutions on the market to meet the needs of individual firms (Stankiewicz, 1995; Carlsson and Stankiewicz, 1991). According to Howell’s definition, an intermediate is “an organization or body that acts an as agent or broker in any aspect of the innovation process between two or more parties”. There are three main categories of intermediate functions : (1) connecting actors, (2) facilitating the collaboration between actors, and (3) providing services for stakeholders (Batouk 2015).

The role of intermediaries is to search and transform ideas by providing solutions with new combinations that fit individual clients (Hargadon and Sutto, 1997). Finally, intermediaries play very pivotal roles in the success of collaborations through coordinating between potential seekers and solvers (Hossain, 2012).

4.8. Collaborations & open innovation

Open innovation relies on the argument that valuable ideas can stem from both inside and outside of a company, external sources of knowledge are very important to establish innovation in a company (Chesbrough, 2003). In today's business environment it becomes very hard to compete in technology and research and development (R&D) only with internal resources. Finding partners and collaborations is essential for organizations (Pénin et al., 2011). Therefore, open innovation utilizes all possible resources, advocating collaborations outside of boundaries to enable solutions that could not have been generated by organizations on their own (Mercandetti et al., 2017). A key factor to success is understanding what necessities are missing within the own company and how to appropriately integrate external knowledge with the own system and architecture (Chesbrough, 2003). According to Holmes & Smart (2009), open innovation contains two approaches to collaboration:

- Exploitative approach: "The use and development of things already known" (Levinthal & March, 1993).
- Explorative approach: Developing new knowledge outside the firm's own domain (Lavie and Rosenkopf, 2006).

Chesbrough (2003) encourages enterprises to collaborate with startups in order to create and improve products and services. Startups are a good supplier of novel ideas that could be useful for companies pursuing the open innovation approach (Mercandetti et al., 2017).
Gassmann and Enkel (2004) proposed three types of approaches in open innovation:

- Outside-in: External knowledge is used to improve one's own innovation processes.
- Inside-out: Innovation processes are initiated from within the company to the outside.
- Coupled process: A mix of the two previous approaches, the exchange of knowledge between the different parties is seen as critical to success.

4.9. Collaborations & open business model

We can't discuss a company collaboration that aims to develop innovation with external partners without displaying open innovation principles. Innovation-driven collaborations refer directly to open innovation rationale. In parallel with the development of the open innovation concept firstly introduced by Chesbrough (2003), we witnessed the establishment of the business model construct (Teece, 2007). The business model construct illustrates the logic of how firms create, transfer and capture value (Teece, 2010). Research in both of these areas resulted in the introduction of the "open business model" construct by Chesbrough (2007). "Open business models enable an organization to be more effective in creating as well as capturing value" (Chesbrough, 2007). The aim of an open business model is to create, transfer and capture value by orchestrating internal and external resources. In the literature, we found two streams, the first one view the open business model as a way to accommodate the open innovation process to improve and increase innovation effectiveness (Chesbrough, 2007) while the second considers it more linked to the business model rather than innovation processes (Kortmann and Piller, 2016). The open business model is very interesting, especially for SMEs who want to increase the level of innovativeness when resources are scarce. It's hard for SMEs to attract the best brains and develop new products internally (Pullen et al., 2009). SMEs need to collaborate in a wider ecosystem.

Among the potential partners of SMEs, startups represent an interesting choice. Traditional SMEs and startups have complementarities in needs and resources, which speak in favor of the success of these relations (Bleeke and Ernst, 1991).

4.10. Case study: Cargo25

4.10.1. Research design and case selection

This study is based on an exploratory single-case study which is important to acquire an extensive qualitative analysis of the collaboration between SMEs and startups. For our study, we selected an early staged startup that relies on collaboration with SMEs. The actors of the study operate in the logistic industry and are located in Morocco. This case is very interesting from a business model perspective. SMEs in logistics already have a defined business model but it needs to adapt in order to acquire new customers and face the competition.

4.10.2. Data gathering & Data analysis

In the present study, primary data were collected directly from participant observation in the field. It involved informal interviews, direct observation, and collective discussions. We made sure to take notes directly in the field and rewrite all of them each day in a research journal. For this study we used thematic analysis, we organized data according to recurrent themes found in primary data. After defining major themes, we coded the data accordingly and begin identifying patterns and recurrent themes.

4.10.3. Case description

The transport and logistics sector is highly fragmented, very competitive, and historically slow to adopt new technologies and innovations. Current industry trends range more towards the erosion of margins and the commoditization of basic logistics services, as well as changing (more demanding) customer expectations and the threat of new entrants with disruptive business models. The optimization of loads and the rationalization of flows are important for transport companies inclined to improve their economic performance. It is in this context that digital players are innovating in terms of collaborative freight exchanges to optimize these flows, minimize empty returns and thus enhance market efficiency. But the mismatch between the expected and actual benefits of freight exchanges has led to high failure rates in their adoption. Cargo25 is a digital freight forwarder that connects shippers with transport companies in order to move freight as efficiently as possible. Cargo25's primary mission is to match supply with demand, ultimately delivering cargo where it needs to go on time. Cargo25 helps carriers better manage their loads with personalized suggestions, fast free payment, and auto-recharge options. Cargo25 is a startup that needs to collaborate with SMEs in the transport and logistics sector. Cargo25 benefits from the infrastructure of the company and the company benefits from the technical support and the innovative digital platform provided by the startup.

4.10.4. Findings

Within our study, we were able to identify critical areas of success in the collaboration between early staged startups and SMEs. Identifying appropriate partners for an early staged startup isn't only selecting the appropriate business. The startup should also find the right contact within the company. In our case, the founder struggled to find appropriate contacts due to missing networks. Also, at first, companies have a reserved attitude toward the idea of collaboration and making changes to their business model. The speed of the startup is then reduced to the necessary time investment in finding partners. Even if the SMEs demonstrated a willingness to open up to external innovation, their internal time-consuming procedures often impeded successful collaborations with startups. Officializing the collaboration is very critical because there are no ready-made contracts or prefabricated processes for an open innovation

collaboration. With a lack of trust, both parties tend to argue about the legal part of the collaboration. We also identified the three main phases of the Learn-Match-Partner model. At the end of each phase, the decision of whether the collaboration will continue is renewed. The Learn phase is about establishing contact and deciding whether the company is seriously interested in a collaboration. In this phase, both parties should identify precisely what are their goals and mutual benefits from the collaboration. At the end of this phase, willingness for a successful collaboration should be clear. In the Match phase, actors explore the potential of the collaboration and check their compatibility. The minimal viable product (MVP) is tested directly in the field and the decision of collaboration is officially made. A collaboration agreement is signed to conclude this phase. Lastly, the Partner phase is where the results of the collaboration are audited. An essential aspect of the success of this phase is the reciprocity of a win-win situation. Business-related expectations should be met partially or totally. In our case, SMEs should see an increase in their customer base and an improvement in profits while the startups receive an increase in users and volume of transactions. Supporting startups in those areas can't be conducted by a single person. The intervention of institutions that acts as an intermediary and provides the network to facilitate matching partners, and accompany both parties in the different phases could increase consequently the number of successful collaborations.

5. CONCLUSION

SMEs constitute a vital element of the development process of an emerging economy, their contributions in terms of production, employment, and poverty alleviation in Africa are widely recognized. Nevertheless, the development of SMEs in Africa is constrained by many factors such as the lack of new technology, weak institutional capacity, and limited access to resources and finance. This paper suggests that one way to accelerate the development of SMEs in Africa is to adopt an open business model by collaborating with startups. SMEs and startups in Africa should consider the difficulties they both encounter, became aware of each other, meet, and eventually start a collaboration. Finally, institutions that act as intermediaries could encourage innovation-driven collaborations by matching startups with interested SMEs.

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SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE IN THE COVID-19 ERA: SUPPORT FOR THE EXPERIENCE OF MOROCCAN SMB

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ABSTRACT

The current business environment is undergoing profound changes. On the one hand, the effects of economic globalization, multilateral trade agreements and new customer requirements, and on the other hand, an unprecedented health crisis, COVID-19. During the Covid-19 crisis, the concept of Corporate Social Responsibility (CSR) has occupied an essential place in the life of any company through the constitution of a socially responsible image in the eyes of third parties and its integration as a new mode of crisis management and as a performance lever allowing the company to resist the current financial and economic shocks. In this paper we will first give a historical overview of CSR, then define CSR, financial performance, the SMB, the role of the SMB on economic growth, then cite the organizational theories related to the importance of CSR in times of crisis, to finally detail the economic impact of health measures to counter the COVID 19; developed by the High Commission for the plan as well as recommendations.

Keywords: *Corporate Social Responsibility, Financial performance, Small and Medium Business SMB, Covid 19*

1. INTRODUCTION

The pandemic of COVID 19 that began in China in late 2019 has created a global economic crisis, indeed; to stop the spread of the virus several countries have had to make containment measures that limit the movement of the population. This economic crisis is unprecedented, by its magnitude and its speed of diffusion on a planetary scale. It combines a supply shock as companies stop or slow down and a demand shock as consumption decreases. Like other countries in the world, the Moroccan economy has been affected by this crisis since March 2020, a crisis that has upset the economic situation of the Kingdom and changed all the forecasts and economic prospects of the country, which has affected all the actors of the society and on all levels, has repositioned the company at the heart of its social utility. It has provided concrete and pragmatic proof of what corporate social responsibility means: contributing to the general interest and serving the common good. CSR is therefore reinforced today by this crisis, which gives it its full meaning and shows its great relevance. The Covid 19 health crisis, unlike any other type of economic or financial crisis, whether national or global, has revealed the importance of corporate social responsibility. CSR is no longer an option today, it is a necessity that must be integrated into the global strategy of the company, whatever its size, and is

integrated into an ecosystem where interactions with internal (employees, social partners) and external (citizens, customers, suppliers, civil society, authorities, media...) actors in the company's sphere necessarily lead it to evolve its strategy in order to integrate the expectations of its stakeholders if it wants to survive. The first discussions on CSR at the corporate level began in the 1950s. However, it is since the 1990s that the theme of CSR begins to take part in management science research. Corporate social responsibility is a notion that is increasingly emphasized by both practitioners and theorists. In fact, over the last few decades, several research studies have focused on this notion and more specifically on the relationship between social and financial performance, in this communication we will give an overview, firstly the historical, conceptual and theoretical framework of CSR, secondly how Morocco faces the crisis Covid 19 , and finally the CSR as a performance lever for the post-Covid-19.

2. THE HISTORICAL, CONCEPTUAL AND THEORETICAL FRAMEWORK OF CSR

2.1. A brief review of the csr literature

The origins of CSR go back to the 19th century. It is the advent of the generalization of social laws in the 20th century, notably laws relating to social security, collective agreements and works councils, which gave CSR a legal, conventional and institutional character (Segal and Sobczak, 2003). However, it was following the economic, social and financial scandals in the corporate world in the 1970s that the debate on corporate social responsibility really took off with the pressure exerted by trade union organizations, human rights groups and other citizen movements against the dubious practices of certain companies. Corporate social responsibility thus emerged with industrial society and the development of firms, but only took fundamental shape in the 1960s. This notion developed mainly in the United States, and then spread to Europe and the rest of the world. The concept of corporate CSR was initiated in companies by the work of ***Bowen (1953)***, the latter and considered the founder of this research trend in the United States through his book "Social Responsibilities of the Businessman" , brought the expression of Corporate Social Responsibility (CSR) into the modern era of management. CSR is defined as "an obligation for business people to implement policies, make decisions and follow courses of action that meet the goals and values considered desirable in our society" (Lépineux et al., 2016)). CSR takes the form of good practices in the different areas it covers. Thus, good social practices summarize all the implications inherent to the very existence of the company in its internal and external environment: ensuring the employability of its employees through training, allowing them to flourish by ensuring a good balance between professional and private life, ensuring equal opportunities between men and women, respecting diversity, etc. (Chauveau and Rose, 2010). (Chauveau and Rose, 2003).

2.2. The conceptual framework CSR / Financial performance / SMB / ISO2600

2.2.1. Corporate Social Responsibility

The European Commission defines the objective of CSR as "the responsibility of companies for the effects they have on society. To assume this responsibility, legislation and collective agreements must be respected. And to do so fully, a process must be undertaken in close collaboration with stakeholders to integrate social, environmental, ethical, human rights and consumer concerns into business operations and core strategy.

2.2.2. The International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) standards allow companies to comply with international standards. These standards define the conditions and practices that guide companies wishing to develop a strategy in this area, all while optimizing costs and respecting the environment.

The ISO 26000 standard (2015), defines the objective of the main lines of social responsibility: "the responsibility of an organization towards the impacts of its decisions and activities on society and the environment, resulting in a transparent and ethical behavior that contributes to sustainable development including health and well-being of society. This behavior must also take into account the expectations of stakeholders and respect the laws in force. In addition, it must be compatible with international standards, integrated throughout the organization and implemented in its relationships."

2.2.3. The very small and medium-sized Business

According to the Dahir n° 1-02-188 of July 23, 2002 promulgating the law n° 53-00 forming the Charter of the small and medium-sized enterprise, the very small and medium-sized business(SMB) are those whose turnover is lower than 75 million DH and whose workforce is lower than 200 employees. Very small businesses (SMB) are defined as units with a turnover of less than 3 million DH and a workforce of less than 10 employees. Large business are those with a turnover of more than 75 million DH or a workforce of more than 200 employees. According to this law, a SMB is any enterprise managed and/or administered directly by the natural persons who are its owners, co-owners or shareholders, and which is not held for more than 25% of the capital or voting rights by an enterprise or jointly by several enterprises which do not correspond to the definition of SMB. This threshold can be exceeded if the enterprise is held by :

- collective investment funds capital investment companies
- venture capital investment organizations
- financial organizations duly authorized to call on public savings in order to make financial investments, provided that they do not exercise, individually or jointly, any control over the company.

SMB play a crucial role in the Moroccan economy and constitute a real engine of development at the local level in the various regions. Today, they constitute more than 90% of the total number of companies established throughout the Kingdom. In addition to its weight in the Moroccan economic fabric, the SMB is an extremely important contributor to job creation and this participates in the fight against poverty through social and economic inclusion.

2.2.4. Financial performance

According to Bouquin, 2004, performance is associated with three fundamental principles: economy, efficiency and effectiveness. Economy consists of obtaining resources at the lowest cost; efficiency relates results to means and allows the quantity produced from a given quantity of resources to be maximized (by relating a result indicator to an indicator of capital employed: profitability, productivity, etc.). Finally, efficiency, which reflects the company's ability to achieve its objectives and goals. FP is measured essentially by financial and operational self-sufficiency as well as by the achievement of a profitability maximizing the efficiency and productivity of the personnel. Financial performance summarizes the financial health of the company and includes the major financial balances. The financial performance of the company is measured by a set of indicators and ratios. In this study, we have chosen the indicators that are directly related to the application of CSR in the company.

2.3. Theories used

Referring to organizational theories, we note that the crisis is an opportunity for companies to strengthen their relationships with stakeholders and consolidate their brand image and reputation. In this context, CSR is an aspect of adaptation of the company to its environment, a crisis strategy and a lever for managing its organizational performance.

The evolution of the concept of CSR has gone through several theoretical approaches that have developed it without arriving at a uniform definition. Each author tries to study this concept from a different angle, taking into account the characteristics of his study environment and the evolution of stakeholder requirements that influence the company. In this article we will try to focus on four essential theories. Firstly, the Stakeholder Theory (ST), which will allow us to identify the most salient stakeholders for a company; secondly, the Neo-Institutional Theory, which can explain the relationship between institutional pressures and the responsible commitment of companies via their CSR approaches; thirdly , Carroll's model, which will determine the different criteria for evaluating the CSR of a company ;and finally , The Resource Dependence Theory (RDT) which states that the firm is dependent on the necessary resources provided by its internal and external environment to carry out its core business.

2.3.1. Stakeholder Theory (ST)

The stakeholder theory: initially formulated by R.E. Freemen in 1984 consists of showing "that a stakeholder is an individual or group of individuals who can affect or be affected by the achievement of organizational objectives" (Carroll and Buchholtz, 2000). In the context of CSR, Spence & al. specify that according to this theory the company must involve all stakeholders in its decision-making process and try to meet their expectations in all situations including that of the crisis. The strategic vision of CSR implies, therefore, knowledge of stakeholders. Thus, Morris (1987) showed that the visibility of a stakeholder depends on the combination of its power to influence the company, the legitimacy of its relationship with it and the urgency of its claims. In addition, the importance of one stakeholder in relation to another depends on the vision that the manager has of it. CSR in SMEs is based on a principle that calls for interdependence between the interests of the various stakeholders, depends on the presence of sustainability principles in the manager, and calls for a leadership style that better integrates CSR into his or her strategic vision Carroll's model (1979). This model is based on three essential foundations of Corporate Social Performance (CSP) which are complementary. First, the firm must define precisely what it means by CSR, then it identifies and clearly states the social problem it faces, and finally it commits to providing a relevant response to this question. The PES is defined as the set of obligations that a company has towards its stakeholders, which includes several levels, namely the economic, legal, ethical and voluntary levels. These different dimensions were outlined by Carroll in the CSR pyramid.

2.3.2. The neo-institutional theory

To recognize institutions and their role in CSR analysis models, the neo-institutional current emphasizes the set of rules and values conveyed by institutions to help understand the behaviors of organizations (Labelle, Aka and Pichette, 2013). Stakeholder pressures are not the only source of pressure on corporate strategy and survival. Indeed, changes in legislation and regulations, the degree of economic development of a given sector, and technological innovations are also elements that can prompt a company to develop a CSR strategy in order to comply with its new environment and maintain its legitimacy. According to Quairel and Capron (2004), this legitimacy manifests itself in an institutional environment through a set of laws and norms that govern relations between people and push companies to play a defined role. Thus, this theory assumes that the SME is always influenced by its external environment and by the expectations of its stakeholders.

2.3.3. Resource Independence Theory

The Resource Dependence Theory (RDT) states that the firm is dependent on the necessary resources provided by its internal and external environment to carry out its core business. Pfeffer and Salancik (1978) raised interdependence between this theory and the stakeholder

theory by explaining that favorable relationships with certain stakeholders expose not only cost savings but also significant revenues. According to Hillman, the theory of resource dependence (TDR) occupies a primordial place in strategic management since the strategic resources of the company provide them with their competitive advantage. With respect to SMEs, the resource independence theory encourages these firms to approach the interests holding the indispensable resources through CSR practices to acquire them Morocco facing the crisis Covid 19

2.4. Morocco's economy in the face of the crisis

During the year 2020, marked by the occurrence of Covid-19, the national economy suffered the effects of both this pandemic and the drought, recording a contraction of 6.3% compared to growth of 2.5% in 2019. This contraction is the result of a decline of 5.8% for non-agricultural activities, 8.6% for the agricultural sector, 6% for domestic sector, 6% for domestic demand and 14.3% for foreign 14.3% for external demand. Thus, the real GDP per capita was established, in 2020,to 26,241 dhs, down 7.2% compared to 2019. This decline has brought the wealth created per capita back to the level recorded to the level recorded 5 years ago, in 2015, when it 2015, when it was growing at an average of 2% per year on average during the last five years prior to the health crisis. This situation has particularly penalized the activities of very small and medium business. According to the first pass survey, conducted by the HCP in April 2020 among companies, 72% and 26% respectively of production units temporarily or permanently out of business in April were VSB(very small business and SMB(small and medium business)

2.5. Impact of COVID 19 on SMB (HCP)

As of early April 2020, nearly 142000 businesses, or 57% of all businesses, reported that they had permanently or temporarily ceased operations. Of this total, more than 135,000 firms had to temporarily suspend their activities while 6,300 ceased their activities permanently. By company category, very small companies represent 72%, SMEs (small and medium-sized companies) 26% and large companies 2% of the companies that have temporarily or definitively stopped their activities. The sectors most affected by this crisis are accommodation and catering, with 89% of companies at a standstill, the textile and leather industries and the metal and mechanical industries, with 76% and 73%, respectively, as well as the construction sector, with almost 60% of companies at a standstill. This situation had an impact on employment. In fact, 27% of companies had to temporarily or permanently reduce their workforce. Thus, according to the results of the survey, nearly 726,000 jobs would have been reduced or 20% of the workforce of organized companies. By category of company, this proportion, more than half of the reduced workforce (57%) are employees of VSB . 49% of MSB operating during the survey reference period would have reduced their production because of the current health crisis (a decline of 50% or more for 40% of these companies).

2.6. Measures taken to cushion the impact of the crisis

The COVID 19 crisis was an opportunity for Morocco to accelerate the implementation of innovative methods to collect, analyze and derive useful information from Moroccan socio-economic data, in order to best support decision-making in an ethical, scientific and contextualized manner. Digitization, Artificial Intelligence and new technologies in general are already at the center of understanding the crisis around the world and will also generate lessons according to the experience made by government services, businesses and Moroccan civil society. Recognizing that reliable data and transparency contribute to both improved public policy and citizen confidence, Morocco has made significant efforts in transparency and data management, which strengthen compliance and public acceptance of measures. Morocco has seen the crisis as an opportunity to strengthen advanced regionalization and enhance the role of

civil society, and has paid particular attention to the evolution of multidimensional poverty (income, health, education) and to planning an inclusive response, especially for the population hardest hit by the crisis, and therefore most vulnerable to falling into poverty. It had investing in the continuity of public services in health, education and administration during and after the crisis. Municipalities, provinces and regions have developed, with great speed, measures to facilitate access to their services for citizens, while trying to guarantee their protection. This was the case for administrative services which, when the conditions were right, were digitized, but also for basic or emergency health services, which were maintained despite the pressure on the health system. The Economic Recovery Plan, Morocco has injected 120 billion dirhams, or 11% of GDP, to address the difficulties caused by the ongoing health crisis and to support the budgetary accompaniment of the sectorial recovery plans provided for in the Amending Finance Law. 75 billion dirhams of State-guaranteed credits will be dedicated to all business segments, including the Public Establishments and Enterprises most affected by the crisis, and 45 billion dirhams will be allocated to a Special Allocation Account entitled "Strategic Investment Fund". Moreover, the accelerated and effective implementation of this recovery plan is, in accordance with the Royal High Directions, one of the priorities of the Finance Law for the fiscal year 2021. The Moroccan State has taken several measures to support SMEs in terms of postponing the banking, tax, social and credit lines as the device "DAMANE OXYGENE" which is mainly aimed at very small and medium enterprises whose turnover does not exceed 200 million DH. These bank loans, which are in addition to existing lines, cover up to 3 months of current operating expenses (including salaries, rents and payment of necessary purchases) and can reach up to 20 million DH. A label (Certified Moroccan Content) has also been created to encourage the consumption of domestic products and stimulate the activity of companies in difficulty.

2.7. Recommendations

The efforts provided by the Moroccan State are very important but insufficient to guarantee the survival and continuity of the activity of the VSB, then the committee of economic watch must think of adapting the measures to the sectors of activity and their follow-up to guarantee their effectiveness by a deep study of the needs for these companies, because it is not a question of improving only the financing, but to seek to accompany these SME so that they can draw the best from this financing. The current situation requires us to operate several levers at once while boosting public and private investment, consumption and exports. This calls for a lot of imagination and political courage in terms of budgetary and monetary choices, with quantitative and qualitative objectives for our socio-economic fundamentals in the short, medium and long term. Recourse to the budget deficit and external debt useful for financing wealth-creating investments, combined with the easing of prudential constraints, would be options to consider for an exit from the recession. Beyond the strategic vision induced by the new economy, it constitutes an opportunity for public investment in the sectors of public administration, health and education, which are the main engines of development in the country. These sectors will have to undergo a revolution through the adoption of digitalization thanks to new information technologies. Their piloting by a dedicated body would be a major contribution for the follow-up of the achievements with regard to the objectives which will be assigned to them. The introduction of e-government will undoubtedly bring efficiency, better performance, transparency and a better quality of service to the citizen. The adoption of new technologies (telemedicine, computerization of the health system, etc.) through the deployment of networking. This technological revolution is all the more necessary as the population living in remote areas suffers from a lack of access to rudimentary medical care. Similarly, e-education should be a real solution to the problems of our education system, which to date is struggling to find its way, and this through the democratization of access to education to all segments of

the population and in particular to the population of the rural world which suffers from a high rate of school dropout for reasons often cultural and material. E-education should also be an appropriate solution for capacity building and the increase in competence of the teaching staff through the e-learning system. Nevertheless, we will witness a reconfiguration of economic power zones through the relocation of strategic industries to their countries of origin. The economic movement leads

3. CSR: A PERFORMANCE LEVER FOR THE POST-COVID-19

COVID 19, which continues to wreak havoc around the world, has proven to be a true test of the effective commitment of companies at all levels and has brought CSR (corporate social responsibility), long considered a mere bonus, to the forefront. This unprecedented crisis has highlighted the resilience of companies that have developed, or even fleshed out, a CSR strategy and taken into account their relations with their employees, suppliers and local communities, then transformed their organization appropriately. On the contrary, those who have considered CSR as a simple matter of reputation or communication have encountered more difficulties. Covid-19 appears to be a true test of Moroccan companies' effective commitment to CSR, highlighting that this crisis is an opportunity for companies to introspect their resilience, risk management and adaptability. According to Mr. Adil Cherkaoui, university professor at the Faculty of Legal, Economic and Social Sciences Ain Chock of the Hassan II University of Casablanca; Since the beginning of the crisis, companies with the best environmental, social and governance (ESG) ratings have shown a stronger resistance to the current economic and financial shock. This is empirical evidence of the relevance of CSR and the need to integrate extra-financial analysis in the evaluation of companies. CSR is part of the governance of the company, and touches every aspect of it (HR, Production, health, safety...). In times of crisis, companies in Morocco have shown social and societal commitment, they have produced hydro alcoholic gel, mass masks, provided materials to help the sick and the medical profession, best practices. On an environmental scale, companies have started to telecommute because it reduces the need to travel to and from work. The result: less pollution and less congested public transport. Wellness at work is one of the pillars of CSR. In this sense, companies have shown their employees that they do everything possible to ensure their well-being on a daily basis, assistance, the supply of gel masks... Adding to this the respect of state of emergency, the preference of local consumption.

3.1. The role of the state

The normative and regulatory framework in Morocco has continued to progress in recent years. In addition to the strengthening of corporate social responsibility approaches by companies making public offerings, Morocco has also developed investment products related to sustainability risks and/or with a positive societal and environmental impact. Thus, in the circular of February 20, 2019, the Moroccan Capital Market Authority (MCMA) introduced a requirement for improved transparency of issuers on the content, frequency, and relevance of the information disclosed. The circular requires issuers to include an ESG chapter in their annual financial report. Beyond the reporting aspect, this obligation questions these companies on what they do in terms of CSR and how they do it. Recalling that in May 2017, the AMMC and the Casablanca Stock Exchange had published the guide on "corporate social responsibility and ESG reporting" with the aim of promoting the CSR culture at the level of companies making public offerings in Morocco. The guide clarifies some concepts and presents a practical approach for the implementation of the CSR approach and ESG reporting. In addition, the AMMC published, in June 2018, a guide on "Green, Social & Sustainability Bonds" with a view to accompanying and encouraging the development of the market for financial instruments intended to finance sustainable development.

This guide, which is a continuation of the Guide on Green bonds published by the Authority in November 2016, aims to open up more opportunities in sustainability financing, and this by introducing two new types of instruments, namely Social Bonds and Sustainability Bonds. For its part, Bank Al Maghrib (BAM) published its Social Responsibility Charter in 2018 to support Morocco's COP22 commitments. The charter defines the five commitments of the Central Bank, in the areas of Social Responsibility as well as the 22 actions that will be carried out by its different entities. The five commitments concern ethical commitment, environmental commitment, commitment to employees, economic and civic commitment and "responsible purchasing" commitment. In my opinion **,** The state must put in place a more incentive framework, either in regulations or in taxation, to encourage companies to commit to the 4 dimensions of CSR. For example, if the state sets up a tax incentive on everything that is waste management, pollution reduction ... companies will make more efforts and invest or if the laws are more inciting; fiscal advantages for the companies which will make more efforts in term environmental and energy.

4. CONCLUSION

In conclusion, this article contributes to the understanding of the impact of the coronavirus on SMB in Morocco. We have noticed that CSR is the responsibility of an organization towards the impacts of its decisions, activities on society and the environment, resulting in an ethical and transparent behavior that:

- Contributes to sustainable development, health and well-being of society.
- Takes into account the expectations of stakeholders
- Complies with the laws in force while being consistent with international standards of behavior
- and is integrated throughout the organization and implemented in its relationships However,

The crisis of Covid 19 has allowed CSR to better settle, and impose itself as a necessity for survival to the crisis. As any contribution that wants to be scientific, our work suffers from some limitations of which we cite an empirical study that studies in the field the relationship of CSR and financial performance of VSB post Covid, to improve this work several new avenues of future research on this topic can be carried out, we propose a survey with a larger sample and research work to monitor the evolution of the impact of this health crisis on these companies.

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THE ROLE OF SMES IN NATIONAL ECONOMIES: OVERVIEW AND OUTLOOK

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ABSTRACT
The omnipresence of small and medium-sized enterprises at the international level has aroused the interest of several research authors to study to what extent these small structures influence and affect the economies at the national level of each country on different levels. On the economic level, the issue of small and medium-sized enterprises is often highlighted in relation to their ability to create stable and permanent jobs. Also, these companies are analyzed in times of crisis and volatility in order to test their resilience. Faced with these multiples analyzes and different readings, we propose to review, in a general and progressive manner, the main themes and facets related to the study of the role of SMEs in the light of recent developments following the publications of international organizations responsible for economic and works of certain academic authors.
Keywords: *Small and medium-sized enterprises, Role of SMEs, SMEs challenges, National economies*

1. INTRODUCTION

In a context where constant disturbances and changes have had become a natural challenge for national economies around the globe, leaders and decision makers are getting more conscious about the role of Small and Medium-sized enterprises (SMEs) regarding nation economies. In fact, this category of enterprises is often emphasized in terms of local job creation, value added and its variant manufacturing ability. Nevertheless, the primary challenge facing SMEs is related to its resilience ability which makes it difficult for many business owners to maintain and create new jobs especially at times of crisis. However, most governments and official organizations in charge of economics, employment or related departments are deploying significant efforts to stimulate SMEs ability to create local job by a number of measures and economic modalities. Moreover, the share of SMEs in number of enterprises is a key reason for increased interest in studying and analyzing their prospects regarding national economies. As a matter of fact, SMEs represent 99% of all businesses in OECD countries (OECD, 2019). In Morocco, SMEs represent 93% of all businesses (HCP, 2019). This omnipresence of SMEs is more often related to its ability to participate directly in employment and productivity major economic ratios. According to the International Finance Corporation within the World Bank Group (2020), small and medium-sized enterprises are set to be considered as the biggest origin of employment and provision of goods as well as services in low-income economies. However, job creation is correlated to SMEs stability and suppose favorable conditions for continued growth and development.

Following this feature, SMEs are exposed to different challenges making it more difficult to ensure a better functioning system under the influence of its environments. The COVID-19 highlights an example of how SMEs can be easily affected in multiple and different dimensions. Among these dimensions, their ability to "maintain current jobs and recruit" which had shrunk. In other words, this association between SMEs and their crucial role in job creation is emerging more than ever as an existential and important potential to every nation's economic growth. Concerning public action, linking SMEs to economic questions started to figure at highest government level. In Morocco, for example, a ministry in charge of economic inclusion, small businesses, jobs and skills has seen the day as a recognition of public authorities of the key role of SMEs in the national economy along with employment and skills development. In this communication paper we propose to review (**1**) the emergence of SMEs concept; (**2**) how SMEs are defined at international and national levels; (**3**) the role of SMEs regarding domestic economies; (**4**) an overview of SMEs' challenges.

2. EMERGENCE OF SMES CONCEPT

Until July 2002, the concept of Small and Medium-sized enterprise used to be ambiguous in Morocco given the absence of a legal basis to recognize the importance of this category of businesses. However, and since that date, Law 55-00[1] forming a charter for small and medium-sized enterprises has emerged. The official recognition of the concept of this category of company is mainly due to the fact that these companies constitute the backbone of the economic fabric of Morocco. The reasons that motivated the legislator in Morocco to clearly distinguish these companies from other categories of companies (*large companies for example*) refer to the desire of public action to treat these companies in a differentiated manner. In other words, This special treatment was explained by the implementation of measures and methods of support, in particular financial, in order to take into consideration the specificities of these companies which refer to characteristics that directly and indirectly influence the network that these companies have been able to build over the years, enabling them to maintain and strengthen their business models, which are often reinforced by the business networking systems that these companies maintain with each other within a territory. In the same context, the strong emergence of this concept has been justified by the failure rate for new businesses (*often small and medium-sized*) and by an "*insufficient*" level of competitiveness and performance for existing SMEs. In the Moroccan context, the State has planned since the date of publication of this Law to put in place a new promotion policy specific to SMEs and this considering this legal text as being the reference framework of the action that the State intends to carry out in partnership with the territorial private actors. The evolution of this concept since the beginning of the 2000s did not concern Morocco only but rather it was an economic trend for several international organizations concerned with economic, financial and even social issues and themes in parallel with the recognition of the weight of these companies by the legislations of several countries. For example, the OECD published a month before the publication date of Law 55-00 in Morocco, a policy brief paper (*in June 2000*) entitled "Small and Medium-sized Enterprises: Local Strength, Global Reach". This publication among many others, which have had such close dates, show a progressive international recognition of the importance of SMEs during that period of time. This focus on the concept of SMEs is explained not only by their impact on national economies but rather by the continuous dynamics they are likely to produce. Moreover, SMEs are essential for delivering more inclusive globalization and growth (OECD, 2017).

[1] Dahir n°1-02-188 of 12 joumada I 1423 (July 23, 2002) promulgating the law in question. This law was published in the official bulletin of the Kingdom of Morocco under number 5036 (French version) which can be consulted on the official website of the General Secretariat of the Government in Morocco. http://www.sgg.gov.ma/BulletinOfficiel.aspx

3. DEFINITIONS OF SMES

3.1. Definitions of SMEs at international level

An international common definition of SMEs does not exist (OECD, 2017). In fact, SMEs are variously defined in the legislation across countries and territories, in particular because the dimension "*small*" and "*medium*" of a firm are relative to the size of the domestic economy (OECD, 2017). However, SMEs are defined as non-subsidiary, independent firms which employ less than a certain number of employees. This number varies across national statistical systems (Adian et al., 2020a). Concerning European Union, SMEs are defined by the European Commission as having less than 250 persons employed. They should also have an annual turnover of up to EUR 50 million, or a balance sheet total of no more than EUR 43 million according to the Commission Recommendation of 6 May 2003 (Eurostat, n.d.). In the United States (U.S.), there is no distinct way to identify SMEs (Liberto, 2020). And yet, the SBA[2] categorize small businesses according to a range of indicators and ratios such as the number of employees, generated profits and ownership structure (Liberto, 2020). In Asia, the definition of small and medium-sized enterprises also depends on certain specific indicators and ratios. At this level, SMEs can be defined in terms of investment, employment or output or a combination of these three variables (Bala Subrahmanya, 2009). SMEs in Japan are defined in terms of capital investment and employment under the Small and Medium Enterprise Basic Law. In general, SMEs refer to enterprises with capital of not in excess of ¥300 million or 300 or fewer employees. Small enterprises are defined as enterprises with 20 or fewer employees (Bala Subrahmanya, 2009). The official definition for an SME in India is of recent origin. According to the Micro, Small and Medium Enterprises Development 2006 Act, a small-scale enterprise is defined in terms of investment in plant & machinery up to Rs.50 million and a medium scale enterprise to have investment in the range of Rs.50 million to Rs.100 million. Thus, SMEs would cover all enterprises having investment in plant & machinery up to Rs.100 million (Bala Subrahmanya, 2009). The diversity of definitions at the international level and between different legislations gives us information on the proximity of the criteria taken into consideration for the definition of SMEs at different scales (number of employees, balance sheets, …).

3.2. Definitions of SMEs at national level

The definition of SMEs has changed with the appearance of different texts and documents relating to this category of enterprises. An important part of these texts had as main objective to try to identify the framework of these companies as much as possible in order to help in its promotion and development. Among these texts, we can cite:

- The accelerated simplified procedure of 1972;
- The 1983 investment code;
- The Central Bank of Morocco (Bank Al-Maghrib) definition of 1987;
- FOGAM provisions to assist SMEs;
- The 2002 SME charter (Tilfani, 2011).

In fact, the definition of SME in Morocco depended on several variables. For this purpose, the quantitative criteria for measuring size are: number of employees, turnover, amount of assets. However, the workforce is the most popular criterion for researchers and the 500-person limit is the limit for defining SMEs. Qualitative criteria are also taken into account to refine the definition of the SME, mainly the type of ownership and the degree of independence. Thus, enterprises that are independent from groups or large enterprises and in most cases family-

[2] According to the official website of the United States government, The Small Business Administration (SBA) helps Americans start, build and grow businesses.

owned are considered SMEs (Ejbari, 2017). Nonetheless, even if the question of the definition of SMEs remains a delicate subject as it involves both budgetary and fiscal expenditure (Elarif, 2011), it is the definition adopted by the Law 55-00 that is the reference, in particular to benefit from the assistance of State institutions that support the development of SMEs. This definition refers to a SME as enterprise managed and/or administered directly by the physical persons who are its owners, co-owners or shareholders, and which is not held by more than 25% of the capital or voting rights by a company or jointly by several companies that do not correspond to the definition of SME. This threshold can be exceeded, without exercising individually or jointly any control over the company, if it is owned by:

- Collective investment funds, as defined in Article 27 of Law 55-00;
- Capital investment companies, as defined in article 28 of Law 55-00;
- Financial institutions duly authorized to call on public savings for financial investments.

The definition did not limit itself to these legal connection criteria but rather specified that SMEs must meet the following conditions:

a) for existing companies: have a permanent workforce not exceeding two hundred (200) people and have achieved, during the last two financial years, either an annual turnover excluding tax not exceeding seventy-five (75) million dirhams, or an annual balance sheet total not exceeding fifty (50) million dirhams; In the case of an SME which directly or indirectly holds more than 25% of the capital or voting rights in one or more companies, the addition is made of the permanent staff and the annual turnover excluding tax or totals of the annual balance sheets of the said SME and of the other companies mentioned above, without however the total of each of these criteria exceeding the thresholds set below.
b) for newly created companies: undertake an overall initial investment program not exceeding twenty-five (25) million dirhams and respect an investment ratio per job of less than two hundred and fifty thousand (250 000) dirhams. According to this Law, a newly created company means any company with less than two years of existence.

Following these multiple definitions which referred to (**a**) OECD countries as an international organization; (**b**) European Union; (**c**) the United States; (**d**) Japan; (**e**) India; and (**f**) Morocco, it can be seen that the criterion relating to the number of employees is the most common criterion for deciding the form of SME.

4. THE ROLE OF SMALL AND MEDIUM-SIZED ENTERPRISES IN DOMESTIC ECONOMIES

SMEs are considered as the fundamental tool for economic growth (Manzoor et al., 2021). Accordingly, globalization has placed SMEs unswervingly in the limelight and attention. These are gradually and progressively the main strength for national economic development (Manzoor et al., 2021). Furthermore, SMEs contribute to economic development in various ways: by creating employment for rural and urban growing labor force, providing desirable sustainability and innovation in the economy as a whole (Kongolo, 2010).Also, there are a lot of researches about the importance of SMEs in the country's economy making SMEs a vital actors for enhancing innovation, competitiveness, entrepreneurship and the establishment of an effective innovation system for developing countries (Keskġn et al., 2010). The economic contribution of SMEs is often highlighted in relation to their contributions to job creation (3.1.), innovation (3.2.) and sustainable development (3.3.)

4.1. The role of SMEs in job creation

According to national statistics in most of the countries and territories, small and medium-sized enterprises are truly predominant in the economy representing more than ninety nine percent of

all businesses and have a significant influence on jobs creation (Ioana SAVLOVSCHI & Raluca ROBU, 2011). In fact, strong empirical evidence confirms that SMEs are a real engine of job creation (International Labour Organization, 2015). Morocco is no exception to these findings despite the difficult statistical identification of SMEs. Formal and informal SMEs have a predominant weight in employment. 73% of employment is provided by SMEs. However, the share of informal SMEs in employment is predominant, reaching 59% of total employment (African Development Bank Group et al., 2021).

4.2. The role of SMEs in innovation

An innovation refers to a new or improved product or process that differs significantly from the unit's previous products or processes and that has been made available to potential users or brought into use by the unit (OECD & Eurostat, 2018) . Indeed, key components of the concept of innovation include the role of knowledge as a basis for innovation, novelty and utility, and value creation or preservation as the presumed goal of innovation. The requirement for implementation differentiates innovation from other concepts such as invention, as an innovation must be implemented, *i.e.* put into use or made available for others to use (OECD & Eurostat, 2018). Since, innovation is perceived as an important factor that produces quality and improves competitiveness (al Suwaidi et al., 2021). Innovative capability stands for the ability to generate novel and useful knowledge or products (Zheng et al., 2010). In fact, firms of all industries are nowadays developing innovation to guarantee their success in the markets (Saunila, 2020). In addition to that, innovation capability is crucial to small businesses (Saunila, 2020). From this perspective, the role of SMEs in the promotion of innovation at the national and international level is often highlighted in parallel to the existence of an innovation strategy. Truly demonstrated, innovation-orientated technology assimilation strategy significantly contributes to SMEs' developing competitive advantages, leading to enhanced market share and sales growth (Rhee & Stephens, 2020). However, the concept of innovation has evolved to concern other related concepts and notions such as Open Innovation (OI). Also, most of the SMEs do not have a sufficient R&D[3] potential to perform their innovation "in house". This is the reason why most of the time they have a policy (*if any*) turned to open innovation (Dou & Hongxia, 2012). Consequently, innovation within SMEs is rather present at the level of companies with strong growth potential, including new companies with rapid growth. When innovation activities require significant fixed costs; as in the case of the pharmaceutical industry, it is the large companies that will be more innovative, but when flexibility and the ability to exploit niches are important, we find a greater number of innovative SMEs (Berbou et al., 2020). SMEs in Morocco are currently going through a very profound period. It is also called upon to be more competitive by changing competition rules, creating value and accelerating innovation processes (Berbou et al., 2020).

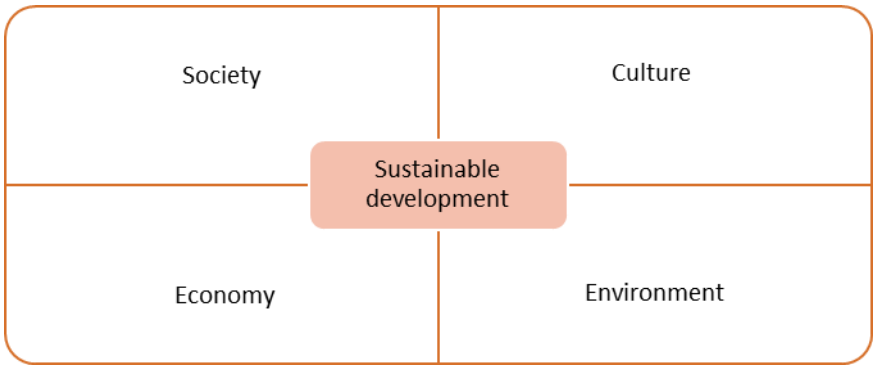
4.3. The role of SMEs in sustainable development

Sustainable development is set to be considered as a key scheme for the United Nations organization. In fact, there are four (4) dimensions to sustainable development which can be presented as reported in the following figure.

Figure following on the next page

[3] In reference to Research and Development.

Figure 1: The four dimensions of sustainable development



Note: Adapted from "Sustainable development". UNESCO, 2021.

These dimensions have been operationalized through the establishment of seventeen (17) goals described as "Sustainable Development Goals (SDGs)" following the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015. The aim of these goals is to encourage multiple measures to be taken regarding social and environmental challenges (HEC Paris, n.d.). In this context, the challenge was to try to review the extent to which SMEs can contribute to the achievement of these SDGs (UNDESA, 2020). In other words, the issue was to try to establish direct and indirect linkages between SMEs and the seventeen goals. In order to demonstrate the relevance, role and contributions of SMEs to the SDGs, the United Nations Department of Economic and Social Affaires (UNDESA) have published a report entitled "Micro-,small, and medium-sized Enterprises and their role in achieving the sustainable development goals". For each goal, a number of arguments, proposals and even advantages of SMEs were highlighted in order to justify the links between these objectives and SMEs. At the end of each argument, a new business models/solutions of MSMEs aiming to achieve the SDG were described. The analyzes and arguments proposed in this document can be summarized as shown in the table below.

Table following on the next page

Table 1: Role of SMEs in achieving SDGs

Examples of some sustainable development goals (non exhaustive list)	Example of MSMEs' role in achieving the set goal following the arguments proposed in the report (non-exhaustive list)
Goal 1. End poverty in all its forms everywhere	a) MSMEs create employment that lift people out of poverty; b) Informal enterprises engage poor and marginalized populations (UNDESA, 2020, p. 5).
Goal 3. Ensure healthy lives and promote well-being for all at all ages	a) MSMEs are healthcare providers; b) Individual MSMEs may make investments in health a priority in business preparations (UNDESA, 2020, p. 9).
Goal 5. Achieve gender equality and empower all women and girls	a) MSMEs participate in the employment of women; b) It inclusive finance can overpass the gender gap and therefore be a significant factor for gender equality (UNDESA, 2020, p. 13).
Goal 10. Reduce inequality within and among countries	a) MSMEs promote economic inclusion and have the potential to regenerate under-served geographic areas; b) Increasing productivity of MSMEs can help to reduce inequality of wages (UNDESA, 2020, p. 23)
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	a) MSMEs provide employment and economic growth in cities; b) Individual MSMEs can jointly develop and participate in a sustainable community that brings together relevant stakeholders to analyze and act on urban functionality (UNDESA, 2020, p. 25).
Goal 12. Ensure sustainable consumption and production patterns	a) MSMEs as a group have significant cumulative social and environmental impacts; b) In comparison to big companies, MSMEs are flexible which makes it more easier to develop sustainable business practices (UNDESA, 2020, p. 27).
Goal 13. Take urgent action to combat climate change and its impacts	a) MSMEs have the potential to make vulnerable populations and households climate resilient; b) MSMEs can reduce the energy use (UNDESA, 2020, p. 29).
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	a) MSMEs represent a large share of added value in international trade; b) MSMEs are an origin of partnership to implement SDGs (UNDESA, 2020, p. 37).

However, the question is to assess the conditions and issues that characterize the implementation of these objectives by SMEs. The barriers faced by SMEs when implementing such initiatives that appeared most frequently were lack of resources, the high initial capital cost of implementing sustainability measures, and lack of expertise (Álvarez Jaramillo et al., 2019). At the national level, studies on the direct or indirect implementation of sustainable development objectives by SMEs in Morocco are gradually increasing.

Nevertheless, Moroccan SMEs must integrate the different environmental practices in its managerial vision (Rahali et al., 2022).

5. GENERAL VIEW OF SMES' CHALLENGES

SMEs are often studied not only in terms of their economic advantages and importance, but also in terms of the fragilities and difficulties that constitute major challenges for them. Undoubtedly, economic globalization has created many challenges for SMEs as a result of the competitiveness boost. Therefore, the downfall rate of SMEs is relatively high, a short period after their commencement (Gamage et al., 2020). In addition to access finance as a challenge for SMEs (*4.1.*), Noe et al. (2017, as cited in Gamage et al., 2020) stressed some competitive challenges such as the challenge of global economic competition (*4.2.*), the challenge of global capital and economic crisis (*4.3.*) and the challenge of ICT (*4.4.*) [4].

5.1. Difficulties for SMEs in accessing finance

Challenges in accessing finance persist for micro-firms, start-ups and innovative ventures with novel business models (OECD, 2019). In other words, the main constraint to SMEs development is its limited access to the conventional financial resources and services such as loans, savings and insurance (Benbekhti et al., 2021). In fact, access to finance is one of the problems highlighted by SMEs as the main barrier to their creation and development, despite their weight in the economic fabric and their driving role in development (Bank Al-Maghrib & Ministry of Economy and Finance in Morocco, 2020). Moreover, the COVID-19 crisis has accentuated the financing difficulties of SMEs. However, SMEs demand for financing is expected to rise even more during the post-Covid era (Adian et al., 2020b). To address this challenge at the local level, the National Financial Inclusion Strategy in Morocco has been part of the ongoing efforts of the financial ecosystem and has defined the catalysts to be mobilized to facilitate access to finance for SMEs and start-ups while mobilizing actors for the development of new alternative financing instruments for these segments (Bank Al-Maghrib & Ministry of Economy and Finance in Morocco, 2020).

5.2. SMEs challenge regarding global economic competition

The evolution of globalization has provided a vast array of opportunities to the whole world. Therefore, companies have moved across the boundaries to take advantage of wider customer base (Masroor & Asim, 2019). Accordingly, and while seeking benefits of globalization and moving across boundaries, these giant multinational companies often pose a serious threat to the local companies of the host country by intensifying the competition for them (Masroor & Asim, 2019). As SMEs build a vital corporation to the economies in developed and developing countries, it is vital to consider the influences of economic competition on SMEs than other industries due to industry-specific features (Gamage et al., 2020). Clearly, it has become challenging for SMEs of growing economies to survive in this global competition (Singh & Kumar, 2020). To summarise, SMEs of less developed countries are more vulnerable because of their limited investment, already insufficient to remain competitive in the market (Masroor & Asim, 2019).

5.3. SMEs challenge regarding global capital and economic crisis

At this level, the challenge is to review how and to what extent an economic or even financial crisis is capable of influencing SMEs. For several authors and researchers, there is a strong correlation between such crises and the survival of SMEs. Admittedly, Naidoo (2010, as cited in Soininen et al., 2012) stressed that between late 2007 and the second quarter of 2009, the global economy slid into a severe economic crisis which has not only been severe for large

[4] In reference to Information Communication Technology.

enterprises, but also for SMEs. Moreover, and since an economic crisis is not always caused by a financial crisis, the COVID-19 pandemic had a very significant impact on SME dynamics. particularly, the COVID-19 pandemic has affected firms of all sizes, but SMEs can be particularly vulnerable for several reasons (Adian et al., 2020b). Furthermore, SMEs are facing additional challenges related to the war in Ukraine. A war that can raise an economic crisis. Inflation, in particular in the price of energy and raw materials, volatility in financial markets and disruptions in supply chains and trade, are having negative impacts on SMEs operations and performance, jeopardising their recovery. The medium- and long-term impacts on SMEs finance remain to be seen (OECD, 2022).

5.4. SMEs challenge regarding ICT

The growth of ICT has been identified as one of the intensification factors for internationalization and globalization of SMEs (Gamage et al., 2020). In developing countries, ICT and mobile technologies are showing a strong expansion, while in the clean technology sector, SMEs can leverage an estimated $1.6 trillion market over the next decade[5] (World Bank Group, 2016). Importantly, Cloud computing, Big Data and Artificial Intelligence are of major importance for SMEs. Furthermore, SMEs represent a key market for such cloud-based offerings (Shetty & Panda, 2021). In addition to this branch, the digital transformation of SMEs is a major challenge for this category of companies. Nevertheless, SMEs lag in digitalisation. In other words, digital diffusion tends to be lower in smaller firms. SMEs face more difficulties in undertaking the complementary investments in skills and organisational changes that are needed to adopt and benefit from technology (OECD, 2019).

6. CONCLUSION

The barriers to SME development – as business owners perceive them – have been fairly well studied. In all countries, the top three are difficulty in obtaining financing, limited access to electricity and competition from informal firms. However, the obstacles are not the same depending on the level of development of the country and the region of location (International Labour Organization, 2015). Therefore, Regional and local governments and development agencies often have significant responsibilities for SMEs and entrepreneurship policies and programmes in their own right, alongside national governments and agencies (OECD, 2008). In fact, the role played by SMEs in employment generation and economic recovery is a key question for policy makers (Ayyagari et al., 2014). The role of SMEs is worldwide acknowledged for their unique contribution to the economic development. However, SMEs must be involved in new economic and development models in parallel with the growing emergence of new professions at international level, particularly in the era of digitalization.

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INTELLECTUAL PROPERTY RIGHTS AS A SOURCE OF COMPETITIVE ADVANTAGE

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ABSTRACT

Innovations represent the very foundation of societal, scientific and industrial progress. They are also regarded as the primary source of sustainable competitive advantage. The concept of innovation has become synonymous with successful business management and competitiveness in terms of the contemporary, modern market. In order to enable transformation of innovations into solid competitive advantages, it is absolutely necessary to protect them through intellectual property registration systems. Unauthorized innovation copying and other intellectual property breaches represent a serious issue, as the stolen innovation becomes the very opposite of competitive advantage; it becomes a threat to the company that invested its scarce resources into its development. Intellectual property protection encompasses patents, trademarks, industrial design, geographical indications and appellations of origin, copyright and related rights. Innovation creation process and intellectual property protection enable companies to build a sustainable market position, along with actively contributing to economic and societal growth and progress.

Keywords: *competitive advantage, innovations, patent, trademark, industrial design, copyright*

1. INTRODUCTION

The processes of integration, liberalization, globalization, and their mutual interactions have caused a dramatic change in the global economy. Adjustment and adaptation to these processes have become a must for all businesses on the market. A continuous struggle to survive, attain a favorable market position, or retain the existing customers and attract new ones has become the day-to-day reality for all businesses on the globalized contemporary market. The aforementioned processes have made it possible for the manufacturers to reach billions of potential new consumers from all over the world, but at the same time, these very same processes made the businesses more vulnerable to a fiercer competition with numerous competitors. Competition on the international market is comprised of business from all over the world - it is a real challenge to stand out from the competition on a market saturated with such a diverse supply of various products. Consequently, one can assume that the only way to achieve a leading market position is to create new value using innovation processes. This can be extremely difficult in this modern day and age, where everything note-worthy has already been seen, done and invented.

Success and prosperity of businesses on the global market directly depend on their ability to innovate and create value, and, inevitably, protect said innovations in order to ensure the exclusivity of their usage. This paper demonstrates the crucial role of innovations and protection of intellectual property rights in achieving and retaining competitive advantage.

2. COMPETITION ON THE CONTEMPORARY MARKET

Entrepreneurship is the backbone of modern economy, but competition is most definitely its driving force. Competition is the external pressure that leads a motivated and ambitious business toward success. Competitiveness is the company's ability to successfully compete with other organizations on the market and conduct business in a way that utilizes its competitive advantages in an optimal way. Competitiveness is a fundamental part of development and progress (Grgić at all, 2010). Competitiveness cannot be achieved without a certain competitive advantage that attracts customers and enables the company to increase their market share. Competitiveness and competitive advantage are interconnected and mutually dependent. Competitive advantage can be defined as the company's ability to produce a new value that exceeds production costs, i.e., the ability to create more value for the customers than the competitors (Tipurić, 1999). Michael Porter, author of a model that determines some of the most important competitiveness factors and their mutual relations, is considered the founder of the competitive advantage concept. According to Porter, the root of competitiveness lies within the environment the company is active in. The competitive advantage strategy encompasses a target customer group, a quality product or service, and implies high levels of productivity, investments, and innovation. The model itself is based on four determinants or limit groups, which are as follows: firm strategy, structure and rivalry, demand conditions, factor (input) conditions, and related and supporting industries. All said factors are interconnected, which demonstrates their mutual interdependence. Furthermore, the model defines two external variables: opportunities from the environment and the role of government (Andrijanić and Pavlović, 2012). Porter's model makes it clear that achieving competitive advantage isn't exclusively dependent on the company's inner competences, but also relies on external factors, such as the characteristics of the environment and institutional support. The competitiveness criteria can be divided into four factor groups, which are as follows:

a) economic performances, f. e.: national economy, international trade, international investments, employment, and prices,
b) government efficiency, f. e.: the state of public finances, current fiscal politics, current institutional framework, business legislation, and social system,
c) business efficiency, f. e.: productivity, labor market, finances, management skills, personal opinions and value systems,
d) infrastructure, i.e., basic infrastructure, technological infrastructure, scientific and healthcare infrastructure, education, etc.

Competitiveness reflects the market power of the firm and refers to its long-term market position. The competitiveness concept in itself includes various disciplines such as comparative advantages, appropriate management strategies and various historical and sociocultural perspectives. It is a multidimensional concept related to prices, production, and distribution. With regards to the Porter model, factors that determine competitive advantage can be grouped into internal and external factors. Funds, availability of resources, management skills, and the entrepreneur's skills and knowledge all count as internal factors. The entrepreneur's experience, knowledge and vision are key to creating a strategy that will differentiate the company from its competitors. Market size, availability of financial services, economic environment and other environmental factors count as external factors, and they also influence the firm's ability to create a distinction that will make it stand out from other market participants.

Furthermore, it is necessary to distinguish between four dimensions of the competitiveness concept, which are as follows: the long-term orientation, control, concept relativity and dynamics. It is also possible to identify the competitive advantage factors of the industry, which are: entry barriers, the bargaining power of buyers, and substitute products. The interaction of all these factors introduces a fourth force, which is rivalry. The intensity of rivalry is directly proportionate to the intensity of other factors (Bobera, Hunjet and Kozina, 2015). In the 21. century competitiveness is mostly based on new, specialized skills, immaterial resources and technological infrastructure. The global environment demands for a comprehensive approach and analysis that includes all aspects and all participants of the process of creation of new value, such as: individuals, companies, local communities, regions, and countries. Uniqueness, diversity, creativity, and innovations should be continually improved and perfected due to the dramatic acceleration of the globalization processes. The modern world is different from anything humans have ever experienced before – instead of steel and coal, information counts as the new raw material. The most important resources are no longer products produced by machines, but ideas born of imagination and creativity (Dragičević, 2012). Competitiveness isn't static; it must continually evolve, adapt, and improve to keep up with the dynamic global market. One must compete with everyone; with businesses from all around the world, with their products, services, skills, and knowledges… because that is what the tsunami of chances demands. The environment of today is different, and the participants are going in different directions. Companies no longer have physical headquarters. The ideas of foreign are becoming foreign themselves (Sirkin at all 2008). In the past, before the market has been altered by technologies, globalization and integration, companies were able to focus on the creation of a sustainable, long-term competitive advantage; one that was objectively deemed as the best fit for the firm. In a stable environment, such an advantage utilized the available resources in an optimal way as it led the company toward market success like Adam Smith's invisible hand. In this type of environment, competitive advantage was akin to the main, load-bearing wall, especially if it was unique and difficult to imitate. Nowadays, it is basically impossible to build a sustainable, long-term competitive advantage – most of the modern-day competitive advantages are only temporary. Due to the general informatization of the world, other firms are notified about their competitors' next moves almost momentarily, which allows them to counteract and obstruct their plans immediately. Companies that still swear by traditional management rules (which were only applicable to the stable market) and refuse to adjust their perception, direction and business models because they believe that the current market conditions are a mere momentary inconvenience, are so focused on the creation and maintenance of a single competitive advantage that they neglect to undertake any research or development of new solutions. These firms often forget to consider the fact that new competitors pop onto the market every day, changing the rules to the game. This kind of behavior leads straight to ruin, as the competitors use imitations or substitute products to destroy the exclusivity of such a carefully curated competitive advantage and prevent its optimal capitalization. The general availability of technology and experts from all over the world, industrial espionage, and the possibility of constant contact and consultations have created a world where imitations appear almost simultaneously with the original invention, forcing companies to constantly pump out new inventive products. A successful company is able to rapidly create and utilize new competitive advantages whilst also undertaking quick and effective countermoves in order to neutralize their competitors. The modern market demands that the firms create endless new competitive advantages, which has resulted in an appearance of a certain paradoxical side-effect: product cannibalization.Product cannibalization refers to the company's initiative to substitute their own existing products with newer models before their competitors are able to. Typically, a higher-quality model with better performances is introduced to the market first, followed by a cheaper model of slightly lower quality.

This demonstrates that product cannibalization doesn't necessarily mean that the initial product will disappear from the market. Companies use cannibalization to redirect some of the competitors' customers toward their own products. Apart from poaching some of the competitors' customers, cannibalization will cause a decrease in sales of the initial product. Product cannibalization also implies that the firm is willing to give up guaranteed income streams resulting from existing products, whilst the anticipated income resulting from new products remains uncertain (Daraboš, 2015). Competitiveness is built on competitive advantage. Innovations can be singled out as the only reliable source of competitive advantage on this modern, hypercompetitive market. It is thus evident that the process of cannibalization goes hand in hand with the process of creative destruction. Creative destruction is the process whereby companies constantly develop and launch new, innovative products, and each new invention makes its predecessor obsolete and redundant. This way, waves of creative destruction are created. The entire situation is, of course, paradoxical, as the innovation frequency becomes proportionate to the number of companies that go out of business. One could say innovations are the springs of creative destruction (Atkinson and Ezell 2012). In the 21. century, international trade has reached epic proportions – market mechanisms are working hard to allocate resources from all around the world to those companies that satisfy their customers' demands in the most efficient way. These companies are considered competitive. Nowadays, it is essential to identify the optimal competitive advantage, as it is the only way to develop global competitiveness and participate in the allocation of global income on the international market. Competitive dynamics are a good indicator of the market state, especially for those companies that are considering entering new markets. When researching competitive dynamics, one must focus on the strategic actions of one of the companies on the market, as well as the countermoves of its competitors. There are three important characteristics that show the relationships between the existing competitors: real actions and behaviors of the companies, competitive interdependence, and the causal relationship between the actions and reactions of the companies. Real actions and behaviors are the actions conducted by the company on the market. Sustainable competitive advantages are the long-term basis for every successful business (Porter, 2008). An above-average business built in the absence of a real competitive advantage is a sign of mere profit collection. An organization is supposed to build its competitive advantage using their strategic advantages as well as its available resources (Grimm at all 2006). When one takes into consideration all the aforementioned global trends, processes and the conditions on the global market, one must conclude that the modern companies are forced to compete for their customers on a hypercompetitive market. New knowledges, information and technologies are circling the world at an incredible speed, whereby every day brings a new breakthrough in the fields of science and industry. The speed of information transfer has caused a constant dynamic interaction between markets, an increase in the number of competitors, and a competition that is fiercer than ever before, whereas the time to react to the opponents' actions has become impossibly short. In order to maintain or improve their market position, managers are forced to make crucial decisions in no time, which is why an updated analysis of the current global trends, environment changes and their competitors' actions needs to be available to them at any given moment. All participants of the hypercompetitive market need to adapt to the rapid hyperdynamic changes in the environment daily, as well as keep up with the current trends. Just like the products, said trends are also characterized by an increasingly shorter life cycle. In order to prosper on the hypercompetitive market of today, a firm needs to be flexible, inventive, adaptable, and ready to make quick decisions. Market participants need to face the fact that their shiny and new invention, one that took months or even years of research, development, and hard work, may become obsolete as soon as the next day. Markets, even those that have until recently been characterized by their stability, are becoming increasingly dynamic, and it is important to make all future business

decisions accordingly. Competitive advantages, innovations and market positions are all characterized by an extremely short life cycle on the hypercompetitive market of today, which is why all competitive advantages and market positions must be perceived as temporary. Under these circumstances, competitive advantages are only lucrative as long as the competitors aren't able to replicate them or neutralize them by developing substitute products. Hypercompetition is characterized by extremely quick and inventive actions, which in the end only fuels the already fierce rivalry (D'Aveni, 2010). These conditions are very profitable for the consumers, as the continuous flow of innovations and the deliberate price reductions aimed at attracting customers all result in extremely diverse goods at acceptable prices. Accordingly, competitiveness is a basic prerequisite for survival and prosperity on the modern, dynamic market. Competitiveness can be built solely on the basis of competitive advantage. Competitive advantage represents a certain property or feature that the competitors do not possess, whereby its exploitation satisfies the wants and needs of the customers and leads toward gradual appropriation of a greater market share. 21. century is the century of hypercompetition, which implies a constant fierce and aggressive rivalry between the companies from all over the world. This is why nowadays even the most lucrative competitive advantages are considered only temporary. The only way to survive and prosper in these circumstances is the continual utilization of new competitive advantages, which is only possible through the constant process of innovation. Any company that wishes to thrive on the market needs to be able to transform itself into an innovation incubator.

3. INNOVATIONS AND IP RIGHTS AS KEYS TO BUSINESS SUCCESS

Innovations are the results of research and development, or possibly an accidental discovery. They represent the foundation of societal, scientific, and industrial progress, as well as the primary source of competitive advantage on the modern market. An innovation refers to something new; a discovery that has sprouted from an idea; something that alters the existing understandings, beliefs, and established practices. Innovations are the products of the most valuable resource a company can possess – the human mind. Ideas have become the driving forces of the economy, whereas innovations and entrepreneurship are perceived as the foundation to a knowledge-based society. Innovation politics have blossomed into the main strategic means to industrial and national competitiveness. Innovations represent the findings and discoveries launched onto the market so that their application can be disseminated. They stem from technological development and encompass a comprehensive process from the conception of an idea to a new product or service launch. Once an innovation is available on the market, a portion of the consumers become customers, whereas the competitors often attempt to copy or imitate the invention. Innovations can be grouped into:

1) product innovations – introduction of new or improved products or services,
2) process innovations – introduction of new or improved methods of production or distribution,
3) marketing innovations – implementation of new marketing methods such as new product designs, packaging, or improved pricing and promotion methods,
4) organizational innovations – adoption of new business practices or improvement of the existing ones; creation of new workplaces, external contacts, and relations (Lazibat and Kolaković, 2004).

As a phenomenon, innovations are created on the micro level, in individual companies, and yet they induce economic growth on a macro level. Innovation isn't necessarily the invention of something new but can also refer to the act of combining existing and previously known elements in a new way, thus creating different results and additional value.

Apart from the implementation of new ideas in order to create value for the firm, innovations also imply the abandonment of obsolete service, systems and processes. Innovation process encompasses the generation of an idea, research, development, feasibility, and applicability assessment, and finally, implementation. A company that manages to develop and implement a revolutionary innovation first usually conquers the entire market in a sort of temporary monopole. This company generates extraordinary profits due to the fact that possible substitute products do not yet exist. The initial company dominates the market until their competitors develop their own substitute products or copies of the original invention – but even after that happens, the initial company will forever be retained in the minds of consumers as the 'original one.' The frequency of innovation development isn't solely influenced by the inspiration and motivation of the inventors, but also by numerous external factors. International trade agreements, international IP agreements, international investment and knowledge transfer treaties, technological progress, national quality control policies, market structure, the availability of funds and funding, tax policies, the government's attitude toward innovations, research and development institutions, as well as potential and active customers all contribute to the creation of an innovation – intensive nation. Nowadays, failure to innovate creates unsuccessful companies, causes the loss of the national export competitiveness, and can ultimately result in an economic crisis. Failure to innovate quickly and efficiently brings about the economic equivalent of a heart attack (Andrijanić and Pavlović, 2012). Contrary to the popular misconception, the terms invention and innovation aren't synonymous. The term innovation encompasses the entire innovation life cycle process, not just the act of idea generation. Innovations are the result of technological development and thus entail a comprehensive process from idea generation to the launch of a new product or service. Innovation includes the acts of commercialization and adding value to new findings, whereas the term invention refers to the discovery and creation of something new (Grgić at all, 2010). In other words, if a scientist discovers a revolutionary new cure but fails to commercialize it, this cure is an invention, not an innovation. Innovations go through the same life cycle as products – they evolve from an idea and enter the development phase, transferring thereafter into the growth phase. Their life cycle culminates once they reach maturity. Innovations go through the process of knowledge creation and transfer, followed by the commercialization of said knowledge using investments. The knowledge is transformed into new products, processes, business development, plans and marketing actions in order to create new workplaces and additional value. The consumers' willingness to adopt an innovation depends on many factors. If the innovation is being launched by a large, reputable company, it is more likely that the consumers will adopt the product in anticipation of a favorable price to quality ratio. If the company isn't well known, its marketing experts will need to work harder on product positioning, using strategies such as price differentiation (Kesić, 2003). Consumers are more likely to try out a new product if it is affordable, whereby acceptable quality at low prices serves to entice the customers to purchase the product again. When it comes to innovation adoption, local culture and customs are of crucial importance – some innovations will never be accepted in certain regions, no matter how affordable and high-quality they are. This is why a detailed marketing research and analysis is necessary prior to entering new markets (Kesić, 2006). When attempting to create competitive advantage, protection of intellectual property is just as important as innovation development. Today's markets are characterized by an extremely intense and aggressive rivalry, whereby the competitors are able to swiftly gather information on their rival's invention and obstruct them from turning it into a competitive advantage through imitation or copying. This is of course possible due to the modern technological interconnection and the incredible speed of information circulation. Protection of intellectual property is a form of institutional support a certain country offers to its inventors, as it safeguards the rights and interests of the inventors on said territory.

The country acknowledges the socioeconomic benefits innovations produce, as well as the positive externalities resulting from the innovation process, and therefore awards a temporary monopole over the invention exploitation to the inventor. The ultimate goal of this exercise is to stimulate as many of the aforementioned innovation benefits as possible. Intellectual property is an intangible form of property and counts amongst immaterial goods. Despite this, intellectual property has all the characteristics of tangible property, and can hence be sold, bought, or inherited just like any other physical goods. Intellectual property represents immaterial possessions that can be crucial to building a successful business and is therefore to be protected using the legal systems for IP rights protection. Intellectual property law encompasses a system of legal instruments that determine and define legal ways of intellectual property acquisition as well as its protection from unauthorized usage (http://www.dziv.hr/hr/intelektualno-vlasnistvo/o-intelektualnom-vlasnistvu/). Intellectual property protection enables authors and patent owners to profit off their own work or creative efforts. Accordingly, their rights are protected by article 27 of the Universal Declaration of Human Rights. Paris Convention for the Protection of Industrial Property of 1883 was one of the first official conventions to recognize the importance of IP protection, followed by the Berne Convention for the Protection of Literary and Artistic Works of 1886. Intellectual property protection is extremely important, as the progress and wellbeing of humanity rest on its ability to create new technological and cultural works, whilst intellectual property legal protection systems encourage further investments in the innovation processes. Moreover, promotion and protection of intellectual property stimulate economic growth, create workplaces and improve the general quality of life. Efficient intellectual property protection systems allow countries from all over the world to understand and acknowledge the potential intellectual property holds as a catalyst for economic and sociocultural growth. IP protection systems contribute to finding balance of the inventors' interests and the public interest, thus creating a creativity- and innovation-friendly environment (http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf). Intellectual property protection systems aren't put in place in order to conceal knowledges – on the contrary, they represent a legal form of knowledge dissemination on the market. IP rights constitute the basis of knowledge and technology transfer. Given the recent increase in the volume of international trade, which, among other things, also includes products by well known brands, it is necessary to enable an international harmonization of IP laws and procedures so that firms can protect their innovations all over the world. IP rights protection is especially important in the high-tech industries, telecommunications, electronics, entertainment and service sectors, and the education industry. Intellectual property provides a basis for growth and development of said industries. Intellectual property protection is extremely important, due to the conditions on the modern market. Nowadays, anything and everything can be copied and forged. Piracy holds an appeal to many manufacturers, as the forger gets to use the original brand's reputation and therewith generate high profits per unit and conquer a large share of the market. The piracy penalties are relatively low as it is difficult to detect the scammers and hold them accountable. The consumers often prefer the forgeries over the original brand's products due to their low prices and acceptable quality. Intellectual property encompasses all creations of the human mind: inventions, literary and artistic works, symbols, names, and pictures used in business. Intellectual property can be divided into two groups: intellectual property and copyright. Industrial property encompasses the rights and regulations utilized to protect the manufacturers' business interests, market position and funds invested in research and development from their competitors, whereas copyright refers to the authors' exclusive rights to their literary, scientific, or artistic work. Patents, trademarks, industrial designs, and geographical indications and appellations of origin are considered industrial property, whereas copyright encompasses literary works such as novels, poems, plays, movies, music, or artistic works like paintings, photographs, sculptures, architectural designs, and other creative works.

Copyright also refers to related rights, put in place to protect the rights of performers, actors, producers, phonogram producers, and radio and television broadcasting organizations (http://www.dziv.hr/hr/intelektualno-vlasnistvo/o-intelektualnom-vlasnistvu/). Patents are the most common protection method for technical inventions. The filing system is designed to contribute to innovation promotion and technology transfer and dissemination in a way that benefits its users, inventors and the general public (http://www.wipo.int/edocs/pubdocs/ en/wipo_ pub_895_2016.pdf). A patent is a right granted for an invention that offers a new solution to a technical problem, and usually relates to a specific product, process, or usage (http://www.dziv.hr/hr/intelektualno-vlasnistvo/ patenti/). A patent owner possesses the exclusive right to commercialize and exploit the patented invention. All entities who try to commercially exploit said invention during the duration of the protection period without the owner's explicit consent are liable to sanctions. Patent protection is usually valid for a maximum of 20 years from the date of filing the application. Discoveries, scientific theories, and mathematical methods, aesthetic creations, rules, instructions, and methods for performing mental activities, games, presentation of information, and computer programs aren't viewed as inventions and can therefore not be subject to the patenting process. Furthermore, there is a distinction between the patents filed for the protection of products and patents filed for the protection of a certain process. Both can be included in one patent application, where both the new product and the method of producing said product are disclosed. The patenting process in itself is very complex and expensive, especially if the inventor is filing an international application. Given the state of the modern market, an international patent application has become a necessity for all companies that wish to create a significant competitive advantage. Trademark is a widely used form of intellectual property protection. Trademark is an exclusive right granted for a sign that is used to distinguish a certain company's products from other similar items on the market. Names, logos, emblems, labels and other differentiating characteristics of a product or service can be protected by a trademark, thus ensuring the owner's exclusive usage of these markings (http://www.dziv.hr/hr/intelektualno-vlasnistvo/ zigovi/postupak-zastite-u-hrvatskoj/). Trademarks are used to differentiate a company's products from their competitors' items and are extremely useful to market positioning. A trademark is a market asset utilized to protect the resources invested in marketing. It represents the market identity of the product and therewith the company itself. Trademarking enables protection of intellectual property and lowers the chances of an accidental violation of somebody else's IP rights. Trademarks can be used to protect a sign or a combination of signs, words, letters, numbers, pictures, shapes, colors, and any combination thereof. Some countries grant trademark protection to 3D, audio, or olfactory signs. An industrial design is the visual appearance of a certain product or object. Industrial design refers to those characteristics that make the product attractive and desirable, thereby increasing its commercial value. It is used to protect spatial and planar features of industrially produced or artisanal products. These features, such as lines, contours markings, shapes, or textures, materials, and ornamentation, are to be visible during the intended use of the product. Human beings naturally tend to prefer aesthetically pleasing, interesting and unique objects, and industrial design protection is there to enable capitalization of these features. Just like trademarks, designs are used as a method of differentiation and market positioning and can be utilized as a market asset. Industrial design is used to protect colors, textures, materials, lines, shapes, and ornamentations, i.e., packaging design, customary and complex product design, product set design, the design of a part of a product, design of a logo, informatic icon, typographic letters and sign, map designs, or interior designs. Industrial design is utilized to protect the aesthetic characteristics, and the granted protection isn't extended to product functionality. Geographical indication is the name of a geographical region or a sign indicating that a product or a service originate from a specific geographical location and possess specific quality and characteristics attributable to its

geographical origin (Grgić, 2010). They are usually used to mark agricultural products, as their quality is influenced by the soil, climate, and other geographical factors. In order to stress this, the name of the product is comprised of the location of cultivation and manufacture. Geographical indications can also be used to stress the key human resources, for example, special traditional skills and methods specific to a certain region and crucial to the product's exquisite quality (http://www.wipo.int/edocs/pubdocs/ en/intproperty/450/wipo_pub_450.pdf). Geographical indications represent an important competitive advantage, as they contribute to differentiation and distinction of certain products. These indications help consumers identify indigenous products that have been cultivated in the buyers' preferred geographical area and produced in accordance with the required high-quality standards, whereas manufacturers utilize them to protect themselves from the competitors who lie about the origin of their products in order to generate unfair advantage. Appellations of origin are a special kind of geographical indications, used on product that owe their exquisite quality exclusively to the environment they have been produced in. Appellations of origin represent a more specific form of protection than geographical indications. In order for the appellation of origin to be granted, the entirety of cultivation, production and processing need to be conducted in this specific area. Geographical indications and appellations of origin are used to guarantee high quality standards, special characteristics and excellent product or service reputation to the customers. Copyright is used to grant protection of literary and artistic works to authors, artists, and other creative workers. Copyright represents the exclusive right of authors and creators to their works. Copyright isn't used to protect an idea, but works that express and reflect said idea, regardless of the form or quality of said expression. Copyright is an original, intellectual, literary, artistic, or scientific work, characterized by its individuality, originality, and creativity; one that has been expressed in some way and has resulted from the human mind and creativity. Copyright protects the moral and material rights of authors, as well as their other interests. Copyright is conferred to the author by the mere act of artistic creation and, contrary to the majority of other forms of intellectual property, it is not subject to any administrative or registration procedure (http://www.dziv.hr/hr/intelektualno-vlasnistvo autorsko-pravo/). Copyright is used to protect novels, poems, plays, newspapers, commercials and adds, computer programs, databases, movies, music, choreographies, paintings, sketches, photographs, sculptures, architectonic expressions, maps, and technical drawings. Copyright is usually valid from the moment of artistic creation and up to 50 years post the author's death (70 years in Republic of Croatia). Accordingly, authors can authorize or prohibit usage, reproduction, public performances, recordings, broadcasting, translation, or adaptation of their work. Copyrights are transferrable, but it is important to note that an adequate dissemination of creative works requires significant monetary investments (f. e. book to movie adaptations). This is why authors often agree to sell away their rights in exchange for a single substantial payment, sometimes combined with occasional royalty payments.

4. IONIZATION TECHNOLOGY INVENTION AS A COMPETITIVE ADVANTAGE

The invention 'Ionization Technology for Lowering the Pour Point of Crude Oil and Bunker Fuel' has been finalized in 2014, after 20 years of research and development. Said invention is the property of a natural person and is to be utilized in the oil industry. Heavy crude oil and bunker fuel have been known to cause some of the major problems in the oil industry, as they regress to solid state of aggregation at temperatures as low as 25 °C. Extra heavy crude oils are characterized by an even higher pour point, and some even solidify at 30 °C. Such oils cannot be extracted from the oil well or transported through pipelines as they clog the pipes and obstruct the production process at the very oil well. These problems are even more extreme when it comes to submarine pipelines, which are characterized by environmental temperatures under 10 °C.

The oil industry has been solving the aforementioned problems with pour point depressants or pipeline heating systems for decades. Pour point depressants are expensive chemical solvents that are very damaging to the environment and that become progressively less and less effective as the temperature of the environment decreases. Moreover, pipeline heating systems aren't always applicable, and it is also important to note that they generate significant costs with regards to energy consumption. On the other hand, Ionization technology lowers the pour point of heavy crude oil down to 0 °C in an eco-friendly way, keeping the oil liquid and transportable at low temperatures without additional chemicals or energy consumption. Unique ionization cores, manufactured through a special alloy-casting procedure, make up the essence of this invention. The device itself is static and doesn't require any fuel or power supply - it is simply to be mounted onto the oil well so that it can achieve direct contact with the oil at the very beginning of the exploitation process. During its passage through the device, the oil comes into contact with the aforementioned cores, allowing them to modify the arrangement of its molecules. The molecules drift apart and rearrange in a way that prevents the oil from regressing to solid state of aggregation at lower temperatures. This doesn't affect the quality of the oil or its basic chemical properties in any way. This phenomenon has been tested and confirmed by the Central Examination Laboratory of the Croatian Refinery INA and the The Ruđer Bošković Institute. The oil industry is a closed industry with high entry barriers. This industry has been using the same tested and tried solutions for decades and is not keen on accepting innovations that have been developed by newcomers. Inventions have a chance of being adopted only if they have been developed by one of the industry's existing giants. As a newcomer, it is extremely difficult to get in touch with significant managers and the industry's decision-makers. Furthermore, this industry is characterized by frequent industrial espionage and constant attempts at appropriation of others' inventions. Given that the subject invention generates significant savings in the area of oil transportation, and thus a lot of attention from the people within the industry, it was deemed necessary to protect it before attempting to market it. The protection of IP rights also served as a means to increase the bargaining power and the inventor's credibility during possible marketing negotiations. The national patent application has been filed with the State Intellectual Property Office on September 25th, 2014. The international application has been filed on September 24th, 2015. The patent application has been drafted and completed in cooperation with the patent attorneys at Producta Ltd., which have henceforth been authorized to handle the entire procedure. Considering that the innovation was intended for the international market, the inventor decided to focus on the international patent application, whereas the national one was filed just for the sake of formality. The patent application is comprised of 32 pages and 15 claims, seeking to protect the composition of the ionization cores, the alloy-casting process, the construction of the entire device and the process of inducing the molecular changes in the treated crude oil. The invention description is 13 pages long and it details the entire invention, as well as its construction and functionality. 12 drawings were used in order to explain all the functional parts and the way the device is to be put together. 4 additional graphs were utilized to illustrate the laboratory research that has been conducted and to confirm the changes induced in the molecular structure of the oil. The cost of this application was 7.500,00 Croatian kuna, whilst the costs of filing an international application with WIPO (including the costs of the International Search Report) amounted to 18.900,00 Croatian kuna. The application was filed in English. After filing, WIPO assigned it the serial number PCT/HR2015/000017. Once the application was filed, WIPO initiated an international examination in order to ensure the novelty of the invention. An International Search Report has been issued on February 12th, 2016, and it confirmed that the filed patent claims meet all the necessary prerequisites: novelty, inventive step and industrial application. The conducted examination didn't find a single prior patent that might threaten or dispute the novelty of the subject invention.

All existing patents from the oil industry were herewith classified as the preexisting state of the art. The application didn't contain any ambiguities or mistakes; hence it wasn't necessary to alter or amend it. The application has been published on March 31st, 2016, which made it available and visible in all patent databases. It was also assigned an international publication number, WO 2016/046578 A1. On March 24th, 2017, 30 months post filing, the application has entered the national phase of the process, and it was necessary to single out the countries where IP protection shall be requested. Given that the subject invention holds the potential to transform the face of the global oil industry, the inventor chose countries characterized by significant oil production. Application costs per country were as follows:

Country	Application cost (Euro)	Estimated Total Registration Cost (Euro)
USA	3.500	3.500 – 4.500
Canada	2.800	3.000 – 4.000
Brazil	3.100	1.800 – 4.000
Japan	5.900	4.000 – 7.000
China	3.500	1.500 – 3.000
Mexico	3.800	1.500 – 3.000
Columbia	2.600	1.500 – 3.000
Qatar	3.900	2.500 – 3.500
Saudi Arabia	3.000	2.500 – 3.500
Iran	3.100	1.500 – 3.000
Malaysia	1.400	2.000 – 3.000
EuropeanPatent	4.100	2.200 – 3.000
EurasianPatent	4.450	1.500 – 3.000
Australia	2.900	2.000 – 3.500
India	1.650	1.500 – 3.000
UAE	2.500	2.500 – 3.000

Table 1: International Patent Application - National Phase Costs
(Source: autors)

Said costs include the application and attorney fees, as well as translation costs if a certain country doesn't accept applications in the English language. Successful completion of the national phase isn't possible without a competent and experienced patent attorney –hiring reliable local patent attorneys for every elected country depends on the connections the national patent attorney has forged with their foreign colleagues. The applicant is required to grant a power of attorney to every single foreign patent attorney, so they can take over the local patenting process. Patent annuity fees are a dreaded additional cost to the applicants. The applicant is required to pay anywhere from 400,00 to 900,00 Euro per country annually. If the applicant fails to pay said fees, the patent application is discarded immediately. Furthermore, the applicant is required to pay these fees even during the national phase's patentability examination, although at that point, it's still unclear whether the patent shall be granted or not. The national phase examination usually takes up to 3 years. Once the European or the Eurasian patent has been granted, the patent owner still has to go through the validation process, thereby specifying the exact countries where they plan on seeking IP rights protection. This costs anywhere between 1.000,00 and 1.500,00 Euro per country. The countries that require additional validation with the European Patent Office are as follows: Austria, Belgium, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France,

England, Greece, Hungary, Ireland, Italy, Holland, Norway, Poland, Portugal, Romania, Sweden, Slovakia, Slovenia, Iceland, Lithuania, Luxemburg, Latvia, and Turkey. It is possible to extend protection to Montenegro and Bosnia. Eurasian Patent Office, on the other hand, encompasses the following countries: Russia, Belarus, Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, and Turkmenistan. If the inventor decides to seek patent protection in Qatar, Saudi Arabia, Iran or United Arab Emirates, the power of attorney required by the local patent attorneys is only considered valid after a completed process of full state certification. A signed power of attorney first needs to be notarized, then certified by the local municipal court, followed by an additional certification issued by the Croatian Ministry of Justice. Finally, the power of attorney needs to be certified by the Croatian Ministry of Foreign and European Affairs. After the document has been certified by all these institutions, it needs to be subjected to consular certification. The Qatar and Iran Embassies are located in Zagreb, whereas the consular certification for the territory of Saudi Arabia requires a trip to Sarajevo. The Embassy of United Arab Emirates is located in Berlin. The patent application has been subjected to patentability examination in every elected country and has already been published in several. Given that the majority of countries base their final decision off the International Search Report issued by WIPO (which was in this case extremely promising), patent has been granted for the majority of elected territories. Once the invention was properly protected, one could finally address the marketing process. Considering that this is a unique international invention, the industry has demonstrated both great interest and scepsis. Henceforth, the invention has been offered to several industry giants and will ultimately be sold to one exclusive owner, along with all the appurtenant IP rights. This will award the buyer a unique competitive advantage on the market. Not only does this invention accelerate exploitation and facilitate transportation, but it also eliminates chemical pour point depressants and pipeline heating systems. This generates significant savings and helps preserve the environment. All these benefits will become a part of the exclusive buyer's unique competitive advantage. The inventor has been approached by several oil companies, but the negotiation is yet to be finished. Even though the oil industry isn't keen on innovations developed by newcomers, they have expressed interest due to the unique character of this invention. Efficiency of the invention has also been demonstrated and proven by utilizing one of the several available prototypes, but for the most part, the attention of the industry has been captured due to the invention's potential to revolutionize the entire oil exploitation and transportation processes. Accordingly, it is clear that innovations are an efficient way of achieving competitive advantage in the oil industry.

5. CONCLUSION

The modern market has been forever altered due to the processes of globalization, integration, and technological progress. The entire market of the 21. century has been tailored according to the needs of the consumers, and due to the constant aggressive and fierce competition between rival companies from all over the world, these modern times have also been named the era of hypercompetition. In such conditions, even the most lucrative competitive advantages are only temporary. The only way to survive is to constantly develop and exploit new competitive advantages, which is only possible through continuous innovation creation. Even though innovations are the key to development, the act of creating innovations isn't enough to achieve competitive advantage. The hypercompetitive environment is filled with risks such as industrial espionage, innovation theft, or imitation, which is why innovations need to be properly protected. Only protected innovations can blossom into firm competitive advantages. Innovation protection is achieved through systems of intellectual property protection. Intellectual property can be divided into patents, trademarks, industrial designs, geographical indications and appellations of origin, and copyright.

The type of protection is to be chosen in accordance with the type of competitive advantage that needs protection. Innovations and their adequate protection are a secure way of building a sustainable competitive advantage even on a hypercompetitive market. Innovations hold the potential to revolutionize entire global industries and thereby initiate economic and sociocultural growth.

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RESILIENCE APPROACH FOR MOROCCAN PUBLIC HEALTHCARE SUPPLY CHAIN: WHAT AFTER COVID19?

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ABSTRACT
covid19 pandemic has severely tested the healthcare supply chain. It revealed many managerial concerns in the Moroccan healthcare sector. Therefore it is necessary as academics to conduct research about the nature of crisis handling at the level of the healthcare supply chain. The aim of this conference paper is to make an overview of strategies and approaches made by the healthcare supply chain and therefore to what degree it was effective during crisis time. an investigation was held on two Moroccan hospitals in the north region.
Keywords: *Resilience, Healthcare, Supply chain management, Covid19, pandemic, Risk, Crisis*

1. INTRODUCTION

Resilience of the healthcare supply chain is one of the areas not much investigated. However there is no consensus on what resilience is exactly. We can say that resilience is an approach that helps organizations to overcome disruption events and so return to normality in order to ensure the service level desired. Certainly the covid19 pandemic was a major event that escalated the academic interest of resilience of the healthcare supply chain. It was a test of the capability of the healthcare systems to challenge their management structures including Morocco. Healthcare is the backbone of human development in any country, this leads us as academics to start developing more research and investigations in the healthcare context. Moreover, enhancing health care reform in Morocco is a priority for all stakeholders, aiming to boost the general performance for healthcare organizations by reducing and eliminating unnecessary wastes. The emergence of the covid19 pandemic is a complex event which is considered as an opportunity to learn more how to deal with uncertainties and construct more robust managerial approaches. The Moroccan healthcare sector suffers several difficulties, which sustain the system for achieving the objectives. Furthermore, the supply chain should be more implemented in the healthcare sector especially in crisis situations, the supply chain resilience is an effective approach to enforce strong communication and promote coordination flexibility, readiness and agility. It requires the effort and need for actors to change their approaches. The plan of the present paper is summarized as follows:

- Present resilience specificity in the healthcare context
- Present main healthcare supply chain behavior during the pandemic in the context of Morocco
- Clarify issues obstacles of resilience of healthcare supply chain during pandemic
- Identify aries of possible developpement.

2. HEALTHCARE SUPPLY CHAIN

The supply chain is a set of processes between several actors to ensure the effectiveness and efficiency of operations and the satisfaction of stakeholders. The concept appeared with the development of information and communication technologies in the industrial environment. Indeed, the hospital supply chain has remained little advanced in comparison with the industrial and commercial supply chain. Research on the adaptation of the supply chain in the hospital environment only began in the late 1980s in North America. According to (Swinehart et al, 1994).

A health facility consists of five activities to meet the needs of patients. Internal logistics: the activity of acquiring, receiving, and distributing the various supplies used to support the provision of intermediate and final services Demand management: the objective of predicting, planning and directing the use of the various resources necessary to meet needs. Operations and services include all the activities ensuring the passage of the patient in the hospital center from admission to discharge. External logistics: consists of medical follow-up of the patient, ancillary services to patients represent the secondary activities offered by the hospital: gift shops, religious programs, etc.

(Landry, 2001) presents the structure of a hospital as interfaces between the following services:

- a purchasing and supply function for products, materials and consumables;
- a patient reception, management and transfer function;
- a hotel and catering function;
- medical-technical functions: pharmacy, sterilization, laboratories and imaging.

Sampieri (Sampieri 2000) classifies hospital logistics activities into:

- Traditional logistics: includes the management of physical flows (purchasing and supply, transport, distribution)
- Service logistics: serves to manage patient flows simultaneously with demand.

(Taher Hassan, 2006) identifies seven areas of intervention in the hospital supply chain. These seven components are divided into three levels (strategic, tactical, operational):

1) Stock management models (operational);
2) Flow management resources and tools (operational);
3) Organization of supplies (tactical or even strategic);
4) The hospital information system (tactics);
5) Configuration of the healthcare system (strategic);
6) Future trends in hospital logistics (strategic);
7) Capitalization of knowledge and feedback on all fields of intervention (operational, tactical or strategic).

3. SUPPLY CHAIN RESILIENCE

Supply chain resilience is an emerging concept that started to take interest recently. Supply chain systems are faced with multiple risks events that could constantly disturb their activities Such as Natural disasters and economic crises (glinchery, 2009). The evolution of society and globalization makes supply chains more vulnerable. Searching for new mitigation risks. Risk disruption severely affects performance operations for organizations which cause losses of profit and quality, and service level (Kumar, 2014). Organizations are treated continuously by changing disruptions in the environment. Traditional methods of the supply chain networks have to be more adapted for change in process and structures. The crisis situation is considered a very complex building solution and strategy is not that easy. It is evident that people, organizations and societies should transform the way of thinking and perceiving reality especially with environmental evolutions. Supply chains are more concerned by this issue. However, supply chain networks are essential for normality of human existence, supply chains are responsible for normality of food, medicine and all necessary items for all community categories. Although there is no consensus about supply chain resilience there are some papers that treat supply chain resilience theoretical framework and issues.

Table 1: Definitions

Author	definition
Christopher & Peck (2004)	"the ability of a system to return to its original state or move to a new, more desirable state after being disturbed";
Sheffi (2005)	resilience represents the ability of a material to recover its original shape following a deformation
(Ponomarov & Holcomb 2009)	"Supply chain resilience is the adaptive capability of the supply chain to prepare for unexpected events, respond to disruptions, and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function".

4. RESILIENCE WITHIN HEALTHCARE SUPPLY CHAIN CONTEXT:

Healthcare sector is characterized by many differences with the commercial sector. Uncertainty of demand makes procurement decisions very complex. (Beaulieu 2001) Delays are intolerable in the healthcare supply chain, in this case the loss is human life. Pandemics make the threat (sheffi, 2005) indicat five characteristics of supply chain resilience: increasing redundancy in the supply chain, flexibility, changing corporate culture. There are researchers that tend to analyze strategies for building more resilient supply chains. (CHRISTOPHER S. TANG, 2014) present some supply chain robust mitigation strategies we will cite some that can suit healthcare supply chain as:

- Postponement: this strategy enables modifying the design of internal process design production to respond effectively to disruption. While losing control over operations, changing usual practices is useful to meet demand increase.
- Strategic stock: keeping strategic stock of medical supplies in strategic location can be a good approach to anticipate pandemic disruption
- Flexible supply base: the capability of shifting suppliers is useful in the case of stock-out of products.

4.1. Supply chain resilience enablers

A lot of authors treated supply chain resilience ebanlers (Pavel WICHER, et al. 2012) (Martin Christopher and Helen Peck, 2004) the main factors found in literature are summarized as follows:

- **Visibility:** one of the most important aspects that affect supply chain management actors is visibility of the situation and operations changing. Having a clear insight on what is going to help to anticipate crisis events.
- **Agility:** establishing a strategic plan for responding effectively to disruption events. It Is crucial to organizations to always be prepared to overcome environmental challenges.
- **Collaboration:** supply chain management is constructed of units and organs similar to the human all parts success is related to one another. Cooperation is beneficial between these supply chain partners.

Sharing information about inventory demand forecasts can serve the stakeholders to achieve more efficient and effective performance. Especially during a crisis , collaboration will alleviate the pressure on the whole chain.

- **Communication and Information sharing:** without information sharing no supply chain exists. Information flows maintain the normañlity of operation in optimañl conditions. Which implies more to healthcare context. Having the accurate information status leads to optimally serving the patient care service.
- **Supply chain design and reengineering:** Certainly the design of processes and participants in a supply chain clarifies the overall performance and also will define how resilient it will be. Supply chain can include a multivariate process of purchasing production distribution operations, linked by actors. Having a fluent structure that fits the demand needs simultaneously is evident.
- **Human resources:** building strong human resource relationships is without any doubt a key factor for flexible response during pandemics. Medical staff are the actors capable of taking decisions and acting optimally to situations.

5. COVID19 IMPACT ON HEALTHCARE SUPPLY CHAIN ON HEALTHCARE SUPPLY CHAIN

The propagation of a pandemic is a complex phenomena that has no ultimate solution. Uncertainty and unpredictability of patient flow and number of contagious people make it difficult to predict and to control the logistics activities. However, efforts to be more responsive to variability can be held to be more resilient against pandemics. The divergent nature of the healthcare supply chain, the interaction of flows of physical medical items and information flows is also a call of the need to be more complicated for handling the crisis outbreak. The supply chain process of healthcare is divided into internal supply chain and external supply chain. After our field investigation it is obvious that procurement is the most affected activity in the hospital supply chain, having a sufficient amount of medical items such as drugs and PPE equipment is the most critical aspect to be aware of in a pandemic. The covid19 pandemic also changed procurement strategies and patient flow path flow since and neglected other services in the hospital. Human resources as medical staff was severely affected, overloaded with hours more than their usual capacity. Furthermore the contagious nature of covid19 changed the restoration process inside the hospital since there is a high risk of infection and the meals are delivered by a specialized staff.

6. STRATEGIES AND BEHAVIOR OBSERVED IN COVID19 CRISIS PROPAGATION

The director of Morrocan hospital assured us that the procurement system of items needed as ventilators icu beds and masks to support the emerging cases of covid19. Shortages occurred during the pandemic propagation. However the ressources sharing between hospitals for different provinces was a measure adopted to handle the crisis. “The majority of healthcare actors want the covid19 to pursue “ a statement of a healthcare responsible interviewed that explains many things how the covid19 pandemic changed the ways of the functioning of the healthcare system. The crisis made actors see the importance of coordination between healthcare actors which will enhance the healthcare supply chain. Increasing the healthcare infrastructure, reviewing the inventory policies were significant outcomes of facing covid19 pandemic. Voluntary, social community action and associations were also a part of aiding the healthcare system during the crisis thus asking to what degree the healthcare supply can be independent during a pandemic propagation.

7. ISSUES RESTRICTING RESILIENCE OF THE HEALTHCARE SUPPLY CHAIN IN THE MOROCCAN CONTEXT

It's obvious that the organizational, administrative structure of the Moroccan healthcare system has to be revised. The complexity of administrative procedures in which we can call bureaucrats make the information circulation low " to further explain the situation in case of shortage the hospital administration must send an invoice to the regional delegation and be approved before delivering it to the central procurement division of the healthcare ministry that makes delays in drug delivery. Another point noticed is the weak control of operations and non respect of rules can generate wastes and deficiencies of optimal performance. Human resources qualification is a major point that has to be looked at. In addition to this medical staff work condition, availability is a factor of good patient service level during a pandemic.

8. LESSONS LEARNED

The Covid19 pandemic was a real challenge for the global community including Morocco, it was the first time that health systems were faced with such an event. It is now essential for setting up a typical epidemic crisis plan to deal with future epidemics. It is crucial to evaluate the results of this pandemic. The health sector, government and logisticians are keen to coordinate with the aim of developing new approaches because we are not immune to future pandemics. There is more emphasis given in recent years by the research community to develop optimization solutions for disease outbreaks based on operations research techniques for cost/time minimization, location of facilities, plans vaccination, storage (Mohammad Rezaei-Malek et al, 2016) (M. Beamon et al*, 2008) (BURCU BALCIK et al, 2008) (ROBERT CONN et al, 2007) (Radboud J. Duintjer Tebbens et al, 2010). Coordination is also a major aspect that actors should be aware of. This allows information sharing and synchronization of operations regarding production and inventory planning. (Lijo John, 2012) (R. Glenn Richey Jr, 2009) Supply chain coordination mechanisms techniques can be used in inventory management of: continuous replenishment centralization of:

- Warehousing and transport: standardization of methods and under -contracting with third-party logistics providers (3PL)
- Information systems: the use of information systems is crucial for optimal coordination, particularly between suppliers and buyers (EDI, ERP, systems). Thereby improving the accuracy of information flows and optimizing operational performance by reducing delays and waste.
- Government strategies: Establishing a national crisis management plan can be effective in preventing and minimizing the impact of future outbreaks. We suggest a certain number of actions which can be implemented by the government classified in three parts: managerial, scientific and legal

9. CONCLUSION

We have tried through the elaboration of this article to shed light on humanitarian supply chain management which is a recent topic that requires further research. The axes of our work are based on the presentation of the concepts of the humanitarian supply chain, the analysis of the Moroccan response against the covid19 pandemic and the suggestion of recommendations to be taken by the stakeholders to minimize future pandemics. However, there are huge gaps in this area and we urge the research community to place more emphasis on this topic. The covid19 epidemic has been a real lesson for us that we are not immune to potential diseases. The transformation of lifestyles, globalization and demographic growth lead us to reconsider our ability to cope with such events. Therefore, the scientific community must stimulate research in areas related to the humanitarian supply chain, the hospital supply chain against pandemics.

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THE ROLE OF DIGITALIZATION IN MANAGING POST-COVID RECOVERY: CASE OF MINISTRY OF FOREIGN AFFAIRS OF MOROCCO

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ABSTRACT
The Covid-19 pandemic strike overturned the international relations to create a new global order with a common enemy, the coronavirus. However, at the organizational level, it constitutes a call for change of entrepreneurial and managerial practices. Certainly, the current crisis impact vary from one business to another according to several factors such as the size and the structure. In result, rapid advances in technology and digitalization driven by health crisis has become a core part of new organizational approaches. Henceforth the external environment has become more uncertain. In addition, conspicuously, faced with these market conditions, entrepreneurs are required to take decisions. These changes are for specific entrepreneurs a development and innovation opportunities, and for other, new challenges to increase with well define, new and complex goals that can be identified as stretch goals.
Keywords: *Covid-19, Digitalization, Management control, performance, Stretch goals*

1. INTRODUCTION

The Covid-19 pandemic strike overturned the international relations to create a new global order with a common enemy, the coronavirus. However, at the organizational level, it constitutes a call for change of entrepreneurial and managerial practices. Certainly, the current crisis impact vary from one business to another according to several factors such as the size and the structure. In result, rapid advances in technology and digitalization driven by health crisis has become a core part of new organizational approaches. Henceforth the external environment has become more uncertain. In addition, conspicuously, faced with these market conditions, entrepreneurs are required to take decisions. These changes are for specific entrepreneurs a development and innovation opportunities, and for other, new challenges to increase with well define, new and complex goals that can be identified as stretch goals. This study highlights the post-covid organizational context, opens up a field of reflection for performance management, and punctuates the place of management control in public administrations in Morocco. The first step of this study consist in a review of new articles, in order to identify factors potentially associated with the motivation to fix stretch goals and digital development. The second step of our script aim to analyze public administration in health crisis era, especially with the fixing of the new Moroccan finance law. Manifestly, a qualitative study based on a semi-structured interview made within the Ministry of foreign affairs of the Kingdom of Morocco, as well as case studies focusing on the decisions taken by different actors during and after the period of health crisis. In result of these turbulences, the digital acceleration and digitalization induced by the health crisis have become at the heart of new organizational strategies. At the same time, the setting of stretch goals by constraint has become one of the main entrepreneurial initiatives, in need.

In parallel, the most use of digitalization allow adaptation to a post-covid universe without having to set stretch goals.

2. ENTREPRENEURSHIP IN COVID 19 PANDEMIC ERA

The brutal shock of the coronavirus generating measures to stop the activity induced the world economy in a serious recession. The world economic activity had contracted by 3.405% in 2020 in contrast to the year 2019 where the GDP growth was +2.56%, which immediately caused shocks for organizations. The measures taken by the states to curb the spread of the virus actively participated in this socio-economic pressure. Each country had deployed initiatives to achieve the revival of its activity, but the strength of the intervention of each State depends considerably on its capacity to support the private sector, its access to medical aid and obviously on its resources and geopolitical conditions. Globally, the sectors most affected by the health crisis are mainly the tourism and trade sector. Other sectors are also involved by the effect of the pandemic. According to data from the June 2020 Conjuncture Note (Ministry of Economy, Finance and Administrative Reform, Morocco), the world GDP growth recorded in 2020 is negative, compared to the positive percentages recorded in 2019 (Figure 1: Evolution of GDP between 2019 and 2021). These results are explained by the consequences of the pandemic on daily life.

3. MANAGEMENT CONTROL AND DIGITALIZATION TRANSFORMATION

Distancing has inevitably forced companies to rethink their management methods in record time, particularly in terms of organization and technology, mainly during periods of confinement. According to studies based on the contingency theory, management control is influenced by several factors including the environment (Bennani et al., 2021). Environmental variables, particularly uncertainty and external turbulence, remain factors triggering the need for evolution and adaptation of the organization as a whole, and of management control in particular. At the same time, instantly updated information plays a vital role in countering the unpredictable effects of the external environment. Moreover, the traditional methods and tools of management control are called into question in such circumstances since they could only have a stable vision limited to the financial field and not creative based on historical observations, which makes the reports produced by the management control entity of little relevance in such an environment (Olfa, 2006). According to the observation of Benazzou (2021), it is in these moments of uncertainty and multi-sector upheaval that the management control function gained momentum and was mainly called upon with support from its traditional role. In particular the contribution to the definition of the strategy, the monitoring of its implementation, the measurement of performance, the management and the supply of essential information to the various departments of the organization, particularly the financial department. The advantages accompanying digitalization are reflected in the following four points (Benazzou, 2021):

- Fluid flow of information;
- Dematerialization of content allowing easy sharing with the departments concerned;
- Optimization of working and availability time;
- Better management of the risk of error and ease of monitoring.

4. STRETCH GOALS

The decisions taken by governments to counter the spread of the virus have pushed companies to resort to miracle solutions to save their grip on the market. From a management point of view, urgent management tools had to be put in place to ensure the continuity of the management control function, even remotely.

For some authors, it was a question of moving squarely towards social management, what they call social entrepreneurship (Carrey and Landier, 2021).

4.1. Definition

By definition, a stretch goal is "an objective set by a project leader beyond the threshold that he initially wishes to achieve. If the stretch goal is exceeded, the additional funds collected will allow, for example, developing the project and/or offering rewards to contributors. In a dynamic of gamification, stretch goals punctuate and animate a campaign. Even if the benefits seem significant, stretch goals can be risky: this is particularly the case if the project leader does not measure the financial and logistical implications. Managing them can also be just as complex as it is time-consuming. » (Renault, 2020). According to the study by Sim B. et al. (2011), a goal can only be qualified as extended when it meets the following two criteria:

- Criterion 1: Extremely difficult
  This condition involves drastic expectations with goals that are very difficult, if not impossible, to achieve without considerable effort and in-depth study. The objective in question goes beyond the usual methods and surpasses current capabilities. In other words, a stretch goal isn't so dramatic as to be called impossible, but it should at least be plausibly so at first glance.
- Criterion 2: Extremely new
  This condition requires the use of new methods while radically breaking the routine, with a need for learning and training for employees. In principle, there is no model for the completion of the stretch goal at the time of its fixing.

4.2. Illustrative example

Many examples testify to the effectiveness of a stretch goal in times of crisis, as Toyota case (Takeuchi et al., 2008), which is a concrete example of the use of a stretch goal. The idea was that targets around metrics such as profit, market share and share price would be set so high that achieving them - and even attempting them - would inspire unprecedented innovation that would not only drive performance in the short term, but would transform the company. Concretely, Toyota gave its engineers a year to create a vehicle that increases fuel efficiency by 100%. The team tried 80 hybrid technologies before narrowing down the list and creating the now highly successful Prius Hybrid.

5. CASE STUDY AND ANALYSIS

The Covid-19 pandemic has exposed the failing points of each organization. Seen from this angle, this crisis has allowed these entities to realize their weaknesses and to surpass themselves. As mentioned above, entrepreneurial challenges lead some companies to use stretch goals to deal with them. The research question set:What is the role of digitalization in managing post-covid recovery? However, we formulated the two hypotheses below.

- **H 1:** The complexity of the external environment pushes organizations to resort to stretch goals.
- **H 2:** digitalization in general facilitates adaptation to a post-covid world.

5.1. Case study

In order to highlight the impact and complexity of the external environment, two examples of real cases will be displayed and analyzed to explain the use of stretch goals and digital transformations which have become central to the management of the health crisis. Thus, it will be demonstrated and highlighted the importance of digital transformation in the crisis management process and in the change management strategy.

5.1.1. Case 1: CSCES: Construction of Huoshenshan and Leishenshan hospitals in China

In February 2020, China is building two hospitals in Wuhan, the first Huoshenshan Hospital, housing 1000 patients, was built in 10 days, and the Leishenshan Hospital in 12 days. The move constitutes an emergency facility operated by the Chinese government for the treatment of coronavirus patients. Such a measure follows the rising number of cases and the saturation of hospital beds in the region. The CSCEC (China State Construction Engineering) is the company chosen for the accomplishment of such an objective, in particular thanks to its notoriety as the largest group of placement and construction in the world, thus known for its chain of robust supply and rapid construction capability, backed by its core technologies and scientific innovations. To meet this construction requirement, CSCEC has adapted its integrated technical standard for emergency hospitals, ranging from design, manufacture, and construction to operation. By translating the techniques into modular products and systematic manufacturing, the company was able to achieve rapid construction and delivery within an extremely short period. The CSCEC orchestrated a phased workflow model with standardized components, a sophisticated schedule, and systematic organization. The difficulty in this work is in both an extremely short time, and a different construction model and responding to the measures required by the health situation, thus requiring thousands of materials and equipment. Such sophisticated work required CSCEC to have a high capacity for planning, coordination and organization. In terms of digital use, the company used its CSCEC - Intelligent Construction Site digital regulation platform. The latter is based on technologies such as artificial intelligence, cloud computing and metadata enabling an absolute intelligent security system, intelligent logistics, intelligent imagery reading and operation without contact[1].

5.1.2. Case 2: IDM'Com

IDM'Com is an Orleans-based company specializing in promotional items, including stationery, panels with the name of a sponsor, screen-printing of vehicles. On March 17, the consequences of the containment measures in France pushed the company to place its employees on short-time work, increasing its turnover from €40,000 to €5,000. The manager, looking for a miracle solution, immediately thought of adapting his business to the requirements of the external environment, which was then faced with a shortage of sanitary products such as hydro-alcoholic gels and masks. This is how the company rethought its strategy by embarking on the production of microfiber masks, in order to meet the changing demands of the market in which priority is given to protection against the moving virus. To do this, IDM'Com started by requesting one of their production partner factories based in Poland, capable of producing respiratory protection masks. Following the first launch of the masks in April 2020, the company first entered the market with the exclusive sale to their professional customers, with the possibility of personalizing the masks in the color of their companies. Subsequently, on April 22, a general public site was launched for a more personalized sale. Thus, and counting 3,000 masks / day delivered, IDM'Com saw its turnover take off at €200,000 / month. This initiative has become an activity in its own right for the company, which initially wanted to save its presence in the market by facing the difficulty of a fairly sudden change to an almost unexplored market[2].

5.2. Analysis

The different cases studied above highlight the impact of the external environment, in particular the spread of the coronavirus and the related measures, on the decisions taken by organizations in different countries.

[1] **Information center** : China.org.cn

[2] **Le parisien quotidien** : https://www.leparisien.fr/economie/coronavirus-la-vente-de-masques-multiplie-par-5-le-chiffre-d-affaires-de-leur-entreprise-11-05-2020-8314560.php

To better analyze the relationship between the external environment, the use of stretch goals and digital support, we have drawn up a typical table of the two cases studied (Table 1 below).

Table 1: Typical table of the two cases studied

Company case	Challenges/twists and turns	Target set	Features Stretch	Results
CSCES	- Saturation of hospital beds in the face of the rise in cases of contamination	- Emergency facility of hospitals for the treatment of coronavirus patients	-Modification of the technical standard of the company for adaptation -Convoluted calendar -Different construction model -High capacity for planning, coordination and organization	-Construction of Huoshenshan Hospital in 10 days -Construction of Leishenshan Hospital in 12 days
IDM'Com	- Sanitary measures and containment in France - Need to adapt to the rules of distancing -Partial unemployment of employees	-Adaptation to the requirements of the external environment with production of microfiber masks	-Radical change in production strategy -New targets and sales methods - Difficulty of realization following the partial unemployment of employees - Difficult initial situation (i.e. a decrease in turnover from €40,000 to €5,000)	-Overwhelming positive evolution of the company's turnover -Sale of the new product becoming an activity in its own right of the company

The coronavirus pandemic has practically changed the way different organizations work. The consequences are quite noticeable. In these difficult times, adaptation plays an essential role for the survival of the different entities, regardless of their nature of work. The table drawn up above highlights the difficulties and challenges related to the external environment of the different cases studied, then displays the stretch objectives set by the managers for the survival of their businesses, and finally the results. The objective of drawing up the table above is to provide an answer to our research question while relying on the two fixed hypotheses. As a result, the logic of our case studies, through which the consequences of the environment conditions push to look for miracle solutions. In addition, it highlights, firstly, the need for setting new different and very difficult objectives, and, secondly, the crucial place of digital support in adapting to the health measures.

6. CASE MINISTRY OF FOREIGN AFFAIRS OF THE KINGDOM OF MOROCCO

6.1. Methodological and epistemological positioning

The second step of our script aims to analyze public administration in health crisis era, especially with the fixing of the new Moroccan finance law. Manifestly, a qualitative study based on a semi-structured interview made within the Ministry of foreign affairs of the Kingdom of Morocco, as well as case studies focusing on the decisions taken by different actors during and after the period of health crisis. The Ministry of Foreign Affairs of the Kingdom of Morocco is a public body with a head office in Rabat. Created by Dahir n°1-56-097 of Ramadan 14, 1375 (April 26, 1956), four months after the formation of the government of M'barek Bekkay, Prime Minister of the Kingdom of Morocco. The objective of our study is to improve our understanding of the link that could exist between digitalization and the use of stretch goals, in a post covid context.

At the methodological level, our research was based on the case study. The option for the case study as a way of accessing reality stems from the problem studied and the constraints associated with it. The concept of stretch goal being limited, it was advisable not to embark on quantitative research, especially since there was no a priori methodology, but to have recourse to in-depth surveys with a case and therefore favor qualitative analysis. Our choice fell on an interpretivist position. Insofar as the digitization of the management control function, and the use of information systems is based above all on the obligations and the damage caused by the crisis of the covid 19 pandemic. The qualitative/interpretative approach seemed to us the better adapted to the study of the interactions that there could be between digitalization, stretch goal and management control, where the contextual variable is fundamental. This approach is not intended to test a theory and verify hypotheses, but to give meaning to the facts in order to construct an interpretation from the observed data. Generalization is not the goal. However, an explanatory diagram may be proposed and a formulation of hypotheses may be suggested. It is in this perspective that our work takes place. Our study is therefore part of the trend of concrete research of an empirical type that can be described as "exploratory" insofar as there is, to our knowledge, no previous research interested in both digitalization, to the use of stretch goals, and management control, nor therefore to the interactions that there could be between these two cases, and there was no a priori methodology. We chose the Ministry of Foreign Affairs as a field of study to diversify our sources, and complete the previous case studies. Data collection was carried out using a semi-directive interview with a management controller from the Ministry, with an interview guide composed of 4 respective parts, to first deal with the management control function within the Ministry. The impact of the covid 19 crisis. The role of digitalization during and after the crisis. Finally the management of the recovery using digitalization.

6.2. Thematic analysis

In order to analyze the content of the interview, we opted for thematic analysis using Nvivo software. To this end, we first launched a query of the words most used by the management controller during the interview (Figure 1).

Figure 1: Word cloud - Nvivo[3]

The words most used and supported by the respondent are listed as above. In connection with our research topic and analysis, the designated codes constitute the following: Performance; management control; Digitization; stretch and covid. Each keyword constitutes an imperative research element within the framework of this analysis.

[3]Textual analysis result – NVivo software

Figure 2: Matrix Crossing – Performance Theme

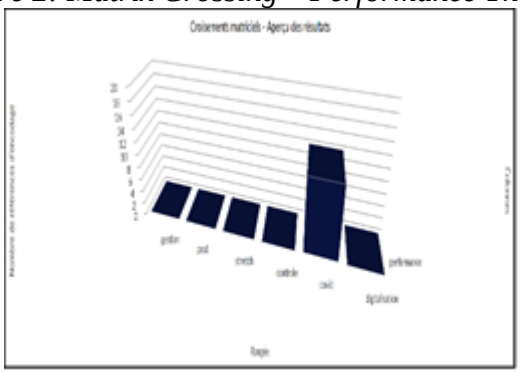


Figure 3: Digitalization Theme

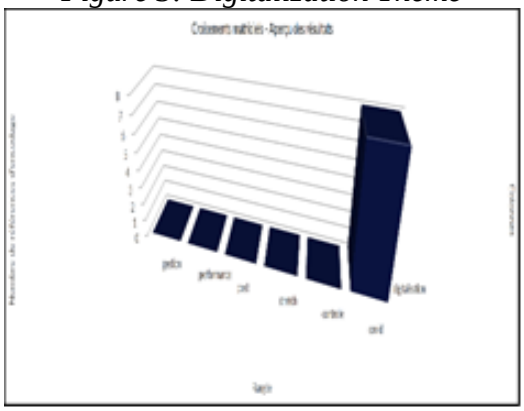
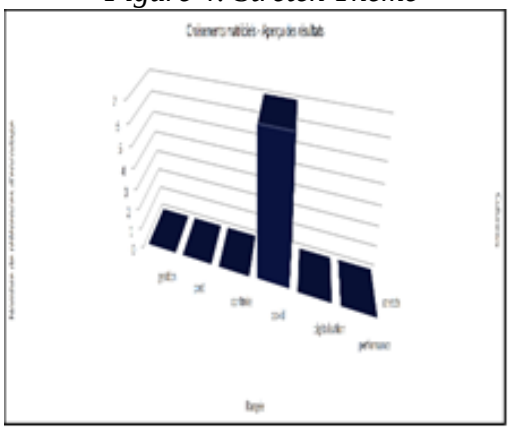


Figure 4: Stretch Theme



According to the contextual crossing matrix above (Figure 2), we find that there is a direct link between the notion of performance and the term covid. Indeed, according to the interviewee, the management control service provides a link between the top of the hierarchy upstream and decision-making downstream. In the public sector, performance management is particularly established in relation to the quality of service provided to citizens or the efficiency of expenditure. With an effort to optimize the use of resources, without there being a loss without reason. This is the spirit of performance in the public sector. However, in times of health crisis, rigorous performance monitoring has become crucial. In post covid, several changes have taken place, mainly in terms of working methods. Now it is necessary to perform performance monitoring very often. While learning from the experience accumulated at the time of the advent of the health crisis. According to the contextual crossing matrix above (Figure 3), we find that there is a direct link between digitalization and me covid.

According to the interviewee, covid 19 has favored the use of digitization. Especially since the post-covid world based on the experience learned, will be focused on the use of digitalization at all levels to deal with any unforeseen events. According to the contextual crossover matrix above (Figure 4), we find that there is a direct link between the notion of Stretch goal and covid. The use of stretch goals could be inevitable in the event of poor performance management. Based on the three graphs displayed above, the covid theme is the key link grouping the three bases of our research, namely performance, digitalization and stretch goals.

6.3. Overview of the field and result of the semi-structured interview

The interview was carried out in a post covid research framework, with a direct confrontation with the per covid-19 situation. The person questioned was able to tell us about the operational framework during the pandemic, and then afterwards. During the pandemic, the Ministry of Foreign Affairs in general, and the Department of Financial Affairs in particular, was able to demonstrate rapid and effective adaptation thanks to the degree of digitalization that the organization demonstrated. The interview guide included questions relating to the two situations with a zoom on the role of digitization and then the digitization of management control, in particular in managing performance in a context of health crisis. Then the criteria that lead to the use of Stretch goals. To finally come to a link between the degree of use of stretch goals and digitalization. Initially, the Ministry of Foreign Affairs, given its status, by its political attributions, is focused on performance in terms of services provided to Moroccans residing abroad as well as to foreigners residing in Morocco, with compliance with the principle of reciprocity of the convention of Vienna[4]. Thus, the concept of performance is based on the quality of the service provided to citizens or by taking into account the efficiency of expenditure. The budget allocated to the Department of Foreign Affairs must have an impact, direct or indirect, on the citizen. With an effort to optimize the use of resources, without it being a waste without reason. This is the spirit of performance in the public sector. In terms of digitization, the nature of the work within the Ministry obliges the parent organization as well as the subsidiaries abroad, in particular the Embassies, the consulates as well as the diplomatic missions, to equip themselves with sophisticated work tools, advanced and remote working technologies and methods. Indeed, the need for continuous communication, the reliability of data, their efficiency and effectiveness, implies appropriate and efficient tools and information systems with daily management and analysis of information flows. This type of work, which the Ministry of Foreign Affairs joins, facilitated rapid adaptation to the health context. On the other hand, the use of stretch goals was not necessary during the pandemic and even in the future, thanks to the advanced level of digitalization within the Ministry. Such a tripartite relationship (digitalization, performance and stretch goals) can be explained by the following temporal order scheme (Figure 5):

Figure 5: Tripartite relationship (digitalization, performance, stretch goals)

Thus, we note through the case of the Ministry of Foreign Affairs that the increased use of digitalization improves performance, which prevents the use of stretch goals.

[4] Vienna Convention of April 24, 1963, https://treaties.un.org/

7. RESULTS

As a result, the various case studies demonstrate the key role played by digital transformation in supporting change. The choice and recourse to the adopted stretch goals result from the requirements of the external environment, which leave little room for hesitation or intuition. Indeed, periods of crisis, and particularly that of Covid-19, place companies in delicate situations where making the right decision becomes a decisive element for the survival of the entity. Among these decision-making initiatives, the definition of stretch goals. However, a well-equipped organization, better prepared for the various environmental changes, will be able to do well without having to set difficult objectives in order to survive. Defining a stretch goal is a major element of change within the company, for managers, employees and, practically, the management controller. The latter is obliged to adapt these working methods to follow the developments and changes due to the health environment. However, the entity in charge of management control could take advantage of the various turbulences caused by the pandemic to improve and innovate. To this end and while being aware of the place occupied by information in an unstable external environment, access to reliable, precise, detailed and relevant data is undeniably essential. To this end, this need for digital change must be taken positively insofar as the integration of new adapted management software would be able to generate the relevant indicators for managing performance under the best conditions, and therefore contribute to the achievement of objectives, including stretch goals. But still, a good information system will automate and facilitate the administrative process, while saving time. As for management control systems, they should interactively encourage the various actors to work cooperatively to promote innovation and decision analysis in order to counter strategic uncertainties. In this context, the management controller will have to play a role of clarifying and accompanying change to facilitate the adaptation of the company to the increased complexity of its external environment. On the other hand, it is necessary to pay great attention to the human capital of a company, namely the level of skills, training and knowledge management. According to a study carried out in Nigeria, training and development activities have a positive effect on the performance of Nigerien organizations (Abodohoui et al. 2020). It is also necessary to pay increased attention to employees to engrave a positive trace in their minds, which will allow them to voluntarily participate in the achievement of the company's objectives, even within the framework of a stretch goal. In the case of societies where power is concentrated mainly at the top in which only the entrepreneur can induce change and make adjustments at the organizational level, it will be better to take China as an example. Indeed, according to the case study of Abodohoui et al. (2020), in China employees value learning by doing or trial and error, moreover, public enterprises in this Asian country use modern evaluation measures as effective tools to improve efficiency and productivity .

8. CONCLUSION

The COVID-19 pandemic has demonstrated how utterly inadequate state rivalry is to counter the spread and care for people in an interdependent global economy. The situation of poor countries left to their own devices becomes even more dramatic and the chaotic situations that should follow will make it more complex to control the pandemic. (Defraigne, 2020). Today's world is not limited to circumstances due to the coronavirus health crisis. From now on, the environment characterized by the socio-economic world is described as multidimensional, with a multitude of challenges and opportunities:

- The increase in regional and continental trading areas ;
- The state of international relations and the geopolitical world ;
- The social and ecological field of concern thus a place as important as the financial and economic field ;
- The evolution of tax rules ;

- The complex and uncertain nature of globalization and the open economy
- Technological development and increased digitization which completely changes traditional working methods.
- Political instability in some countries.

The lingering effects of old crises, including the banking and financial crisis of autumn 2008. Companies have to apply themselves under pressure and in an uncertain world, where any decision taken is not without risk. Inevitably, the world continues to become more complex, and taking into account the various socio-economic, geopolitical, ecological, health and other developments, companies would be obliged to react and sometimes, in need, to set very ambitious objectives –Stretch. The consequences of the current health environment prompts the setting of stretch goals to remain functional, and consequently induces management controllers to adapt, or even completely change, their working methods in order to support their role of monitoring and assistance. to the decision. From now on it is not an optional option, management control must be adaptable and scalable in the face of an uncertain environment. Also, if the management control is limited only to a vision centered on the short term, for example profit and costs. The current environmental factor imperatively requires management control intervention based on the medium and long term, including innovation, competitiveness and resistance. This article is limited to the health crisis experienced by the world today. However, it would be very beneficial to study the best management practices to apply, especially in a world limited by uncertainty and leaving no choice but to resort to setting stretch goals. Finally, if for some companies the health crisis is a destabilizing wall against development, for others it is rather a booster of strategic and organizational change, and a source of motivation to take up new challenges and innovate "The crisis has been the catalyst of transformation for a good number of Moroccan organizations whatever their size and their sector of activity. Businesses are now better prepared to deal with market risks and uncertainty." (Reda Loumany, patron de PwC in Morocco)[5].

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HOW DOES INTER ORGANISATIONAL KNOWLEDGE SHARING CHALLENGE THE MODERN WORLD AND IMPACT POSITIVELY THE OUTCOME OF LOGISTICAL PROCESSES

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ABSTRACT
Nowadays, oorganizations concentrate their effortS on the continuity of their life chain by looking more than ever for innovation opportunities beyond their organizational boundaries, therefore an inter organizational cooperation is required to be established strategically. A sphere of knowledge sharing organizations where knowledge can be created shared and integrated, is called on to make the collaboration operational. However, with the modern world, many barriers to this sharing process should be overcame, in order to enforce the inter organizational relationship in the supply Chain. In this paper, we're going to spot different techniques used as a support for inter- organizational knowledge sharing, and reveal their possible advantages and disadvantages of their use, as conducted in previous studies.
Keywords: *Knowledge Sharing, Knowledge Development, Inter-Organizational Innovation, Innovation*

1. INTRODUCTION

Exact exploration over essentially the most recent 20 years shows that a firm may altogether work on its insight and imaginative capacities by utilizing the abilities of others through the exchange of knowledge both intra and inter firms. Be that as it may, the relationship of knowledge sharing is a complicated peculiarity and by and by, effective exchange is frequently difficult to accomplish. In any event, for the moderately straightforward instance of knowledge sharing starting with one unit then onto the next inside a similar firm, there are various variables that might influence the adequacy and the result of the transfer (Szulanski, 1996). Knowledge sharing between organizations brings greater intricacy due to the diverse idea of the limits, societies, and cycles included. It is hence an intriguing space for additional hypothetical examination. This article answers both hypothetical plans and functional worries, including the rising necessity of organizations to oversee cycles of between inter-organizational knowledge transfer, and the developing proof that authoritative educational experiences and knowledge can act as an upper hand to a firm. Firms presently need to oversee numerous connections both inside and across public lines. They can at the same time be accomplices, contenders, providers and clients for one another, and this raises many issues including the issues of 'spillage', the elements of learning races, and the knowledge properties of organizations. There is an expansive supposition that expanded knowledge sharing adds to an association's exhibition and additionally ingenuity, and that assuming firms comprehend the knowledge transfer process and the factors that influence it, the association's capacities can be improved. The question always is about whether knowledge transfer between units within an organization is as

important as the inter organizational transfer. Our response was that intra-organizational transfer was optional, but that inter-organizational was essential. These two processes involve different kinds of boundaries, each with distinct problems. However, as demonstrated by Holmqvist (2004), there are also interactions between inter- and intra-organizational learning, and boundaries play an important role both in distinguishing between inter- and intra-organizational processes, and in framing the transfer process itself. This introductory article is organized as follows. In the next section, we present a framework for understanding inter-organizational knowledge sharing. Then we try to oversee the question of how does inter organisational knowledge sharing challenge the modern world and impact positively the outcome of logistical processes treated in literature. finally we discuss t the challenges of knowledge sharing in inter-organizational relationships, and to conclude we spot the promising topics for future research into knowledge sharing.

2. A FRAMEWORK FOR INTER-ORGANIZATIONAL KNOWLEDGE SHARING

In his fundamental article, Grant (1996) recognizes the qualities of the donor firm and the recipient firm, the characteristics of the knowledge, and the knowledge sharing relationship process itself as integral to creating learning capacities which lead to the competitive advantage of firms. This is like the reasoning of Argote et al. (2003), who recognize properties of knowledge, properties of units, and the connections between units as focal components for planning the knowledge management context. In this part we expound on these two models to give a beginning stage to planning both ebb and flow and future exploration on between hierarchical knowledge transfer. The framework displayed in Figure 1 depends on the case of dyadic knowledge transfer. It includes four arrangements of elements: the ressources and capabilities of both the benefactor and beneficiary firms, the idea of knowledge that is being exchanged, and inter-organizational dynamics.

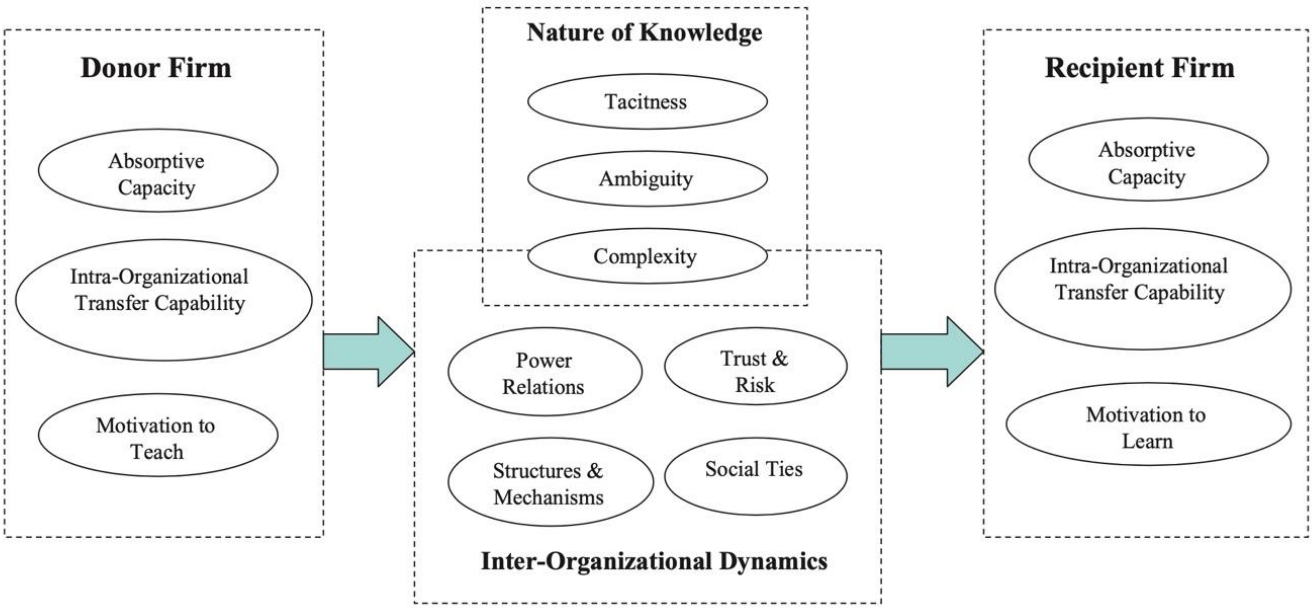

Figure 1: Factors influencing inter-organizational knowledge transfer

First, we consider the characteristics of the donor and the recipient. There is a level of evenness between the two for two reasons: first, as indicated above, knowledge sharing might occur in the two bearings as roles and relationships change through unions and client/provider organizations; and second, the best teachers are many times the best learners.

A vital calculate the two cases is absorptive limit, which is the capacity to perceive the worth of new knowledge and to acclimatize and utilize that knowledge (Cohen and Levinthal, 1990). The beneficiary firm's absorptive limit is thusly affected by its past experiences, culture, and knowledge retention capacities (Lane and Lubatkin, 1998). When knowledge comes into an organization from some outer source, the beneficiary necessities to depend on its capacity for intra-organizational knowledge transfer to diffuse the knowledge inside the organization so it tends to be acclimatized and used. Szulanski's (1996) study has demonstrated the way that this cycle can be troublesome and ought not be underestimated. Simultaneously the contributor needs absorptive ability to see the value in the expected worth of knowledge for passing to the beneficiary, and necessities intra-organizational exchange capacity assuming the data is to be made accessible to the beneficiary in a productive way. Absorptive limit and intra-organizational exchange capacity are interrelated as in an association which is good at engrossing outside knowledge ought to likewise be exceptional for diffusing the knowledge inside its own limit. In addition, the recipient needs to be motivated to gain knowledge, and the donor must have something worthwhile to offer. While it has been established that the recipient's intent to learn is a key determinant of the extent of knowledge transfer (Hamel, 1991), the donor's motivation to teach can be an equally important factor (Ko et al., 2005). In fact, the two may affect each other; for example, the lack of motivation to teach may dampen the enthusiasm for learning, and vice versa. To sum up, and by definition, inter-organizational knowledge sharing relationship involves at least two organizations, and we therefore need to understand the interactive dynamics between these organizations. We have identified four broad factors here: power relations, trust and risk, structures and mechanisms, and social ties. The donor and the recipient are often in a situation of power asymmetry, with the former being in a more superior position. The pace of knowledge acquisition by the recipient is a key factor affecting its bargaining power relative to the donor, as learning shifts the dependency relation. When the recipient finds that there is little further that it can learn from the donor, the basis for cooperation may deteriorate. Kale and Anand's (2006) study of international joint ventures in India indicates that once a foreign partner has acquired local knowledge, unless the knowledge comes into an organization from some external source, the recipient needs to rely on its ability for intra-organizational knowledge transfer to diffuse the knowledge within the organization so that it can be assimilated and utilized. Szulanski's (1996) study has shown that this process can be difficult and should not be taken for granted. At the same time the donor needs absorptive capacity to appreciate the potential value of knowledge for passing to the recipient, and needs intra-organizational transfer capability if the knowledge is to be made available to the recipient in an efficient manner. Absorptive capacity and intra-organizational transfer capability are interrelated in the sense that an organization which is good at absorbing external knowledge should also be well equipped for diffusing the knowledge within its own boundary. In addition, the recipient needs to be motivated to gain knowledge, and the donor must have something worthwhile to offer. While it has been established that the recipient's intent to learn is a key determinant of the extent of knowledge transfer (Hamel, 1991), the donor's motivation to teach can be an equally important factor (Ko et al., 2005). In fact, the two may affect each other; for example, the lack of motivation to teach may dampen the enthusiasm for learning, and vice versa. The donor often perceives a risk of unintended transfer of knowledge that leads to the erosion of its competitive advantage (Norman, 2002). While this risk is real, the recipient may face a risk that the knowledge that it receives is not useful or not of a high quality. Thus source credibility is considered a relevant factor (Ko et al., 2005), and is associated with the issue of inter-organizational trust. Trust facilitates knowledge transfer by creating a sense of security that the knowledge in question will not be exploited beyond what is initially intended (Dhanaraj et al., 2004).

3. HOW DOES INTER ORGANISATIONAL KNOWLEDGE SHARING CHALLENGE THE MODERN WORLD AND IMPACT POSITIVELY THE OUTCOME OF LOGISTICAL PROCESSES

Before talking about the impact of the inter organizational knowledge sharing on the outcome of logistical processes, in the modern world, a brief talk about the loss of knowledge acquisitions is imposed as a must, especially that hardly any organizations have executed deliberate procedures for knowledge loss misfortune (Winkelen and McDermott, 2008). All things being equal, most firms depend on a couple of specially appointed and responsive methodologies. For instance, HR improvement for profoundly portable expert knowledge orkers for the most part assist with expanding position fulfillment and decrease turnover, while assimilation programs assist passage level representatives to rapidly conform to authoritative objectives and convictions (Yeh, 2007). Moreover, post employment surveys for leaving representatives normally assist with distinguishing central points of interest for new workers (Winkelen and McDermott, 2008). These sorts of knowledge retention approaches ought to limit the impacts of representative turnover. An underlying advance in holding knowledge includes distinguishing areas of basic knowledge that are in danger (De Long and Davenport, 2003). Associations can utilize profession and ability systems to screen and expect potential knowledge holes (Winkelen and McDermott, 2008); as well as embrace interpersonal organization examinations to recognize and address key knowledge weaknesses (Milton, 2008). Another methodology is to direct a study to figure out who is intending to resign and while, in this manner permitting the assessment of a position risk factor for evaluating the imperativeness of a worker (Kamph, 2007). Knowledge planning and reviewing methods likewise increment the straightforwardness of significant knowledge in an association, support the advancement of a typical setting where representatives can look for knowledge, call attention to enhancements, and distinguish individuals hindering knowledge multiplication (Hellstrom and Husted, 2004). While innovation can catch data about representatives to balance the impacts of holes in current organization data sets (Idinopulos and Kempler, 2003), documentation of significant undertakings and cycles can work with the utilization of implied knowledge (Milton, 2008). Associations likewise need to work with the course of knowledge sharing, since knowledge amassed over the long run is a significant variable advancing tasks and by and large firm execution. An assortment of HR rehearses, for example, network building and master courses create knowledge sharing conduct inside an association (Slagter, 2009). Care taken to recruit the perfect individuals add to a positive climate empowering connections that make knowledge dividing among the workers more straightforward; and remunerate frameworks can inspire representatives to participate in communication, coordinated effort, and knowledge sharing and dissemination (Droege and Hoobler, 2003). A few associations present staged retirement plans where future retired folks work on a parttime premise prior to resigning. Others enroll their retired people as advisors or even recruit them to their Board of Directors so they keep on approaching their insight, encounters, and proposals (Aiman-Smith et al., 2006). In light of a multi-contextual investigation of seven associations including a few retired folks and more than 30 knowledge maintenance projects, Levy (2011) proposed a three-stage interaction of holding knowledge. These stages basically comprise of:

1) identifying high priority knowledge to be retained;
2) transferring undocumented knowledge; and
3) integrating retained knowledge for possible re-use within the organization's business processes.

During economic downturns, organisations might diminish compensations as opposed to laying-off workers with the goal that insignificant loss of abilities and knowledge happens (Lesser and Prusak, 2001).

Assuming that an organization is compelled to go through a cutting back methodology to accomplish worked on hierarchical viability (Sitlington and Marshall, 2011), it can redistribute its labor force to keep up with knowledge on center skills regardless accomplish cost decreases. Redistribution techniques can be utilized to diminish the impacts of scaling down through particular decreases focusing on unambiguous jobs as well as offices, as opposed to seeking after equivalent rate decreases for every division (Nixon et al., 2004). While work turn programs help offer and spread knowledge and make organisations less subject to specific people (Hofer-Alfeis, 2008), they likewise bring about an accidental expansion in knowledge misfortune at the departmental level of the organisation. The HR and KM literatures emphasized the role of effective social networks in retaining knowledge and reducing knowledge loss. Organizational learning is coupled with relational linkages in social structures (Fisher and White, 2000) such that a firm's learning capacity is dependent on socially embedded relationships. Intrafirm social ties are a reason why employees remain with the company (Capelli, 2000) while loyalty to the group is often stronger than loyalty to the employer (Feldman, 2000). Trust develops (Leana and Van Buren, 1999) as this loyalty strengthens, promoting norms of reciprocity (Nahapiet and Ghoshal, 1998) which enhance knowledge sharing across the social network. Recognizing or perhaps changing the relational characteristics of a firm's social structure lessens tacit knowledge loss from employee turnover (Capelli, 2000; Marsden, 1990). As pointed in the literature review, the drivers of knowledge loss addressed in the HR, KM, and OM literatures include ineffective organizational routines and memory, as well as employee turnover due to resignations, retirement, restructuring, and layoffs. As for the knowledge retention strategies, the potential for knowledge loss should be assessed through position risk factor, social network analysis, and knowledge mapping and auditing tactics. Practices such as network building initiatives are suggested by the KM literature to increase knowledge sharing and retention, and to mitigate the impacts of knowledge loss. Meanwhile, the HR literature has emphasized the role of different HR development initiatives such as career and skill frameworks, as well as the contribution of other initiatives such as exit interviews, phased-retirements, salary reduction, and workforce reallocation in reducing the impact of knowledge loss. Overall, these different literatures emphasized different drivers of knowledge loss and different retention strategies, but lacked an integrative approach.

4. THE CHALLENGES OF KNOWLEDGE SHARING IN INTER-ORGANIZATIONAL RELATIONSHIPS

As indicated by [van Wijk, 08], knowledge sharing alludes to the interaction by which hierarchical entertainers - groups, units or associations - trade, get, and are affected by the knowledge on others. In their fundamental review [Cook, 99] propose that knowledge sharing at the group level is a strong wellspring of hierarchical development, since relational collaboration brings along the innovative re-blend of knowledge. In any case, a few researchers contend that knowledge partaking in between authoritative groups is excessively perplexing [see van Wijk, 08]. By ethicalness of their underlying design, between authoritative groups are confronted with the double test of conquering both utilitarian and hierarchical limits to knowledge sharing [Pearce, 09]. Along the useful limit, colleagues are defied with semantic hindrances, to be specific the issues of understanding raised by the multi-disciplinary nature of between authoritative work. Albeit semantic boundaries are working additionally in intra-authoritative, cross-practical settings [Carlile, 02], they are considered to accept an increased pertinence in between hierarchical settings. As a matter of fact, between authoritative groups are bound to miss the mark on shared language for deciphering, moving, and coordinating knowledge. [van Wijk, 08] have shown that knowledge equivocalness, characterized as vulnerability about the fundamental parts, sources, and interrelations of knowledge, is more inconvenient at the between , instead of intra-hierarchical level.

Thusly, this supports the idea that between hierarchical groups are supplied with less chances to figure out equivocal knowledge at last. Other than experiencing semantic obstructions to knowledge transfer, between authoritative groups are stood up to with down to earth concerns connected with the insurance of exclusive knowledge against accidental spillages to the teaming up accomplices. As a matter of fact, colleagues may unintentionally exchange away market bits of knowledge that in any case might have been a selective benefit of their parent organization. Thus, apprehension about aiding a contender might initiate shrewd ways of behaving in knowledge sharing, and sabotage the trust base of the between hierarchical group [Fong, 03]. This challenge is absent in intra-authoritative settings, where the normal hierarchical alliance empowers individuals to share knowledge with next to no assignment concerns. The authoritative contrasts and the absence of trust might be considerably more noticeable in the beginning phases of between hierarchical coordinated effort, when the group undertakings are encircled with vagueness [Huiskonen, 02]. In the progress to another relationship, colleagues don't have the foggiest idea about one another well and may look with doubt at the plan, values and convictions of the accomplice association. This might lead members to foster various understandings of similar peculiarities, and improves the probability of false impressions in knowledge sharing [Vlaar, 06]. In the following area, we propose that knowledge representation might fill in as a conductor of knowledge sharing, and empower between authoritative individuals to adapt to issues of understanding.

5. KNOWLEDGE VISUALIZATION AS A CONDUIT OF KNOWLEDGE SHARING IN INTER-ORGANIZATIONAL TEAMS

The surviving examination on knowledge perception reliably demonstrates that visual portrayals can work with knowledge partaking with regards to co-found cooperation. As per [Ewenstein, 07], visual portrayals are both specialized gadgets by which significance is conveyed, and substantial ancient rarities whose control manages the cost of the age of novel experiences. By prudence of their intelligent property, visual portrayals can function as limit objects, in this manner working with the formation of shared importance across various practices. The collaboration with visual items empowers people to sort out their insight distinctions, and gives a foundation to interpreting knowledge across limits [Carlile, 02]. As limit objects, visual portrayals ought to be especially useful in between authoritative settings, where the working together gatherings face various boundaries to knowledge sharing. Along the semantic limit, representation might furnish members with a common linguistic structure for addressing their insight, and finding out about their proportional relationships. Along the logical limit, perception can add to address the allocation worries of the teaming up accomplices, by making express the halfway point among pooled and exclusive knowledge. According to [Comi, 09a], visual facilitation may be particularly beneficial in the early stages of inter-organizational collaboration, where team members need to define interaction norms, and to concurrently develop mutual trust. Visualization may facilitate the decision to enter a strategic alliance, by enabling prospect partners to understand competence complementarities, and envision innovation opportunities. As put by an alliance manager interviewed by us: “Knowledge visualization is central in the early stages of a strategic alliance, serving not just planning purposes, but also mutual understanding and trust building”. While providing a means for sensemaking in collaborative settings, knowledge visualization is not without disadvantages [Bresciani, 09b]. In the transition stage to a strategic alliance, the persuasive effects of pictorial images may be particularly detrimental, inducing team members to overrate the value potential of the prospective collaboration. By engaging in the visual depiction of collaboration opportunities, team members may be cajoled by the image of a productive relationship, and develop excessive confidence in the alliance feasibility.

Although the current literature provides interesting insights on the advantages and drawbacks of visual facilitation, a systematic investigation of these phenomena in the inter-organizational contexts has thus far been absent. In addition, the current literature has largely left unaddressed the question of *whether the use of different media to convey visual representations bears an influence on knowledge sharing.* The knowledge visualization literature suggests that software support provides a richer medium compared to printed support, but this assumption has not yet been tested empirically. In this paper, we therefore address the question of whether, and how, the use of visual facilitation - conveyed by diverse media - bears an influence over knowledge sharing in inter-organizational teams. In doing so, we deliberately focus on the transition stage to inter-organizational collaboration, where the adoption of visual facilitation is likely to deliver the greatest effects. We hypothesize that *visual facilitation brings a positive influence on the quality of knowledge sharing* (H1), and in turn leads to *greater productivity* in inter-organizational meetings (H2). We also assume that visual-supported teams will experience *greater satisfaction* with the meeting process and outcome, compared to non-supported teams (H3). However, knowledge visualization may exert a manipulatory effect, inducing inter-organizational teams to *overrate* the value potential of the prospective collaboration (H4). We tentatively hypothesize that the above effects - positive and negative - will present greater intensity when knowledge visualization is conveyed by means of *software*, rather than *printed* support (H5). By comparing the two support conditions, we should be able to assess the added value of software-based visualization, and to appreciate the combined effect of computer interactivity and knowledge visualization.

6. CONCLUSION

As a next step in our experimental research, we plan to collect data in order to be able to test for the statistical significance of our results. Once we will have collected sufficient data, we will conduct an inferential analysis by using analysis of variance (ANOVA) in order to test for significant differences in group means. In parallel, we will use structural equation modelling (SEM) to detect mediation effects among the endogenous variables of our research model (e.g. knowledge sharing quality may mediate team effectiveness). We are also considering the possibility of applying a multilevel analysis, which would enable us to appreciate the individual level nested within the team unit. While limited in terms of external validity, the reported findings confirm the feasibility of our experiment design, and suggest that assessing the impact of visual support on inter-organizational teamwork is a promising field of research. If our hypotheses will be confirmed, the ensuing implications will be relevant for both practitioners and scholars in the field of knowledge management and alliance management. On the one hand, alliance professionals may consider including visual templates in their toolbox for alliance management. On the other hand, interested scholars may adopt complementary methods to further investigate the role played by knowledge visualization in inter-organizational collaboration. As the experimental method is carried out in an artificial setting, this research could be complemented by qualitative studies, such as the participant observation of inter-organizational meetings facilitated by visual techniques. Future research may also attempt to identify which visual are best suited for the purposes of supporting inter-organizational knowledge sharing.

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TEACHING-LEARNING MODELS IN CONTEXT OF COVID-19 PANDEMIC: THE ONLINE TEACHER AND STUDENT

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ABSTRACT

Online teacher have to understand teaching context in which there is a physical separation between students and it is mediated by the use of technologies. Teacher must recognize this change and have to work with the context potential and adapt it to the limits of their instructional approach. Thus, teachers needs to explore alternative teaching strategies contextualized in distance learning environment, which should seek to reduce interpersonal distance, promote interaction and increase feedback, ensuring communication and learning. The relationship of traditional teacher must be reconstructed to make possible the essential interactions necessary for the constitution of a favorable environment which lead to a construction of learning attitudes and behaviors. In view of the internet development in education, whether exclusively at distance or in mixed mode (classroom and online), it is increasingly necessary understand teacher's performance in virtual contexts and the establishment of skills and abilities for their training in order to guarantee that they are teaching and learning in an online education context without necessarily having to import European or North American programs that have realities and needs far from those experienced in Portugal. Evolution implies the need for change and only organizations that adapt to the environment can fully respond to the future challenges.

Keywords: *students, teaching, online, covid-19*

1. CONTEXTUALIZATION

Students and teachers in online education must be digitally literate and set on the platform chosen by the educational institution, so that they know the potential and limits of the environment that provides teaching and learning. Due to the characteristics of online teaching, variations in the number of students influence and are directly linked to the quality and quantity of work, interactions, the participation of each student in the group and the management of contacts in the online classroom. It is difficult for the teacher to develop classes with large groups, which requires the work of tutors with the same class, in a way that guarantees collaboration in debates, feedback, synthesis. Some studies show that there are several difficulties and attitudes taken by teachers in online courses. Palloff and Pratt (1999) highlight as indispensable: the size of the group, use of time online, adaptation to asynchronous communication and the construction of a learning community. The use of online time is one of the most important variables to ensure the success of online courses, so teachers must be good time managers, developing and adopting strategies and practices that optimize the system, since the nature of the online distance learning seems to be flexible in terms of time, because it can be done anytime, anywhere, making it difficult to understand and manipulate it in terms of

lesson preparation and interaction management, that a learning community requires from teacher and student. Another relevant aspect of online education is the adaptation to asynchronous communication and the complexity of messages, which consists of the difficulty of following a debate in all its phases, due to the inherent characteristics of the asynchronous way.

	Online classroom	Occupation	Interaction
Individual area	E-mail	Private message student/student, student/teacher	One to one
Collective area	Place where the class takes place: debate	Public messages; debate; collaborative learning and self-learning	Many to many
Social area	Coffee forum	Informal interaction	Many to many
Technical support area	Frequent questions, program, calendar, notes	General and specific information	One to one Many to many
Resources area	Library	Research and self-learning	Individual

Table 1: Structure of an online classroom
(Source: Adaptaded from Pallof & Pratt, 1999)

Teacher must be aware that he must be the promoter of debate for the success of an online course, he must promote also critical thinking and the student's feeling of autonomy in learning. On the other hand, he must dialogue, negotiate and collaborate in order to contribute to the development of the interaction of interpersonal relationships, creating conditions for the knowledge circulation. Teaching in higher education is characterized by the understanding that teacher develops knowledge in a selective, critical way, seeking to adapt it to the needs and realities of their students. At the same time, the teacher needs to learn to work with a new model that alone cannot develop in its complexity. In this way, it becomes essential to conceive the teacher who works at this level, as the one who not only transmits knowledge, but also produces it. An efficient and effective teacher is critical, innovative, creative and knowledgeable about tools that provide better teaching and learning, understanding and taking advantage of face-to-face practices and new practices with technological tools. Regarding the process to be carried out in the face-to-face context and in the virtual context, there are large differences and the transition from one medium to another is not easy for many teachers. Thus, in the new context of online teaching-learning, the teacher must encourage student participation, suggest group debates, virtual meeting activities, not play the role of pedagogical authoritarian so as not to interfere in the teaching-learning process, be always objective in their contributions, develop questions and activities that lead students to new experiences, ask students questions giving deadlines for them to respond, recognize students who do not participate in debates but are virtually present, encourage students to build a virtual community, praising and encouraging participation in forums.

2. TEACHER AND STUDENT ONLINE

New models of education are conceived from the different forms of communication and construction of existing knowledge. Instead of transmitting the “accumulated knowledge”, the means are made available to build knowledge through virtual communities. The more intense use of technological means of information and communication makes teaching more complex and requires the segmentation of the act of teaching into multiple tasks. Teachers functions become part of a planning and execution process divided in space and time: the functions of selecting, organizing and transmitting knowledge, exercised in face-to-face teaching, correspond to online activities, the preparation and authorship of courses and texts that

constitute the basis of the pedagogical materials presented in different media such as audio, video. The role of guiding and advising the learning process is now exercised, no longer through personal and collective classroom contacts or individual assistance, but in distance learning activities, in general, individualized, mediated through various accessible means. Added to this are the follow-up and monitoring functions of the support center and of resources and activities related to the evaluation. In addition to these functions, administration tasks, planning and organization of the process as a whole – from initial planning to the distribution of materials to the evaluation of student performance. Most of the functions are part of the daily work of the face-to-face teacher, but they are organized in an intuitive way and working with small groups of students. With the spread of sophisticated interactive technologies, teachers and students began to use tools such as the internet, which is increasingly a complete multimedia system, allowing multiple interactions, being a mean of choice for teaching/learning), email, video conferencing based audio conferencing. In this type of learning methodology, the teacher started to conceive and design teaching activities such as pedagogical resources or pedagogical e-tools and e-contents, due to the need to make the contents available in the form of didactic materials that facilitate a learning process more autonomous based on self-study, in order to use the technological resources available in the online environment. On the other hand, it is also worth mentioning the possibility of teaching synchronous interactive classes - Teams or Zoom platforms (virtual written and oral conversation rooms), and asynchronous - Moodle platform (forums, e-mail, discussion groups). In distance education, specifically in the online modality, there are several limitations inherent to working using digital and telematic support to develop the relationship between teacher and student. The relationships that are constituted in distance courses should not intend to fully repeat the richness of an interpersonal relationship in the face-to-face situation. The visualization of gestures, expressions, looks and postures as a whole are not possible to be experienced in such a complete way in computer-mediated relationships, even because it does not intend to faithfully reproduce these details of the complexity of human relationships. However, it is possible to establish significant affective bonds between teacher and students of distance courses, thus favoring the process of knowledge construction. Specifically in the teaching and learning processes, such riches inherent to the teacher-student relationship constitute an enormous baggage of resources that underpins and structures teaching and learning. That is why the substantial experience of this practice is extremely important to give new meaning to it, respecting the differences between the different contexts and going beyond the transposition of traditional education to the computer screen. Teacher must not only be knowledgeable about the course (executor of tasks) but also a builder and mediator of possibilities and relevant relationships for the construction of knowledge. The development of the teachers' monitoring work is based on various strategies of a technical-pedagogical nature, starting from their theoretical and instrumental knowledge and from their reflection processes adjusted to the educational reality. Teachers of distance courses are faced with the challenge of awakening in students the desire to belong, to share, to produce collectively, ceasing to be mere receptors to assume themselves as interactors (Machado, 2003), participating, transforming and dynamizing their process of construction of interlocution with different pairs located in the same geographic space or not. Teacher must be attentive to the class profile, carrying out an assessment in order to investigate the students' real development level (Vygotsky, 1994), that is, the knowledge they already have about the themes that make up each curricular unit, as well as the level of interaction with the technologies used in the course. These data will support pedagogical interventions, ensuring the achievement of the objectives of teachers and students, subjects of the teaching and learning process. The daily monitoring of students promotes the identification of aspects that should be taken up and discussed, thus subsidizing the reflection of teachers' pedagogical practice.

This monitoring process requires the mediation of synchronous technologies, such as chat, favoring direct communication between teacher and students, to maintain unity and cohesion with the course proposal, avoiding a disarticulation regarding the information inherent to the objectives, to the cognitive aspects, methodological and evaluative, which can compromise its quality. Most distance learning environments have the profile tool that provides space to include a photo and a short presentation. The actions related to the valorization of all participations through interventions are related to the use of some tools that constitute the collaborative learning environment, such as virtual forums, allowing the exercise of discussions and meaningful constructions and thus the teacher can mediate, articulate and keep students involved and active.

3. FINAL CONSIDERATIONS

The different forms of interaction that can be established in an online course can only be constructed with the participation of a teacher as a critical subject of the whole process and as a motivating agent and mediator of collective constructions. The fact that the development of educational practices takes place at a distance does not imply a reduction of responsibilities or burdens for the teacher, on the contrary, the task is extensive and quite laborious for all involved. Teachers and students of distance learning courses must mediate efficient and concrete relationships, establish bonds of proximity and trust, build relationships of respect, stimulate autonomy, authorship and creativity. Thus, if we reflect on the importance of the relationship between students, in this context, we obtain the constant improvement of the pedagogical practice, emphasizing that the failure to take advantage of technological possibilities to aid learning, or as simply another space for transmitting information, it means neglecting an important potential of available resources to be tested and evaluated. There is a need to promote teacher training to work in online projects, that is, in virtual education environments. Since it is facing a new way of thinking and doing, and where the population that opts for online teaching, usually because they are older and have a profession, is more critical of the teacher quality. This, therefore, needs to be a community leader and advisor, collaborative in the construction of knowledge and the pedagogical project as an integral part of its realization.

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