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Assessing the Opportunities and Behaviors of Banking Clients in Romania: An Analysis of the Use of Online Banking Applications

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Abstract

It is necessary to accelerate change among bank customers - individuals by switching from traditional banking transactions to online banking through the Internet or Mobile Banking. Developing online services involves radical changes in the banking environment. Thus, with the enhancement of Internet/Mobile Banking applications and services, credit institutions need to know, understand and anticipate customer preferences and offer multiple benefits. We build here a preliminary framework based on the practices of the clients - individuals and the literature on the banking system in Romania. We also present the results of a small online survey investigating consumer opinions on the use of online banking applications that was performed ($n = 72$) among the population in Bucharest over 18 years of age between November 2018 and February 2019. The findings have shown that the experiences and behavior of consumers of banking services is different, women prefer Internet banking services while men on Mobile banking. Two-thirds of respondents aged 19-39 do not attach great importance to the online banking application and use them several times a month.

Key words

Bank customers, online banking, Internet Banking, Mobile Banking, the security of operations, Customer Relations, Call Center, design, usability and ease of navigation in online banking applications

JEL Codes: G01, G17, G32

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1. Introduction

Internet banking is an application that allows simple, fast and secure banking transactions. This application eliminated waiting queues at bank counters and increased the quality of financial services. In order to be able to transact through Internet Banking applications, clients need to have minimal knowledge of computers, to have confidence in these mechanized systems that are needed to make transactions. Today, most of the young and adult population prefers to use this facility to pay for utilities, online shopping or other commercial transactions. (Turkes, 2009-2018) There is also a large enough category of clients who do not work comfortably with computers or the Internet and who prefer to go to the bank counters to make monthly payments, which involve very large commissions. To authenticate to the Internet banking application, clients typically need a fixed password, typically a custom Token or authentication and transaction authorization. The advantages offered by the internet banking service are: zero fees through current account balances, service security through the use of state-of-the-art SSL encryption technology at 128 bits, time savings, constantly obtaining information about account balances and transactions history and access to your 24/7 accounts, via secure online connection, anywhere in the world, using any computer that meets the technical requirements and is connected to the internet (Raicu, 2017).

Mobile banking can be a separate or common application with the internet banking that allows you to make financial transactions on a mobile device, either phone or tablet. The benefits of mobile banking through mobile applications are related to the opportunity to make payments or receive anywhere at any time (Oncioiu, 2019). There are many problems faced by banking institutions about these applications, including: doubtful security, disconnection of the Internet connection at the time of online payment, adoption of a new version of the application is no longer allowed to read documents from the old version and others (Capusneanu, 2018).

2. Literature review

The analysis of consumer behavior regarding the use of banking services has been the subject of several studies. Numerous researchers have contributed to the banking financial sector by undertaking extensive and extensive research on consumer loyalty (Türkeş and Stanca, 2013), strategic positioning of banks on the market (Capusneanu, 2014), service oriented modeling and architecture for an e-financial assistant integration within the banking system (Raicu, 2015),

comparative analysis of the performance of banking groups (Constantinescu and Topor, 2018) and others. The development of Internet banking services at the level of banking markets and their use as new distribution channels for the rest of financial services is the subject of other studies (Sanli and Al-Queisi, 2015). The banking industry has experienced a new stage of development with the advent of mobile technology. Credit institutions have the opportunity to offer the fastest existing banking services on the phone or tablet and to attract new non-bank customers from emerging markets (G. Sunil, 2013). In order to better design their strategies in the Internet and Mobile banking area, banks need to increase application security and attract as many customers as possible to this segment. Considering the above, we considered that it is necessary to conduct a study on the assessment of the behavior of banking clients in Romania related to the use of online banking applications.

3. Methodology of research

This research starts from the hypothesis that more and more bank customers should conduct online banking through Internet or Mobile banking services, given the many advantages offered: quick access to information about: current accounts, card accounts, credits, deposits, transactions in your accounts, account statements, export and print; personalize accounts by adding a name to identify them more easily (for example: salary account, savings bank for future studies), paying utility bills; making payments in lei and in foreign currency; making currency exchange; opening or closing of classical warehouses; sending or receiving money through Western Union/Money Gram services; checking ongoing transactions or transferring funds to friends, relatives or others via SMS and email.

In the marketing research, the delimitation of *the decisional issue* refers to "Do the clients of the banks in Bucharest use the online banking applications?" Taking into account the decisional issue, *the purpose of the quantitative research* was determined by identifying the opinions and the behavior of the consumers in Bucharest regarding the use of online banking applications.

The main objectives of the research were:

- Typology of banking applications used by bank clients;
- Customer's importance to the banking application used;
- the frequency of online banking applications;
- the level of satisfaction generally experienced by using the online banking application;
- ensuring the security of operations and security of transactions through online banking applications;
- the nature of the service (Customer Relations or Call Center) used to solve payment problems through bank applications;
- appreciating the level of satisfaction with design, usability and ease of navigation in online banking applications;

Therefore, a quantitative marketing research was carried out among the population of Bucharest, over 18 years of age. This research is extremely important, providing credit institutions in Romania with a general picture of consumer opinions following the use of online banking applications. The information needed to carry out the marketing research comes exclusively from the population of Bucharest.

The sampling method used in this quantitative research was the online survey. From November 1, 2018 to February 1, 2019, the stage of collecting information from the research population was carried out. The questionnaire used for data collection included a total of 9 closed questions of nominal scale type and interval. Writing the questionnaire and coding the responses was done using the online software available at www.isondate.ro. Subsequently, the online questionnaire was filled with a link and was distributed by email to different female and male users over the age of 18. Following the collection process, 72 responses resulted. The collected information was analyzed with the SPSS package using different bivariate analysis methods such as frequency tables and contingency tables.

The limiting conditions of this research are related primarily to the size of the sample (72 respondents), which is not characterized by a high degree of representativeness and high accuracy. Although the response rate is low due to the free self-selection process among respondents, the information obtained from them was relevant to the marketing research objectives and offers the opportunity to carry out new marketing research as a step in overcoming these limits.

4. Results and discussions

For the first question (Q1), a nominal scale was used and the answers were coded with numbers from 1 to 3. The relationship between the typology of the banking application used and the respondents' gender was highlighted using

contingency tables, using both the absolute frequencies and the frequencies relative. More than seven out of ten respondents are women (72.2%) and the proportion of men was only 27.8%. Of the 52 respondents, 31.9% use Internet banking services, 25.0% Mobile banking, and the remaining 15.3% use online banking applications. Behavior among men is different from that of women. Thus, 12.5% of the 20 respondents prefer mobile banking services, then 8.3% opt for integrated online services and only 6.9% are focused on internet banking services. Looking at the whole sample of 72 respondents, there is an almost equal preference for Internet banking (38.9%) and Mobile banking (37.5%) and lowers for integrated banking services (23.6%) (Table 1).

Table 1. Typology of bank applications by gender

			Gender		Total
			Male	Female	
What kind of banking application do you use?	Mobile Banking	Count	9	18	27
		% of Total	12.5%	25.0%	37.5%
	Internet Banking	Count	5	23	28
		% of Total	6.9%	31.9%	38.9%
	Integrated Mobile/Internet Banking application	Count	6	11	17
		% of Total	8.3%	15.3%	23.6%
Total		Count	20	52	72
		% of Total	27.8%	72.2%	100.0%

Source: Authors' computations

Figure 1 reveals the different behavior of the respondents regarding the banking application based on gender. In Bucharest, men prefer Mobile banking applications while women the Internet banking, thus opting for more mobility in online banking. At the same time, women prefer to shop online, pay utility bills, or check their current account balance or front-end deposits through the Internet banking service.

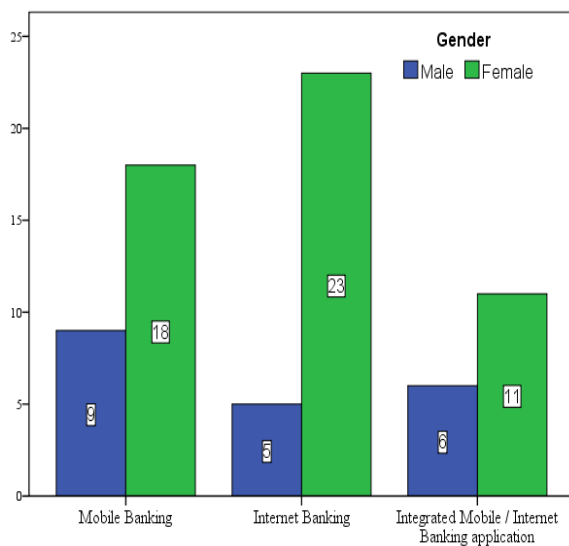


Figure 1. Typology of bank applications by gender

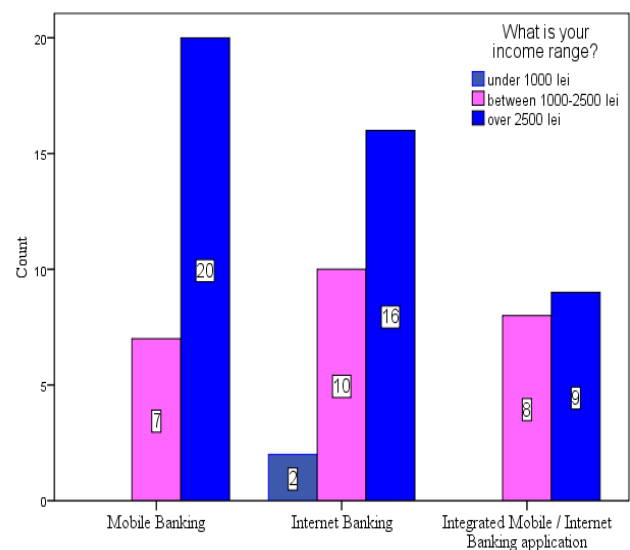


Figure 2. Typology of online banking applications by respondents' income

Source: Authors' computations

Source: Authors' computations

The relationship between the revenues obtained by the respondents in the last year and the typology of the banking application used was highlighted through contingency tables, using both absolute and relative frequencies.

From the data presented in Table 2, we can see that out of 28 respondents who prefer Internet banking services, 22.2% have earned over 2.500 lei, 13.9% have revenues between 1.000-2.500 lei and the other 2.8% have revenues below 1,000

lei. The 27 mobile banking users have revenues over ROL 1,000 (Table 2). As it can be seen in Figure 2, in Bucharest, Mobile banking services and integrated banking applications are accessible to people with over 1000 lei incomes who generally have better smartphones. At the same time, Internet banking services remain affordable for both those with incomes below 1,000 lei (2.8%) and those with high incomes (98.2% = 34.7% + 62.5%).

Table 2. Typology of online banking applications by respondents' income

			What is your income range?			Total
			Under 1000 lei	Between 1000-2500 lei	Over 2500 lei	
What kind of banking application do you use?	Mobile Banking	Count	0	7	20	27
		% of Total	.0%	9.7%	27.8%	37.5%
	Internet Banking	Count	2	10	16	28
		% of Total	2.8%	13.9%	22.2%	38.9%
	Integrated Mobile/Internet Banking application	Count	0	8	9	17
		% of Total	.0%	11.1%	12.5%	23.6%
	Total	Count	2	25	45	72
		% of Total	2.8%	34.7%	62.5%	100.0%

Source: Authors' computations

For the second question (Q2) it was used an ordinate scale of the semantic differential type and the answers were coded with numbers from 1 to 5, each code signifying the existence of a higher or lower ordering criterion. Thus, 1 means "Very important" and 5 "Very unimportant". 70% of the respondents said the online application was "Not important" or "Very inconsequential", 7% considered it "Important" or "Very important" and the remaining 18.1% remained neutral (Table 3a). The modal value reached 5.00 on the scale, the average was 4.26 points on the scale set from 1 to 5. The standard deviation from the sample average was 0.12192. The asymmetry index (Skewness) recorded a value of -1.184, indicating a negative or left asymmetry, as can be seen in the graphic representation through histogram (Table 3b).

Table 3a. Frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	1	1.4	1.4	1.4
	Important	4	5.6	5.6	6.9
	Neutral	13	18.1	18.1	25.0
	Unimportant	11	15.3	15.3	40.3
	Very unimportant	43	59.7	59.7	100.0
	Total	72	100.0	100.0	

Source: Authors' computations

Table 3b. Descriptive Statistics

N	Valid	72
	Missing	0
Mean		4.26
Std. Error of Mean		.122
Median		5.00
Mode		5
Std. Deviation		1.035
Variance		1.070
Skewness		-1.184
Std. Error of Skewness		.283
Kurtosis		.407
Std. Error of Kurtosis		.559

Source: Authors' computations

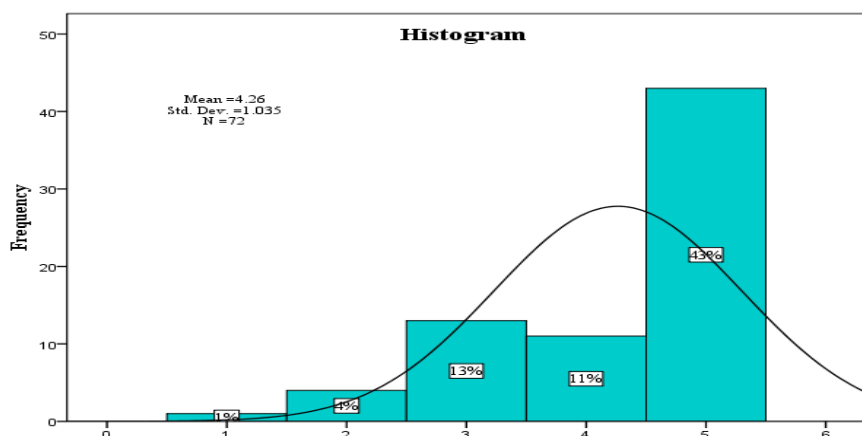


Figure 3. Histogram

The vault indicator has reached the value of 0.407 indicating a leptocurba (curved curve) distribution compared to the normal one, which can be seen through the histogram below. According to the media histogram, it was 4.26 and the standard deviation of 1.03452 for a sample of 72 respondents. There is a curved curve with a large extension to the left of

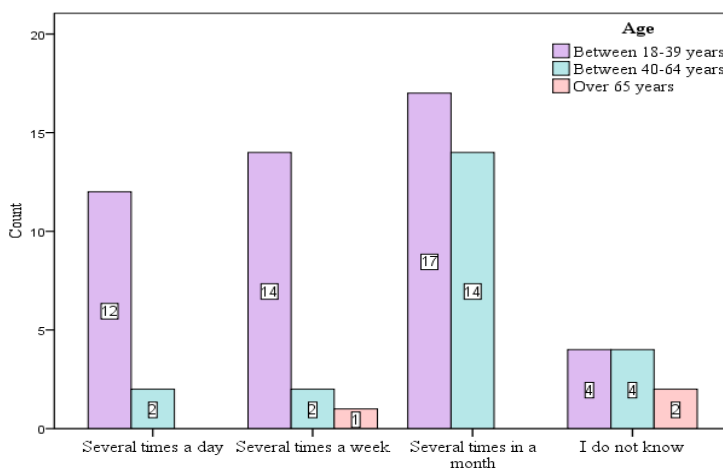
the graph. In Figure 2.3, 54 respondents indicated that the online banking application is irrelevant (11 people) and very inconsequential (43 people) (Figure 3).

For the third question (Q3), a nominal scale was used and the answers were coded with numbers from 1 to 4. The link between the frequency of online banking applications and the age of the respondents was also highlighted using contingency tables, using both absolute frequencies and relative ones. From the data presented in Table 4 we can see that out of the 17 respondents who use online banking applications several times a week, 19.4% are between 18-39 years old, 2.8% are aged 40-64, and over 65 is the rest of 1.4%. 10 users of online banking applications do not know how often they call on them (Table 4).

Table 4. Frequency of using online banking applications by age

			Age			Total
			Between 18-39 years	Between 40-64 years	Over 65 years	
How often do you use the online banking application?	Several times a day	Count	12	2	0	14
		% of Total	16.7%	2.8%	.0%	19.4%
	Several times a week	Count	14	2	1	17
		% of Total	19.4%	2.8%	1.4%	23.6%
	Several times in a month	Count	17	14	0	31
		% of Total	23.6%	19.4%	.0%	43.1%
	I do not know	Count	4	4	2	10
		% of Total	5.6%	5.6%	2.8%	13.9%
		Count	47	22	3	72
	Total	% of Total	65.3%	30.6%	4.2%	100.0%

Source: Authors' computations



As it can be seen in Figure 4 in Bucharest, the frequency of using online banking applications is high (43 people) among people aged 19-39, who own and use the smartphone's real capacity. At the same time, online banking applications are accessed by an average frequency (18 people) by people aged 40-64.

For the fourth question (Q4) was used an ordinate scale of the type of semantic differentiation and the answers were coded from 1 - "Very satisfied" to 5 - "Very dissatisfied". Only 4.2% of respondents are "Satisfied" or "Very satisfied" in general by the online banking application while 69.5% say "Dissatisfied" or "Very dissatisfied". Neutrals remain in this respect 26.4% of the 72 respondents (Table 5a).

Figure 4. Frequency of using online banking applications by age

Source: Authors' computations

Table 5a. Frequency table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	2	2.8	2.8	2.8
	Important	1	1.4	1.4	4.2
	Neutral	19	26.4	26.4	30.6
	Unimportant	30	41.7	41.7	72.2
	Very unimportant	20	27.8	27.8	100.0
Total		72	100.0	100.0	

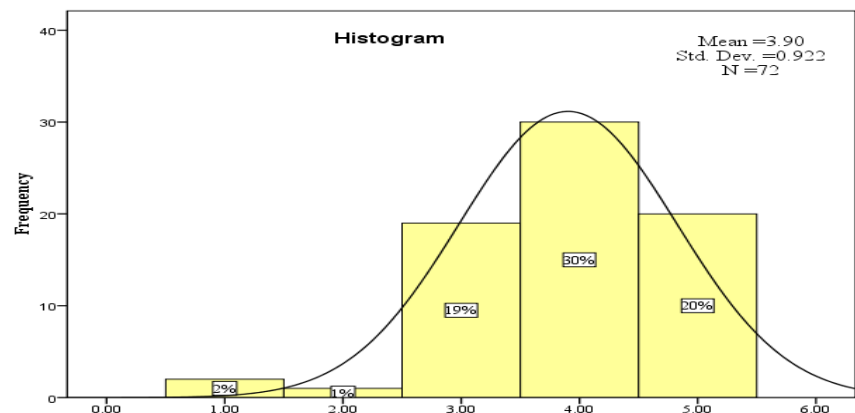
Source: Authors' computations

The modal value reached 4.00 on the scale. The average was 3.90 points, being located between scale 3 and 4, very close to scale 4 - "Important". The standard deviation value from the sample average was 0.10863. The asymmetry index

(Skewness) recorded a value of -0.802, indicating a negative or slightly asymmetric asymmetry, as can be seen in the graphical representation through histogram (Table 5b).

Table 5b. Descriptive Statistics

N	Valid	72
	Missing	0
Mean		3.9028
Std. Error of Mean		.10863
Median		4.0000
Mode		4.00
Std. Deviation		.92172
Variance		.850
Skewness		-.802
Std. Error of Skewness		.283
Kurtosis		1.046
Std. Error of Kurtosis		.559



Source: Authors' computations

Figure 5. Histogram

The vault indicator has reached 1.046, indicating a leptocurba (curved curve) distribution compared to the normal one, which can be seen through the histogram below. According to the media histogram, it was 3.90 and the standard deviation of 0.922 for a sample of 72 respondents. There is a curved curve with a slight extension to the left of the graph. In Figure 5, 50 respondents indicated they are generally dissatisfied with the online banking application, while only 3 respondents say they are satisfied. For the fifth question (Q5) a nominal scale was used and the answers were coded with numbers from 1 (No) to 2 (Yes).

The relationship between the security of transactions and the security of transactions offered through the online banking application and the age of the respondents was also highlighted by using contingency tables, using the absolute and relative frequencies. From the data presented in Table 6, we can see that of the total of 72 respondents using online banking applications in Bucharest, 94.4% consider that the online banking application they offer provides the security of operations and the security of the desired transactions, the remaining 5.6% (4 people) disagreed with this statement.

Table 6. Operations Security and Transaction Security Provided by Online Banking Application Depending on Age Groups

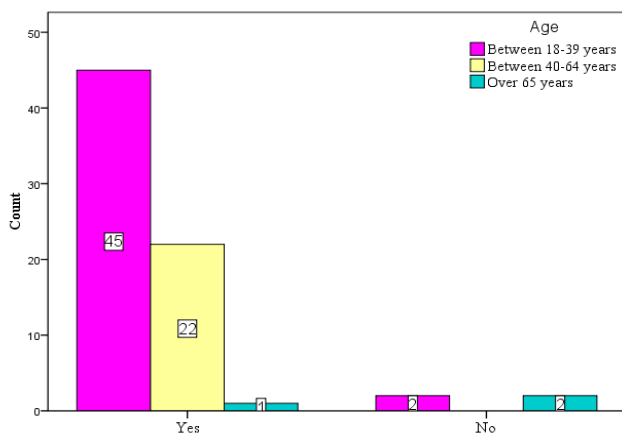
			Age			Total
			Between 18-39 years	Between 40-64 years	Over 65 years	
Does the online banking application you use provide the security of the operations and the security of the transactions you want?	Yes	Count	45	22	1	68
		% of Total	62.5%	30.6%	1.4%	94.4%
	No	Count	2	0	2	4
		% of Total	2.8%	.0%	2.8%	5.6%
	Total	Count	47	22	3	72
		% of Total				

Source: Authors' computations

Table 7. The type of service accessed to solve payment problems according to respondents' gender

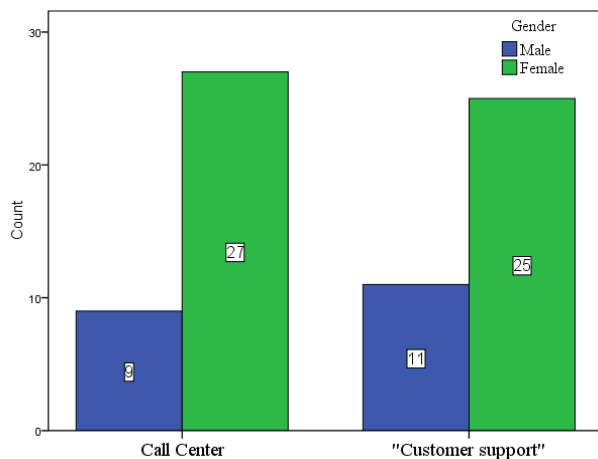
			Gender		Total
			Male	Female	
When do you have a problem with a payment through your bank application, which is the first service you visit?	Call Center	Count	9	27	36
		% of Total	12.5%	37.5%	50.0%
	"Customer support"	Count	11	25	36
		% of Total	15.3%	34.7%	50.0%
	Total	Count	20	52	72
		% of Total			

Source: Authors' computations



As it can be seen in Figure 6, of the total of 68 people who consider that the online banking application offers the security and security of the desired transactions by age, all categories are represented, in proportion to the survey, as follows: 45 people aged 18-39, 22 people aged 40-64 and 1 person over 65. For the sixth question (Q6) a nominal scale was used and the answers were coded with numbers from 1 (Call Center) to 2 (Customer Relations). The relationship between the type of service accessed in solving payment problems and respondents' sex was also highlighted using contingency tables, using absolute and relative frequencies. Table 7 shows that out of 72 respondents using online banking applications, 50% prefer call center service to solve problems and the other half prefer customer service.

Figure 6. Operations Security and Transaction Security Provided by Online Banking Application Depending on Age Groups
Source: Authors' computations



Viewing Figure 7, it is noticed that women prefer to a higher proportion call center service while men on customer relations. For the seventh question (Q7), an ordinate scale of the semantic differential type was used and the answers were coded from 5- "Very satisfied" to 1- "Very dissatisfied." The relationship between the level of satisfaction experienced by the respondents regarding the design of the online banking application and the respondents' sex was also highlighted using contingency tables using the absolute and relative frequencies. From Table 8, it results that more than half of the respondents are dissatisfied or very dissatisfied with the design of the online banking application 58.3%, 20.8% remain neutral to this, and the rest of 13.9% are placed in the category of people satisfied and very satisfied with the design online banking application.

Figure 7. The type of service accessed to solve payment problems according to respondents' gender
Source: Authors' computations

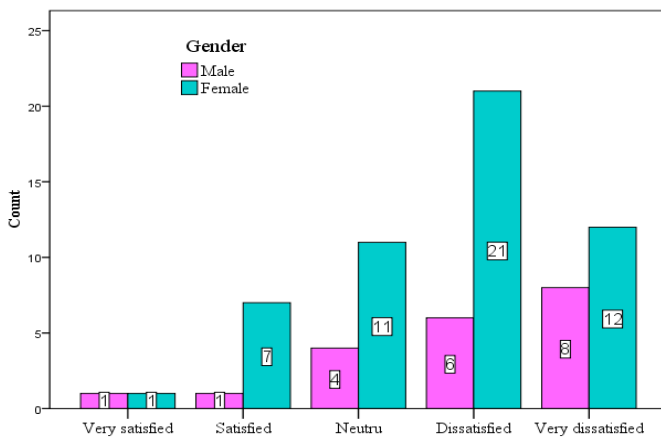
Table 8. Appreciation of the level of satisfaction with the design of online banking application based on gender

			Gender		Total
			Men	Women	
Are you satisfied with the online banking application used in view of the current design?	Very satisfied	Count	1	1	2
		% of Total	1.4%	1.4%	2.8%
	Satisfied	Count	1	7	8
		% of Total	1.4%	9.7%	11.1%
	Neither satisfied, nor dissatisfied	Count	4	11	15
		% of Total	5.6%	15.3%	20.8%
	Dissatisfied	Count	6	21	27
		% of Total	8.3%	29.2%	37.5%
	Very dissatisfied	Count	8	12	20
		% of Total	11.1%	16.7%	27.8%
Total		Count	20	52	72
		% of Total	27.8%	72.2%	100.0%

Source: Authors' computations

In Figure 8, we can see the distribution of responses regarding the appreciation of the design satisfaction of online banking applications, depending on respondents' gender. Thus, 33 women and 14 men are not satisfied with the design of the

online banking application. 11 other women and 4 men are neutral with regard to the design of the online banking application; and 8 women and 2 men are satisfied and very satisfied.



To the eighth question (Q8) was used an ordinate scale of the semantic differential type and the answers were coded from 5- "Very satisfied" to 1- "Very dissatisfied". The relationship between the satisfaction level experienced by the respondents regarding the usefulness of the on-line banking application used and the age of the respondents was also highlighted by using contingency tables, using the absolute and relative frequencies. The lack of satisfaction with the utility of the banking application is felt by the majority of respondents (81.9%). Only 5.6 percent of the respondents are in the category of satisfied and very satisfied people, the remaining 12.5% expressing a neutral opinion about the usefulness of the online banking application.

Figure 8. Appreciation of the level of satisfaction with the design of online banking application based on gender

Source: Authors' computations

Table 9. Appreciation of the level of satisfaction regarding the usefulness of the online banking application used by age groups

			Age			Total
			Between 18-39 years	Between 40-64 years	Over 65 years	
Are you satisfied with the online banking application given its usefulness?	Very satisfied	Count	0	0	2	2
		% of Total	.0%	.0%	2.8%	2.8%
	Satisfied	Count	1	1	0	2
		% of Total	1.4%	1.4%	.0%	2.8%
	Neither satisfied, nor dissatisfied	Count	7	1	1	9
		% of Total	9.7%	1.4%	1.4%	12.5%
	Dissatisfied	Count	17	9	0	26
		% of Total	23.6%	12.5%	.0%	36.1%
	Very dissatisfied	Count	22	11	0	33
		% of Total	30.6%	15.3%	.0%	45.8%
	Total	Count	47	22	3	72
		% of Total	65.3%	30.6%	4.2%	100.0%

Source: Authors' computations

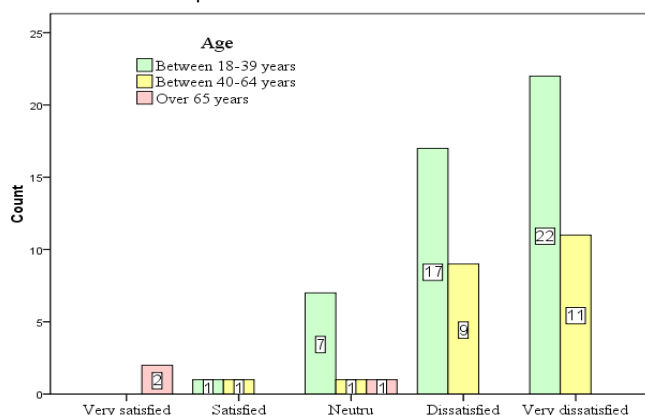


Figure 9, referring to the appreciation of satisfaction with the usefulness of the age-based banking application, shows that 81.9% of dissatisfied respondents fall within the age range of 18-64 years.

To the ninth question (Q9) was used an ordinate scale of the semantic differential type and the answers were coded from 5- "Very satisfied" to 1- "Very dissatisfied". The relationship between the satisfaction level experienced by respondents regarding ease of navigation in the online banking application used and the age of the respondents was also highlighted using contingent tables. Only 7% of respondents appreciate the ease of non-banking within the online banking application.

Table 9. Appreciation of the level of satisfaction regarding the usefulness of the online banking application used by age groups

Source: Authors' computations

The remaining 82% of respondents say that navigation is difficult and requires a long time, and 11.1% offer a neutral response (Table 10).

Table 10. Appreciation of ease of navigation satisfaction in the online banking application depending on the age group

			Gender		Total
			Men	Women	
Are you satisfied with the online banking application used in regard of ease of navigation?	Very satisfied	Count	1	2	2
		% of Total	1.4%	2.8%	2.8%
	Satisfied	Count	0	3	3
		% of Total	.0%	4.2%	4.2%
	Neither satisfied, nor dissatisfied	Count	3	8	8
		% of Total	4.2%	11.1%	11.1%
	Dissatisfied	Count	6	29	29
		% of Total	8.3%	40.3%	40.3%
	Very dissatisfied	Count	10	30	30
		% of Total	13.9%	41.7%	41.7%
Total		Count	20	52	72
		% of Total	27.8%	72.2%	100.0%

Source: Authors' computations

Of the 52 women respondents, 43 said they were unhappy with the online banking application used in regard of ease of navigation (Figure 10).

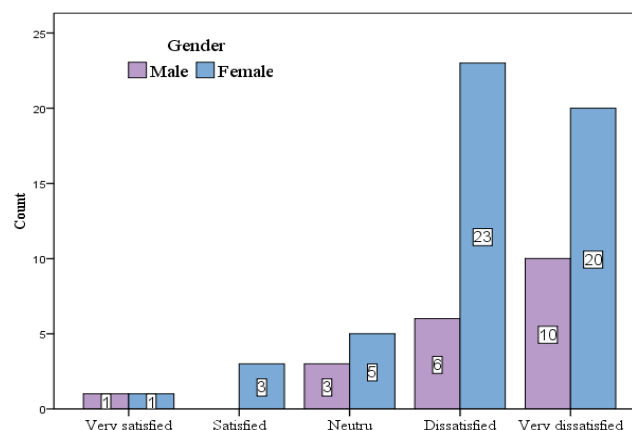


Figure 10. Appreciation of ease of navigation satisfaction in the online banking application depending on the age group

Source: Authors' computations

5. Conclusions

This marketing research provides an overview of the opinions of Bucharest consumers aged over 18, following the use of online banking applications, such as Mobile Banking, Internet Banking or Mobile / Internet Banking integrated banking applications. The results of this online survey, which questioned consumers about the use of online banking applications, showed that the experiences and behavior of consumers of banking services are different depending on the respondents' gender, age and monthly income. Women prefer Internet Banking while Men on Mobile Banking. Two-thirds of respondents aged 19-39 do not attach great importance to the online banking application and use it several times a month. The frequency of using online banking applications is high among people aged 19-39, who own and use smartphone's real capacity.

Of the total of 72 respondents using online banking applications in Bucharest, 94.4% believe that the online banking application they use provides the security of transactions, but more than half of the respondents are dissatisfied with the design of the banking application online; only 5.6% of online banking application users fall into the category of people who are happy with their utility; and most people involved in this poll (81.9% = 59.7% - women + 22.2% - men) are not satisfied with the ease with which they navigate within the online banking application. It is necessary to improve the ways of collecting the primary and secondary internal data, the continuous development of the offered banking systems and

applications, in accordance with the evolution of the technology and the characteristics of the Romanian society. Profitability cannot be increased after a favorable market environment. It is necessary to restructure the microeconomic level of the activity of credit institutions. Marketing strategies must be renewed according to consumer behavior changes.

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