Non-Cash Payment Instruments And Their Acceptance By The Macedonian Citizens During Covid19 Pandemic

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Abstract: The world Covid 19 pandemic, has produced deep changes in the ways of leaving and realizing normal daily activities of the citizens. One of the daily activities realized by the citizens is the payment as a way of finalizing the transaction with a certain monetary instrument. Payment is one of the activities that banks must adapt to the new situation and have to offer various payment instruments that will provide a safe and continuous way of carrying out financial activities. But, on the other hand, the question is how much the clients are prepared to accept those banks payment instruments and to change their habits and preferences for cash payment. The main aim of this paper is to perform an analysis of the clients' payment adaptation during Covid19 pandemic and their acceptance of the non-cash payment instruments offered by the commercial banks in the North Macedonia. For this purpose, a survey research has been performed in way to analyze the above mention situation before the pandemic start and during the pandemic.

Key words: payment instruments, banks, pandemic

1. Introduction

Digital revolution imposed by the internet, has caused significant changes in all spheres of social life and economic activity, and naturally, it has not passed away the banking sector as well.

In its essence, the banking sector is conservative and tends towards traditional and established methods. Traditionally, financial products and services have been distributed through bank branches due to their proximity to customers, the large number of services they perform, the added value that the client receives at the branch, and the important role bank branches play in decisions made by customers (Le'bana-Cabanillas eta al., 2013). But, during the time, the number of bank transactions increased to unexpected ratios, so that the use of traditional methods for transactions processing was not possible any more.

The new technological achievements that have been successfully implemented in the banks working, have caused significant changes in the bank's way off communication with its clients, i.e. in the way the banking institutions has distributed their services to the clients. Namely, there is a gradual transformation from traditional to modern electronic way of distribution.

E-banking is a modern service that is a precondition for the banks survival on the market. The banks significantly invest in this service, which is a strategic tool for lowering the costs in the banking sector, in order to gain the clients' trust, competitive advantage and effective extension of their business out of the geographical barriers. (Brief Survey on Use of E-Bankig in Albania, Ermela Kripa, PhD-European University of Tirana, Marinela Seitaj, MsC, Coordinator UET Language Centre/TELTS test, European University of Tirana, Academic Journal of Interdisciplinary Studies, MCSER Publishing, Rome-Italy, July 2015). In fact, the credibility of the entire banking system will be under the question should the fast changes in the clients' preferences are not identified and met, and if the clients are not informed in due time and solutions are not offered to them in real time.

The first step towards the electronic banking are the automated teller machines (ATM) that enable lower working expenses, time saving for the bank employees and use of the bank services by the clients any time of the day. Then POS terminals as a system that enables connecting of the buyers, the bank and the retail, the payment cards as an instrument for realizing cashless payments, the electronic money, the electronic checks, and the mobile banking that is the latest trend of the electronic banking etc.

The new modern trends in the banks working are being gradually implemented in the banking sector of our country, too. But, the characteristic of our situation is a still relatively low preparedness for higher development of the digital banking, and use of some, now already traditional instruments such as the payment cards (Kadievska-Vojnovic 2016).

There are many factors that define the preparedness for digitalization in the banking sector: (Kadievska-Vojnovic 2016).

- The banks capacity for innovations
- The phase of technological development in which the country is
- The level of competition in the sector
- The consumer culture
- The population demographic structure
- The concentration degree in the banking sector and
- The existing regulative, which can promote or limit the development of new technological solutions.

But, besides the encouraging factors, there are limiting factors as well: (Kadievska-Vojnovic 2016).

- The negative effects that the financial crisis had on the banks' capacity for innovations and
- The local population mentality that has not show the sufficient level of trust to online activities and cashless way of payment yet.

2. Analysis of the payment system in the Republic of North Macedonia

The proliferation of payment cards – that is, debit, credit, and prepaid cards – has dramatically changed the way we shop and merchants sell goods and services. Today, payment cards are indispensable in most advanced economies. (Bolt &Chakravorti, 2008).

The payment card as a specific instrument for cashless payments, issued by the banks, trade or other specialized businesses, is mainly used for: (Uros T., 2010) paying for products and/or services; cash withdrawal and electronic payment.

The increased usage of cards has increased the value of payment networks, such as Visa Inc., MasterCard Worldwide etc.

As for the situation in the Republic of North Macedonia, from the report on the data for payments statistics published by the NBRM, in December 2019, totally 1 864 227 cards with a function for cash withdrawing/depositing, are in circulation. 1 825 824 or 98% of the total cards number, are owned by individuals, and 99% of them or 1 809 513 cards have payments function. Therefore, in average, 1,8 payment cards are issued to a million people in the state. In 2019, there were 13 733 merchants, i.e. 19 779 selling points (data for 2018) that accepted payment cards. In December 2019 , according to the same official source, there are 1 072 ATMs in the country and 31721 points of sale (POS terminals). (http://www.nbrm.mk/platezhna_statistika.nspx). Analyzing the trend for payment cards in the period from January 2016 to December 2019, some short-term fluctuations can be seen, but for the whole period, it has been noted that there is an increase in the number of active payment cards of almost 8%. This statistics undoubtedly lead to a conclusion that there is a solid infrastructure for cashless payment, but also for cash withdrawal without physical presence on the counters in the bank branches.

The research aim

The aim of this research is to analyze how the banks and their clients are prepared to adapt themselves for using banking services in the situation of pandemic. Therefore, the focus of this research is on analyzing the effects of using the payment cards, and the preparedness and the degree of acceptance and usage of such payment instruments by the people.

Target group

The target group in this research are the citizens of Republic of North Macedonia over 18 years old, who have opened a transaction account in some commercial bank in the country. The target group is segmented into several categories in order to see their habits and perceptions on the research subject from a point of view of different age structure, social structure, gender structure, job status, educational degree, resident regions etc. The answers given by the respondents from different regions were given according to the residence county in the statistical region. The sublimation according to 8 statistical regions (HTEC third level), accepted by the Central Bureau of Statistics, was made for the analyses consistency and eventual comparison of the results on a regional level.

Techniques for data collecting and instruments for researching

The research was realized by an anonymous survey questionnaire of 25 structured questions of closed type, which generally reflect the respondents' perception on the habits, safety and acceptance of the payment cards and electronic systems offered by the banks before the pandemic start and after it was designated. Data collecting was only electronic, in the period of time from 29.04 2020 to 21.05 2020, under the conditions of a state of emergency in the country, and respecting the recommendation for social distance between the interviewers and the respondents. Having in mind the specific period for researching, the link to the poll was sent to more than 6000 people, and totally 920 respondents gave their answers.

Research main hypothesis

The usage of payment cards and the habits, i.e. preferences for their usage by the citizens before the pandemic and after its start, are different.

Separate hypotheses

For easier and more detailed testing of the main hypothesis, eight auxiliary hypotheses in a close correlation with the research main hypothesis, have been established.

1. There is not statistical dependence between the respondents' status and preferences for the way of withdrawing financial resources (counter or ATM).
2. There is not statistical dependence in the frequency of visiting bank branches before and during the pandemic.
3. There is not statistical dependence between the preferences for payment in the retail, i.e. the usage of the payment card before the pandemic start and the respondents' age.
4. There is not statistical dependence between the change of the preferences for payment in the retail, i.e. the usage of the payment card before the pandemic start and the respondents' age.
5. There is not statistical dependence between the preferences for using the payment card and the respondents' monthly incomes.
6. There is not statistical dependence between the change of the preferences for using the payment card from the pandemic start and the respondents' monthly incomes.
7. There is not statistical dependence between the preferences for payment in the retail, i.e. the usage of the payment card before the pandemic and after its start.
8. There is not statistical dependence between the usage of the payment card in the retail before the pandemic start and after its start.

The structure of the respondents by gender, age and status, is given in the Table 1.

Table 1			
Row Labels	**female**	**male**	
18-25 years	**62**	**31**	**93**
Employed in public sector	2		2
Employed in private sector	12	12	24
Unemployed	6	3	9
Student	42	16	58
26-35 years	**160**	**85**	**245**
Employed in public sector	55	27	82
Employed in private sector	82	50	132
Unemployed	19	8	27
Student	4		4
36-45 years	**208**	**126**	**334**
Employed in public sector	122	78	200
Employed in private sector	71	41	112
Unemployed	15	7	22
46-55 years	**97**	**59**	**156**
Employed in public sector	70	31	101
Employed in private sector	24	27	51
Unemployed	3	1	4
More than 55 years	**58**	**34**	**92**
Employed in public sector	20	10	30
Employed in private sector	7	4	11
Unemployed	1		1
Retired	30	20	50
Grand Total	**585**	**335**	**920**

Regarding the monthly incomes of the respondents, 413 respondents or about 45%, have answered that their personal monthly incomes are from 2000 den. to 30000 den.; 229 respondents or 25% that they make more than 30000 den. a month, while 257 respondents or 28% that have a monthly salary less than 20000 den. 21 respondents have not answered this question.

Table 2

Table 2					
Row Labels	**Between 20 000den and 30 000 den.**	**More than 30 000 den.**	**Less than 20 000 den.**	**Didn't respond**	**Grand Total**
18-25 years	16	6	61	10	93
26-35 years	122	40	78	5	245
36-45 years	146	116	69	3	334
46-55 years	85	45	24	2	156
More than 55 years	44	22	25	1	92
Grand Total	**413**	**229**	**257**	**21**	**920**

The research results

The research results will be presented in two parts. In the first part, some quantitative analyses obtained from the answers in the questionnaire will be presented, while in the second one, the results of the statistical testing of the hypotheses set in the research, will be shown.

Descriptive statistics of the survey results

Of the total number of respondents, 875 or more than 95% have answered that they possess payment card. From them, 841 respondents or 96,1% have answered that they prefer to withdraw money from ATM than from the bank counter. From the respondents who possess a payment card, more than 55% , in the last 6 months before the start of the pandemic, have never visited the branch of their bank, while about 30% have visited the branch once a month in average in the last 6 months. But, since the start of the pandemic, almost 70% of the respondents (607 respondents) have never visited their bank branch, and 188 respondents or 21,5% have visited the bank branch at least once. These results show that the respondents have started using the payment card for cashless payment or for withdrawing money from the ATM, in a larger number (Table 3).

Table 3

Row Labels	Physically visited a branch before the pandemic start		Physically visited a branch from the pandemic start	
Twice a month	**65**	7.4%	**33**	3.8%
Three times a month	**18**	2.1%	**14**	1.6%
Once a month	**261**	29.8%	**188**	21.5%
I haven't visited a branch because I'm using a payment card to pay or withdraw a money from an ATM	**482**	55.1%	**607**	69.4%
More than three times a month	**48**	5.5%	**31**	3.5%
Did not respond	**1**	0.1%	**2**	0.2%
Grand Total	**875**		**875**	

Regarding preferences for using the payment card before the pandemic start, most of the respondents who use payment card have answered that they prefer to pay by a payment card (64%), while 313 respondents or 36% that prefer to pay in cash although they possess a payment card.

Table 4

Row Labels	Payment preferences before the pandemic	
I prefer to pay in cash even though I have a payment card	313	35.98%
I prefer to pay with payment card	557	64.02%
Grand Total	**870**	

These preferences, from the start of the pandemic, have undergone some changes in favor of the payment card. So, about 8% is a higher number of respondents who prefer to use payment card since the pandemic start, compared to the number two months ago, i.e. before its start.

Table 5

Row Labels	Preferences for payment before the pandemic	
Yes, I started to pay in cash more than before	19	2.17%
Yes, I started to pay with payment card more than before	179	20.48%

No, I still prefer to in cash	233	26.66%
No, I prefer to pay with payment card	443	50.69%
Grand Total	**874**	

The respondents have been asked to give their opinion concerning the advantages and stimulations the banks have made in the period since the start of the pandemic for avoiding physical presence in their branches.

Table 6

	Yes	no	didn't respond
The bank encouraged me to use a payment card to with draw cash	425	460	35
The bank promoted the use of electronic services instead of a physical presence at a branch counter	571	314	35
The bank encouraged me to use a payment card in retail	518	363	39
The bank offered me additional benefits (lower transaction costs, higher amount of overdraft, etc.) to use its e-services instead the physical realization of activities	380	502	38

3. Statistical hypotheses testing

In order to examine the dependences between separate measuring indicators, statistical tests have been made by means of x^2 test independence test.

Statistical hypothesis 1

H_0: There is not a statistical dependence between the status of the respondents and preferences for the way of withdrawing money (counter or ATM).

H_1: There is a statistical dependence between the status of the respondents and preferences for the way of withdrawing money (counter or ATM).

Respondents status	**Counter**	**Payment card**	**Total**	**Results of χ^2 test**
Employed in public sector	11	403	**414**	***χ^2= 64.349 > 9.488*** ***df* = 4** ***p < 0.00*** ***α = 0.05***
Employed in private sector	12	318	**330**	
Unemployed	10	51	**61**	
Retired	13	36	**49**	
Student	6	56	**62**	
Total	**52**	**864**	**916**	

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesis for independence between the respondents status and the preferences for way of withdrawing money (counter or ATM), should be rejected. In other words, the respondents' status and the preferences for way of withdrawing money (counter or ATM) are in a statistical dependence.

Statistical hypothesis 2

H_0: There is not a statistical dependence in the frequency of visiting the bank branches before and during the pandemic.

H_1: There is a statistical dependence in the frequency of visiting the bank branches before and during the pandemic.

	I haven't visited a branch	Once a month	Twice a month	Three times a month	More than three times a month	**Total**	**Results of χ^2 test**
I haven't visited a branch	469	15	3	1	2	**490**	***χ^2= 1059.24 > 26.296***
Once a month	125	143	9	3		**280**	***df* = 16**
Twice a month	18	29	18	1	1	**67**	***p < 0.00***
Three times a month		9	1	9	1	**20**	***α = 0.05***
More than three times a month	7	9	6	2	28	**52**	***C = 0.7336***
Total	**619**	**205**	**37**	**16**	**32**	**909**	

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesis for independence between the respondents status and the preferences for way of withdrawing money (counter or ATM), should be discarded. This means that there is statistically significant dependence in the frequency of visiting the bank branches before and after the pandemic. From the estimated contingency coefficient *(C = 0.7336),* it can be concluded that there is a high dependence between the variables.

Statistical hypothesis 3

H_0: There is not a statistical dependence between the preferences for using the payment card and the respondents' age.

H_1: There is a statistical dependence between the preferences for using the payment card and the respondents' age.

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesis should be discarded. In other words, there is statistically significant dependence between the respondents' age and the preferences for using the payment card when paying in retail. But having in mind the low value of the contingency coefficient *(C=0.166)*, it can be concluded that there is a little relationship between the variables.

	I prefer to pay in cash	**I prefer to pay with payment card**	**Total**	**Results of χ^2 test**
18-25 years	48	36	**84**	***χ^2= 24.579 > 9.488***
26-35 years	94	139	**233**	***df* = 4**
36-45 years	100	220	**320**	***p < 0.00***
46-55 years	45	107	**152**	***α = 0.05***
More than 55 years	26	55	**81**	***C = 0.166***
Total	**313**	**557**	**870**	

Statistical hypothesis 4

H_0: There is not a statistical dependence between the preferences change for payment in retail, i.e. using the payment card since the pandemic start and the respondents' age.

H_1: There is a statistical dependence between the preferences change for payment in retail, i.e. using the payment card since the pandemic start and the respondents' age.

	Yes, I pay more in cash	Yes, I pay more with payment card	No. I still pay in cash	No, I still pat with payment card	**Total**	**χ^2 test results**
18-25 years	3	11	37	33	**84**	***χ^2*= 19.650 < 21.026** ***df* = 12** ***p < 0.074*** ***α = 0.05***
26-35 years	3	51	64	115	**233**	
36-45 years	7	69	77	169	**322**	
46-55 years	4	30	33	85	**152**	
More than 55 years	2	18	22	41	**83**	
Total	**19**	**179**	**233**	**443**	**874**	

From x^2 test independence test it can be concluded that on the significance level α=5%, the null hypothesisshould not be discarded.

Statistical hypothesis 5

H_0: There is not a statistical dependence between the preferences for way of payment in retail and the respondents' monthly incomes.

H_1: There is a statistical dependence between the preferences for way of payment in retail and the respondents' monthly incomes.

	I prefer to pay in cash	**I prefer to pay with payment card**	**Total**	**Results of χ^2 test**
Between 20 000 den. and 30 000 den.	133	273	**406**	***χ^2*= 58.476 > 5.991** ***df* = 2** ***p < 0.00*** ***α = 0.05***
More than 30 000 den.	52	176	**228**	
Less than 20 000 den	137	111	**248**	
Total	**322**	**560**	**882**	

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesisshould be discarded. In other words, there is statistically significant dependence between the respondents' monthly incomes and the preferences for using the payment card when paying in retail.

Statistical hypothesis 6

H_0: There is not a statistical dependence between the preferences change for using the payment card from the pandemic start and the respondents' monthly incomes.

H_1: There is a statistical dependence between the preferences change for using the payment card from the pandemic start and the respondents' monthly incomes.

	Yes, I prefer to pay more in cash	Yes, I pay more with payment card	No, I still pay in cash	No, I still pay with payment card	total	**Results of χ^2 test**
Between 20 000 den. and 30 000 den.	6	88	94	214	**402**	***χ^2*= 49.511 > 12.592**
More than 30 000 den.	4	39	38	143	**224**	***df* = 6**
Less than 20 000 den	9	51	91	80	**231**	***p* < 0.00**
Total	**19**	**178**	**223**	**437**	**857**	***α* = 0.05**

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesis should be discarded. In other words, there is statistically significant dependence between the monthly incomes of the respondents who possess payment cards and the preferences change for using the payment card when paying in retail after the pandemic start.

Statistical hypothesis 7

H_0: There is not a statistical dependence between the preferences for payment in retail, i.e. using the payment card before the pandemic start and its start.

H_1: There is a statistical dependence between the preferences for payment in retail, i.e. using the payment card before the pandemic start and its start.

	I prefer to pay with cash	**I prefer to pay with payment card**	**Total**	**Results from χ^2 test**
Yes, I pay more in cash	9	8	**17**	***χ^2*= 593.175 > 7.815**
Yes, I pay more in cash	78	100	**178**	***df* = 3**
Yes, I pay more in cash	220	11	**231**	***p* < 0.00**
Yes, I pay more in cash	5	438	**443**	***α* = 0.05**
Total	**312**	**557**	**869**	***C* = 0.637**

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesisshould be discarded. In other words, there is statistically significant dependence between the preferences for using the payment card for paying in retail before the pandemic start and its start.

Statistical hypothesis 8

H_0: There is not a statistical dependence between the use of the payment card in retail, before the pandemic start and its start.

H_1: There is a statistical dependence between the use of the payment card in retail, before the pandemic start and its start.

Have you used payment card in the market? (before/from the pandemic start)	**Yes**	**no**	**Total**	**Results of χ^2 test**
Yes	767	9	**776**	***χ^2*= 511.614 > 3.841**
No	22	58	**80**	***df* = 1**
Total	**789**	**67**	**856**	***p* < 0.00**

				α = 0.05

From x^2 independence test it can be concluded that on the significance level α=5%, the null hypothesisshould be discarded. This leads to a conclusion that there is statistically significant dependence between the use of the payment card for paying in retail, before the pandemic start and its start.

The research limitations

Although the research has been conducted by taking account of the scientific approach in the sample defining, nevertheless it has some limitations.

- One of those limitations is the territorial deployment of the respondents. Namely, although the sample contains territorial scope of the respondents from all eight statistical regions, there is a disparity concerning the representativeness of each separate region. In fact, most of the respondents (324) or about 35% are from the region of Pelagonia, while the participation of the interviewed persons from the region of Polog, and the Eastern and Northern regions, is between 4,8% and 6,3% of the total respondents number.
- As the research has been realized only online, there has not been any physical communication, especially with the representatives from the banking institutions who would give appropriate overviews concerning the subject of this research.
- Having in mind that the research has been realized by sharing a link to the questionnaire, generally speaking, it is a voluntary sample.

4. Conclusion

The results show that generally the people have changed their preferences for the ways of payment and usage of the payment cards during the pandemic. That is probably due to the fact that most of the banks encourage their clients to use different services of the bank without physical presence as a part of the recommendations for physical distancing. However, the results indicate that there is still a large space for acting in this respect.

- On the basis of the analysis of the secondary data from NBRM, it can be concluded that there is a solid infrastructure for cashless payment and cash withdrawing without physical presence over the counters in the banks branches.
- Although from the analyses of banks' web sites in the country it can be seen that almost all banks encourage their clients to realize their financial obligations without physical presence in the branch and that they offer some benefits such as lower commissions etc., there is still a large number of the respondents that have a negative answer concerning these questions. Maybe, that is due to inappropriate channel for information delivering by some of the banks.
- This survey has confirmed the main hypothesis that the people's habits, i.e. preferences for using payment cards before the pandemic start and after its start, are different. The main hypothesis has been also confirmed by the testing of separate statistical hypothesis, and the following statistical conclusions have been made:
    - There is a statistical dependence between the status of the respondents (employed in a public sector, private sector, unemployed, students, pensioners) and the preferences for way of withdrawing money (counter or ATM).
    - There is a statistical dependence in the frequency of visiting the banks branches before and during the pandemic.
    - There is a statistical dependence between the preference for using the payment card and the respondents' monthly incomes.

- There is a statistical dependence between the change in the preferences for using the payment card from the pandemic start and the respondents' monthly incomes.
- There is a statistical dependence between the preferences for paying in retail, i.e. using the payment card, before the pandemic start and after the start of the pandemic.
- There is a statistical dependence between the usage of the payment card when paying in retail before the pandemic start and after the pandemic start.

Recommendations

Taking into account the fact that there is a statistical dependence between the status of the respondents and the preferences for the way of money withdrawing (counter or ATM), and the preferences for using the payment card and the monthly incomes of the respondents, the banking institutions should identify the reasons for such preferences of different categories of people and should offer segmented educative campaigns for different clients categories.

The banks should find out an appropriate communication channel with their clients in order to inform the clients on the offered benefits and recommendations.

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