The Consumer Acceptance of the Digital Banking Services in Romania: An Empirical Investigation

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Abstract: This paper explores the main factors that influence the consumer acceptance of digital banking services in Romania, focusing on students with both economic and non-economic backgrounds. The main purpose of this paper is to find the most significant advantages explaining the adoption of technology in the frame of the FinTech emergence in Romania, analyzing the correlations between education and Fıntech acceptance. First, the financial services delivered by the banking sector were analyzed following the new transformations of the financial sector, including the COVID-19 context and the rearrangements of the banking sector by financial performance. Second, the research hypotheses were tested using a questionnaire distributed among students, as the main propagators of financial innovation. The results suggest that there is a Pearson correlation between financial knowledge and the Fintech affinities. The cooperation between customers and financial institutions was detailed to find the perceived value of technology-associated features for the overall performance of the banks, measuring monetary and non-monetary sacrifices in the way students access financial services. The main finding suggests the evolving role of the financial technology for the new generation, beyond the rationale cost-centric determinants or the emotional sphere, which is strongly related to the employees' involvement with the company.

Key Words: bank, financial innovation, digital banking

1. INTRODUCTION

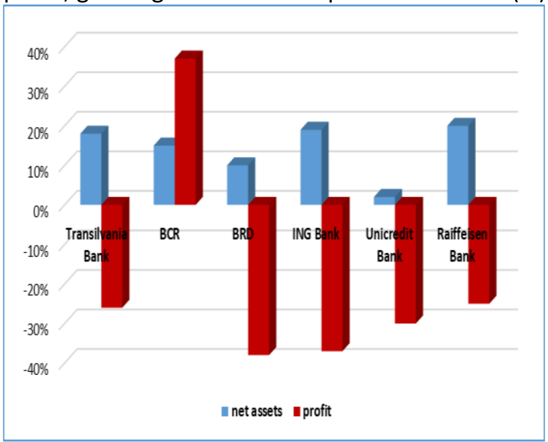
The present context generated by the COVID-19 pandemic has profoundly changed the banking sector, adding new features to the existing financial offer for the people forced to adapt to the digital era. The health crisis has amplified the digitization trend for both consumers and financial institutions, focusing more on the financial counseling process in the way to find complex solutions to the current needs. The remote work determined many of the repetitive activities to be included in chatbot systems, to improve a safe customer experience. At the onset of the COVID-19 crisis, the Romanian banking sector was on solid ground compared to the EU average in terms of capital adequacy, liquidity and provision of non-performing exposures. At the end of 2019, the average level of non-performing loans (NPL) was 7,2% in the Central and Eastern European countries (ECE), while the Romanian indicator was on a decreasing trajectory during the period 2014-2019 up to 4,1%.

The constant concern to maintain the quality of the loan portfolio was translated into a reduced level of NPL at the end of the year 2020 (3,83%), which was the minimum of the last decade. However, the NPL rate returned to growth in January 2021, rising to 3.9%, being influenced by sectoral trends such as hospitality, transport, or logistics. Some legislative measures have significantly delayed the negative impact of the pandemic on banks' balance sheets, the European Central Bank warning about the dynamics of asset quality in the second semester of the year 2021. To the same extent, the National Bank of Romania forecasts consistent bank losses generated by the increase of NPL rate up to 9,9% between June 2020 – June 2021.

The structure of the Romanian banking sector was dominated by the same economic entities (Banca Transilvania, Banca Comercială Română, BRD - Groupe Société Générale and ING Bank), the most significant change being related to the reverse order between Raiffeisen Bank and UniCredit Bank in 2020 compared to 2019, Raiffeisen Bank climbing the fifth position in the ranking by net assets. Another observation is that Transilvania Bank has taken a considerable advance over BCR, the two credit institutions being now separated by almost RON 22 billion, given that in 2019 the distance between them was just over RON 16 billion.

On the other hand, from the top five banks by net profit, only BCR has obtained an increase of the values achieved in 2019 (+37%), while the operating income increased to RON 3.54 billion (Figure 1). The total portfolio of net loans granted to the BCR customers increased by 7.4% in 2020, being supported by both retail and corporate segments. BCR reported 1.8 million users of internet banking and mobile banking, of which over 1 million active users for George, increasing by 43% compared to 2019. At BCR, 48% of all credit cards and 61% of all overdraft products are now granted through digital channels, while the number of transactions through George increased by 102% in 2020 compared to 2019. Almost 15 current banking products are available in the George-App, from money transfers, payments of bills, 100% online refinancing credit, 100% online credit card, 100% online overdraft or insurance. In 6 months since its introduction (October 2020), over 2.4 million appointments have been made through the access system in branches based on programming, which means approximately 20,000 per day, on average.

Figure 1. Financial institutions by net assets and profit, growing rate 2020 compared with 2019 (%)



Source: author's processing

In this context, the real digitization of the banking system must be sustained by digital skills and the integration of digital technology by enterprises. According to the Digital Economy and Society Index (DESI) 2020, Romania ranks 26th out of 28 EU Member States included in the ranking and performs best on the connectivity dimension. The human capital overall score was 33.2 (the EU average was 49.3), while 31% of the individuals have at least basic digital skills.

However, the COVID-19 pandemic has profoundly changed the customers' behavior, an ING study suggesting that approx. 43% of Romanians prefer to have access to as many payment options as possible, although they do not actively use them all. Cash payments are still at the top of Romanians' preferences, depending on the value of purchases. Therefore, for small daily purchases, 54.7% of Romanians prefer to pay cash, compared to the European average of 41%. For high-value purchases, 70% of Romanians prefer to pay by card, for security reasons. The data provided by Statista, before COVID-19 outbreak in Romania 45% of the respondents used cash, while after the health crisis only 21% of them use it. The Romanian credit institutions need to upgrade through strong digital foundations to anticipate the customers' needs and increase the user experience for further growth of the sector. The COVID-19 pandemic has acted as a catalyst between banks and FinTech companies, implementing long-lasting cooperation that has gradually become an opportunity with a common factor: innovation.

2. LITERATURE REVIEW

The digital transformation of the banking system is highly associated with the flexibility features of the financial services, where the innovation is integrated to interconnect banks and customers in a way that increases the added value of the financial institutions. Offering great availability, digital banking saves time for both consumers and credit institutions, providing tailored products, in a more convenient and adaptable context. The technology acceptance model proposed by Davis's (1989) suggests that the consumer intention to use new technology is mainly determined by the ease of use and its perceived usefulness, while other studies (Mangin et al., 2014; Aldás-Manzano et al., 2009) argue that the comfort cannot be the only reason for the rising acceptance of new technologies in the financial sector. They explain this tendency through the consumers' personality characteristics, relating the consumer behavior with a more complex set of determinants.

Jüngera and Mietznerb (2020) outline the significant influence of trust, transparency, and financial expertise to explain the German households to stay or switch from traditional banks to FinTechs, while the price does not appear to influence the switching probability. The same authors argue that "younger people have a greater affinity for digital innovations" (Jüngera and Mietznerb, 2020, p. 4), becoming the main pillar to explore the students' perceptions of digital banking services in Romania. In line with this finding are also the studies of Choudrie and Vyas (2014) and Choudrie et al. (2018), suggesting low levels of digital banking adoption by older adults. Using a questionnaire survey among the Romanian consumers in retail banking, Baicu et al. (2021) emphasize the impact of COVID-19 pandemic on consumer behavior through the Technology Acceptance Model (TAM), confirming its validity.

The adoption of digital technologies was also outlined by Melamedov (2020) and is considered a long-term solution that will be applied after the COVID-19 pandemic more effectively. In this sense, the cooperation between the traditional banks and the Fintech companies can be perceived as a survival strategy, helping the traditional banks to provide new services using digital channels of communications. The pandemic crisis has significantly changed the trust concept, which is depicted by some authors into different categories: contractual trust, competence trust, and goodwill trust (Anneli Järvinen, 2014; Sako, 1992). This paper explores the dependence of consumer attitudes towards digital banking services and elements of trust, including security and ease of use. According to Baicu et al. (2021), the majority of the respondents (49.9%) trust banks to great extent, while 36.9% of them have great confidence in banks.

The present paper will focus on three main determinants of customers' acceptance of the digital banking services in Romania: (1) trust - security and privacy issues; (2) ease of use/accessibility and (3) technological infrastructure. Trust becomes one variable of primary importance during the pandemic as the imposed distance restrictions have been limited the accessibility of financial services through conventional means, paving the way for a wide range of online solutions or all-in-one solutions. The results of the survey conducted by Baicu et al. (2021) suggest that during the COVID-19 crisis, approx. 58% of the respondents have never visited the physical locations of their bank, while almost 26% of them visited their bank only once a month. Reversely, the same research study reveals that even in the Romanian metropolitan area, the use of cash is still very important for the population.

In terms of digital banking, the COVID-19 pandemic has propelled the banking system into the center of the crisis, sustaining the entire economy due to the increased mobility of remote banking. Digital banking triggered extraordinary opportunities for a large number of people who discovered the comfortable part of managing money on their own. The research model suggests that the quality of the internet connection (speed and reliability) has a significant role in diminishing the gap between Romania and Western European countries in terms of digital banking. In line with the results of Jüngera and Mietznerb (2020), that price sensitivity appears to have no significant influence on the intention to switch from a bank to a Fintech company, suggesting the evolving role of the financial technology for the new generation, beyond the rationale cost-centric determinants or the emotional sphere.

3. METHODOLOGY

Starting from the literature review regarding different determinants for consumer behavior related to digital banking services, we developed a questionnaire based on open questions, closed-response questions, multiple choices or a five-point-Likert scale. Due to the strong affinity of younger people for digital innovations, we have focused on students with both economic and non-economic backgrounds, as the main propagators of financial innovation. The data collected from 656 respondents in the period April 2021 – May 2021 include sociodemographic variables and self-assessed levels of tolerance for trust or accessibility issues, being related to the financial background of the respondents. We were interested in the main factors that determine the respondent's switch from traditional banks to Fintech companies and the influence of security and privacy, ease of use and technological infrastructure for such tendency. Three research hypotheses were tested using the SPSS software:

H01: There is no correlation between price and the intention to switch to a Fintech company.

H02: Perceived accessibility features of the financial services have a positive influence on consumer acceptance of digital banking.

H03: There is a strong correlation between financial knowledge and the attitude towards digital banking.

The descriptive analysis included in Table 1, highlights the following results for the gender indicator: 33.4% men and 66.6% women. According to the project's goals, the majority of the respondents were included in the age group 18-25 years (82.2%) and 26-35 years (10.2%). This is in line with the literature review outcomes and the main assumptions of the paper, which describes students as the main propagators of financial innovation.

The online questionnaire was distributed in two universities from Constanta, one of the most important Romanian university centers. A balanced distribution between economic (46.5%) and non-economic (53.5%) educational background allows the achievement of statistical representative results to determine if there are some differences in the attitudes of the banking clients depending on the level of financial knowledge. Most of the respondents were urban residents (71.8%), while 28.2% of them were rural residents.

Table 1. Descriptive analysis of the sample

Characteristics of the sample		%
Gender	Male	33.4%
	Female	66.6%
Age	18-25 years	82.8%
	26-35 years	10.2%
	36-45 years	4.9%
	More than 46 years	2.1%
Educational profile	Economic	46.5%
	Non-Economic	53.5%
Residence	Urban	71.8%
	Rural	28.2%
Digital banking	Adopters	92.4%
	Non-adopters	7.62%
FinTech	Adopters	21%
	Non-adopters	79%

Source: author's compilation using the questionnaire

The comparative study regarding the consumer acceptance of the digital banking services and FinTech services reveals that 92.4% of the respondents were digital banking adopters and 7.62% of them were non-adopters, while for the FinTech adoption the figures are lower, with only 21% of FinTech adopters and 79% non-adopters. The next section will explore the main factors that influence these findings, testing the research hypotheses to provide empirical evidence about the financial technology emerging development in Romania after COVID-19 pandemic.

4. RESULTS AND DISCUSSIONS

This paper explores the consumer acceptance of digital banking services in Romania, emphasizing at the same time the attitudes towards the FinTech revolution. In this context, three research hypotheses were tested using the SPSS analysis.

H01: The price influence is not the primary determinant of the intention to switch to a Fintech company.

The descriptive statistics suggest that 79% of the respondents are not currently using Fintech services, while only 21% of students have already used them. According to the frequency analysis, most of the respondents have mentioned the quality of the services to explain a possible switch from traditional banks to the Fintech companies, while the price is still important for a significant number of customers (127 individuals). However, the relative figures reveal a much interesting situation: quality (22.6%), price (19.4%), speed (15.4%), and ease of use (13.4%). Thus, the price role as the major determinant for switching from banks to Fintech is no longer valid, emphasizing a more sophisticated consumer that can find a balanced ratio between the most significant features of a financial product. The main finding suggests the evolving role of the financial technology for the new generation, beyond the rationale cost-centric determinants. While before the COVID-19 pandemic the financial constraints were considered inhibiting factors for the financial customer behavior (Hoehle et al., 2012), the results suggest a more elastic attitude towards price, in favor of quality, speed and ease of use.

On the other hand, the emotional sphere was totally neglected in the new "normal" generated by the health crisis. Even if the financial services were associated with building a strong relationship between financial institutions and clients through the employees' involvement with the company and the clients' propensity to seek the experts' assistance, the post-pandemic response to the financial industry in terms of information sufficiency, clarity and ease of use suggests an adjusting mechanism that replaces the human capital with more tailored financial products.

H02: Perceived accessibility features of the financial services have a positive influence on consumer acceptance of digital banking.

A Pearson correlation coefficient was used to test the relationship between satisfaction with the bank (Satisfaction_bank) and the three variables: information sufficiency of digital banking services for the current needs (Sufficiency_inf), clarity in the online information provided by the bank (Clarity_inf), and digital banking ease of use (Ease_of_use). The test results revealed positive correlations between these variables with medium intensities (Table 2). The null hypothesis is not confirmed.

Table 2. Pearson Correlations on the satisfaction level

		Ease_of_use	Sufficiency_inf	Clarity_inf	Satisfaction_bank
Ease_of_use	Pearson Correlation	1	,818**	,815**	,381**
	Sig. (2-tailed)		,001	,001	,001
	N	656	656	656	656
Sufficiency_inf	Pearson Correlation	,818**	1	,843**	,435**
	Sig. (2-tailed)	,000		,000	,000
	N	656	656	656	656
Clarity_inf	Pearson Correlation	,815**	,843**	1	,424**
	Sig. (2-tailed)	,001	,001		,001
	N	656	656	656	656
Satisfaction_bank	Pearson Correlation	,381**	,435**	,424**	1
	Sig. (2-tailed)	,001	,001	,001	
	N	656	656	656	656

**. Correlation is significant at the 0.01 level (2-tailed).

Source: author's compilation using the questionnaire

H03: There is a positive correlation between financial knowledge and the attitude towards Fintech companies.

A Pearson correlation coefficient was used to test the relationship between financial knowledge (Fin_knowledge) and the trust in fintech (Trust_Fintech). The test results revealed a slight correlation between the two variables, r = 0.125, n = 656, p = 0.002. There is a positive effect of financial knowledge on Fintech adoption, as the next step in the evolutionary dynamics of the sector. Thus, individuals that can understand the financial products better express less Fintech reluctance, developing a greater affinity for these companies (Table 3).

Table 3. Pearson Correlations between Financial knowledge and Trust in FinTech

		Fin_knowledge	Trust_Fintech
Fin_knowledge	Pearson Correlation	1	,123**
	Sig. (2-tailed)		,002
	N	656	656
Trust_Fintech	Pearson Correlation	,123**	1
	Sig. (2-tailed)	,002	
	N	656	656

**. Correlation is significant at the 0.01 level (2-tailed).

Source: author's compilation using the questionnaire

On the other hand, there is a weak correlation between the digital banking users (Ebanking_user) and the Fintech user (Fintech_user). A Pearson correlation coefficient was used to test this relationship, outlining a positive correlation and r=0.120, n=656, p=0.002. The null hypothesis is not confirmed. Thus, clients which are already using digital banking services are more determined to increase their financial activity by using the services provided by a Fintech company. However, these two entities are connected through a cooperation link, rather than competitive relations. The current phase suggests that they are not excluding each other, Fintech companies playing an enhancer role for the whole financial industry.

The main risk of the current digital context is highly associated with the human capital. Romania is at the end of the ranking by digital competencies among the EU Member States. The major constraints related to digital skills development reveal an unsatisfactory result: even if Romania has one of the best performing IT industries and high Internet speed, the human resources fail to reach their potential.

5. CONCLUSION

At the onset of the COVID-19 crisis, the Romanian banking sector was on solid ground compared to the EU average in terms of financial stability, but with major delays in digital banking implementation. The pandemic has profoundly changed the customers' behavior, the data revealing a significant decrease in using cash and a correspondent increase in terms of trust in digital banking services. The health crisis has acted as a catalyst between banks and FinTech companies, in a way that explores more the opportunities and creates fewer threatening products. Digital banking saves time for both consumers and credit institutions, providing tailored products, in a more convenient and adaptable context. In line with the technology acceptance model (Davis, 1989), we found a high correlation between the satisfaction level and the ease of use, along with other determinants of consumer acquisition response. The paper confirms the results of Jüngera and Mietznerb (2020), outlining the significant influence of trust, transparency and financial expertise to explain the decision to stay or switch from traditional banks to FinTechs, while the price does not appear to influence the switching probability.

Three research hypotheses were tested, revealing no correlation between price and the intention to switch to a Fintech company (H01), a positive influence of perceived accessibility features of financial services on consumer acceptance of digital banking (H02), and a positive correlation between the financial knowledge and the attitude towards digital banking (H03). Related to digital banking, we have found medium correlations between the satisfaction with the bank's digital offer, on the one hand, and information sufficiency, clarity and ease of use, on the other hand. The descriptive statistics suggest the major role of quality among the most mentioned features of Fintech, emphasizing a more sophisticated client which sets its goals beyond the rationale cost-centric determinants. However, most of the respondents maintain their fidelity with traditional banks, regardless of the potential advantages offered by the Fintech enhancers.

Starting from the idea that there is a strong affinity of Millennials for digital innovations, we have focused on students with both economic and non-economic backgrounds to test the correlation between financial knowledge and the attitude towards Fintech companies. The Fintech users are the most sophisticated customers, which have already depicted the digital banking offer requiring redesigned strategic positions based on innovations. The main results suggest that there is a slight correlation between financial knowledge and trust in Fintech, the economic background creating the premises for activating an innovation circle: financial knowledge – digital banking user – Fintech user. Financial knowledge can be a strong differentiator in the financial market, providing the necessary tools to compare the products and engaging the customer in a more transparent relationship with the bank/FinTech company. Digital disruption in banking is just the new phase of the next provocative period, fostering innovation in a business environment where the customer will certainly be the dominant player.

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