

The Digital Transformation of the Finance Industry in Romania

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Abstract: The present paper outlines the online banking penetration of the current financial market, the investment volume in FinTech, its potential to accelerate the digital transformation in the banking sector and the main premises of the FinTech development in Romania. The main objective of the paper was to explore the customers' awareness related to digital services and FinTech and to test their trust in such solutions using both analytical and descriptive methods. The value of the paper was amplified by the individual customers' perspective related to the financial industry transformation, which was extremely relevant for the main assumptions of the current research. There were analyzed the clients' opinions regarding disruptive technologies and their attitudes towards the digital transformation of the financial sector in Romania. The results of the paper provide a clear overview of the Romanian banking sector in terms of digital innovation from the clients' perspective, relying on the ratio between the main FinTech advantages and risks. The paper reveals a surprisingly competitive mechanism between banks and FinTech corporations, sustained by a high level of awareness of FinTech services among customers and a reactive position of the banks which empowers them with more authority and expands the market.

Keywords: financial technology, digitalization, innovation, banking services

1. INTRODUCTION

The post-crisis economic context and the failure of the traditional financial institutions to provide a reliable transactional framework draw attention to new forms of banking and the emergence of Fintech companies, as an important element of competition on the market that enhance the digital transformation of the financial sector. The instability factors that have caused the 2008 crisis were connected to the mistrust issues of the banking clients and a decreased level of transparency, remodeling the banking system through a reconstruction process focused on the online services. The banking clients refined the system, requiring more transparency and payment mechanisms that can be made in comfortable ways.

Fintech companies are using technology and innovations in order to provide financial services to the customers, leading to a new industry where traditional banks are both competitors and partners. Moreover, the basic perception of Fintech companies is that they will not replace the traditional financial institutions, emphasizing their willingness to collaborate (Duna & Ilioiu, 2017).

On the one hand, the main advantage of such cooperation for traditional financial institutions is the opportunity to stimulate and profit from the digital transformation. Fintech companies have the potential to create better products for the banking clients, improving efficiency and decreasing prices, incorporating "the whole plethora of technology that is used in finance to facilitate trades, corporate

business or interaction and services provided to the retail consumer" (Micu & Micu, 2016, p. 380). On the other hand, financial technology (FinTech) is also related to associated risks, such as: high financial volatility, cybercrime issues or data and consumer protection (Manta, 2018).

FinTech is currently well represented in the following fields: payment systems, financial research, insurance, crowdfunding, investment management, deposit and lending. Alt, R. and Puschmann, T. (2012) categorization is based on four main criteria: (1) according to the financial sector, (2) the business process which it addresses, (3) the interaction type and (4) the customer segment. In the same vein, Haddad and Hornuf (2018) categorize the Fintech companies into nine types of business, according to the field of action: (1) asset management, (2) exchange services, (3) financing, (4) insurance, (5) loyalty programs, (6) payments, (7) regulatory technology - regtech, (8) risk management and (9) others.

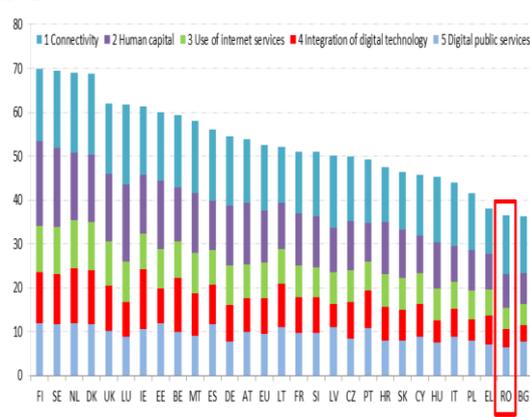
Despite the opportunities provided by the FinTech industry in Romania, few research papers are focused on the subject, without a clear investigation of the customer's perceptions regarding the digital transformation of the finance industry in Romania. This paper explores the gap, starting from the customers' awareness related to digital services and FinTech and then, testing their trust in such solutions. The clients' opinions regarding disruptive technologies were analyzed in order to identify the consumer involvement in the process, considering the consumer sophistication features.

While the main premises of the Fintech industry are the financial inclusion of the population and the infrastructure, we will outline the online banking penetration of the current financial market using a large set of indicators that reveal the current status of the FinTech development in Romania and the traditional financial institutions adjustment to the new technological trends.

2. DIGITALIZATION IN THE ROMANIAN CONTEXT

We have started the analysis by investigating the technological infrastructure available now in Romania, as a precondition of the future digital development in the financial industry. The Digital Economy and Society Index (DESI), which is a composite index that summarizes the digital performance of EU member states, relies on five main dimensions: (1) connectivity, (2) human capital, (3) use of Internet services, (4) integration of digital technology and (5) Digital Public Services. Figure 1 shows the unfavorable rank of Romania (27) in the DESI 2019, with a score of 36.5, one of the lowest scores on the overall index (EU score: 52.5). The Romanian rank remained stable compared to the previous year, despite the slight improvements of almost all dimensions, due to the slow progress. The Connectivity dimension has the best performance, due to the fast broadband coverage (76% households), fast broadband take-up (55% households), ultrafast broadband coverage (75% households) and ultrafast broadband take-up (45% households). Except the fast broadband coverage, all other mentioned criteria were above the EU average: 41% households - fast broadband take-up, 60% households - ultrafast broadband coverage and 20% households - ultrafast broadband take-up.

Figure 1. Digital Economy and Society Index – DESI 2019



Source: <https://ec.europa.eu/digital-single-market/en/scoreboard/romania>

The human capital perspective suggests limited opportunities for the Romanian people aged between 16 and 74, the values remaining lowest among the EU member states. Only 29% of Romanians have basic digital skills and 10% individuals have advanced digital skills, well below the European Union average for the same indicators (57% for basic digital skills and 31% for advanced digital skills).

Romania has also the lowest score (32,9) for the use of internet services, while the EU average score is 53,4. According to the figures included in the DESI 2019 report, 21% of individuals have never used the internet and 68% of individuals aged 16-74 are Internet users, compared to the EU average of 83%. An interesting fact is that Romanians prefer to use the Internet services mainly for social networks (86% of the internet users), ranking first in the EU (65% - the EU average).

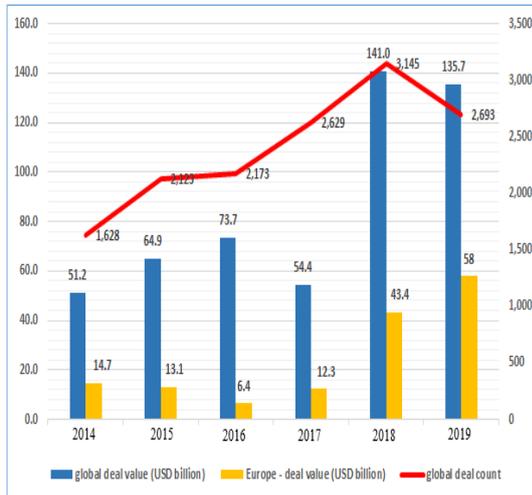
Romanians are engaging in video calls (51%), music, videos, games (63%) or read the news (69%), while the activities involving their financial resources are far below the EU average. The online shopping is practiced with less frequency than in the rest of the EU (26% of internet users in Romania and 69% of internet users – the EU average), while selling online attract only 5% of the internet users, compared to EU average (23%). In this respect, only 10% of the internet users trust in digital technology to do online banking, while the EU average is about 64%.

For integration of digital technology and digital public services, there are also low scores, suggesting the peripheric position of Romania for the use of Cloud services (7% of enterprises), electronic information sharing (17% of enterprises), e-commerce turnover (5% SME turnover). However, Romania ranks 14th for big data and seventh for e-Government users, while for the e-Health services the figures are closed to the EU average.

According to the KPMG International, the global Fintech investments in 2019 hit USD 135.7 billion and 2,693 deals, demonstrating an increasingly competitive market and a consolidation of the Fintech segments, despite the moderate decline of the investment volume. Figure 2 outlines an increasingly interest for the Fintech industry, suggesting that the investment volume grew steadily from USD 51.2 billion in 2014 to USD 135.7 billion in 2019. In Europe, the growth of the Fintech investment volume was boosted by the Worldpay's acquisition, with digital banking and payments as increasingly attractive areas for investors. This interest is also reflected in the consumer's preferences, according to the study conducted by Gulamhuseinwala et al. (2015) on a sample of 1485

respondents. More than 45% of the respondents aged between 25 to 34 were willing to use Fintech products in the foreseeable future and more than 25% of them were using two or more products provided by the Fintech companies.

Figure 2. Total investment activity in FinTech – global vs. Europe (2014-2019)



Source: authors' compilation using data from <https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/02/pulse-of-fintech-h2-2019.pdf>

Fintech's expressions in the Romanian market are led to the cashless payments, robo-advisory services, peer-to-peer credit and crowdfunding platforms, expanding the public's demands to the next level. PayPal, Revolut or ApplePay are becoming serious competitors for MasterCard or Visa, while the emergence of cryptocurrencies like Bitcoin, Ethereum or Litecoin has rapidly changed the financial system through the blockchain features: transparency, decentralization and consensus.

Volt - Instant money transfer App, a product of Volt Finance in cooperation with Mastercard, Visa, Libra Internet Bank and Romcard is an alternative for mobile banking, which is faster than a regular bank transfer. The permanent functionality is completed by a friendly interface, Volt being simpler than an electronic wallet.

Pago is an easily to manage application recommended by Visa and Banca Transilvania that facilitates the payment of utility bills in a secure way, through an advanced cryptography system. It also offers the possibility to electronic upload the prepaid cards, to purchase RCA policy or any kind of insurance

Instant Factoring facilitates the development of SMEs by turning the invoices into liquidity in less than 24 hours through the blockchain technology. Currently, the application is available only in RON,

the eligibility response is sent in max. 2 hours and the client has a permanent access to all the details of its account. The platform that provides innovative financing solutions for small businesses was the winner of Business Review Awards 2019 at the section Innovation in Technology.

Revolut, the British Fintech launched in Romania in May 2018, is another digital financial service alternative with a record growth in the local market. In February 2020 Revolut announced one million users in Romania, our country being the third largest market for the company. Romanian users made over 58 million transactions since its entry on the Romanian financial market, with a total value exceeding EUR 3.8 billion. The average age of Revolut users in Romania has increased from 32 to 34 years and most come from large urban areas. Surprisingly, despite the general mistrust of the Eastern European customers, the Romanian public was more receptive, Revolut building a network based on recommendations.

Revolut allows its users to open a current account in the application in few minutes, hold and exchange currencies using the interbank exchange rate, make free national/international transfers, and spend money worldwide without hidden fees and commissions, using a VISA or MasterCard contactless card. In 2020, Revolut has also launched the junior version, dedicated to the children and their parents, that aims to promote healthy financial management habits from an early age, under the guidance of a responsible adult.

Various start-up companies exploiting the customer's need to obtain as many financial benefits as possible have transformed the country in a potential attractive destination of Fintech investments. They have also changed the client's financial habits, offering them a sort of independence in managing their money and a much wider range of opportunities to choose from.

3. MATERIAL AND METHODS

After developing an analysis based on the literature, annual reports and statistical data, we consolidated our research by conducting an empirical study based on a questionnaire. The research presents an overview of the customers' perceptions related to the Fintech industry and the level of banking digitalization.

We used an online version of the questionnaire distributed through email addresses and other media tools (as a Google form link). The distribution of questionnaires was employed between March 2020- May 2020 in Constanta County and we

obtained 275 valid questionnaires. The research involved a qualitative analysis of several questions' answers regarding aspects of using digital banking and fintech innovations and testing three null hypotheses.

Data processing was done using SPSS version 23.

3.1. The questionnaire' design and the sample

The questionnaire was designed to obtain a relevant insight on the consumer behavior related to the online banking services, offering a picture of perception regarding the digital banking services and the fintech companies. The questionnaire was divided in two parts: (1) questions related to the services offered by the traditional financial institutions and (2) questions related to the general awareness about the Fintech term, its applicability and features.

The factual questions were blended with the interpretative ones and there were formulated direct questions (*What is the bank / banks you are currently cooperating with?*) or open questions (*Please specify the measures taken in this regard*), the topics addressed being organized in an easy way, stimulating the respondent to formulate opinions to support the research hypotheses. The questions directed to identify the level of knowledge about Fintech terminology (*Have you heard about the term "FinTech"?*) were followed by control questions regarding the source of this information (*Where did you first hear the term FinTech?*), using single choice, multiple choice, multiple choice grid or Likert scale.

Moreover, the questionnaire included questions regarding the emotional context (*To what extent do you feel that the bank you are cooperating with has adapted its services to your needs in the context of the COVID-19 pandemic?*), the expectations (*Do you think the FinTech industry will grow in the next three years?*) or the respondents' experiences (*How often do you use the following payment methods: cash, debit/credit card, contactless debit/credit card, digital banking?*).

The consistency of the methodological tools used in this paper, together with the variety of the analyzed indicators (the use of internet services, number of individuals with basic/advanced digital skills, number of individuals that use online banking, global Fintech investments, etc.) allows clear conclusions about the direction of the financial industry in Romania and the intensity of the digital transformation in banks. Two major themes (traditional banks and Fintech companies) were

related in order to identify the customers' perceptions regarding the innovative technologies and their attitudes towards the digital transformation of the financial sector in Romania, with a special focus on trust as a key factor of sector development and prerequisite of its appearance.

There were collected 275 valid questionnaires, from 214 women (65.1%) and 61 men (34.9%), aged between 18 and 65. The distribution of sample by residence divide the respondents into the following categories: 176 individuals from urban population (64%) and 98 individuals from rural population (36%).

4. HYPOTHESES, RESULTS AND DISCUSSIONS

We formulated and tested three null hypotheses:

H01: There is no correlation between the level of trust that consumers of banking services in Romania have in digital banking and the sufficiency of the digital banking services accessed by the respondents in relation with their current needs.

A Pearson correlation coefficient was used to test the relationship between the two variables.

The test results revealed a positive correlation between the two variables, $r = 0.370$, $n = 275$, $p = 0.001$.

The null hypothesis is not confirmed.

H02: There is no correlation between the level of trust that consumers of banking services in Romania have in digital banking and the level of satisfaction with digital banking services for the respondents.

The test results revealed a rather strong positive correlation between the two variables, $r = 0.519$, $n = 275$, $p = 0.001$.

The null hypothesis is not confirmed.

The result demonstrate that trust is a determinant of customer satisfaction with digital banking services for the respondents

H03: There is no correlation between the level of trust that consumers of banking services in Romania have in digital banking and the level of trust that these consumers also have in the fintech companies' financial services.

The test results revealed a slight positive correlation between the two variables, $r = 0.222$, $n = 275$, $p = 0.001$.

The null hypothesis is not confirmed.

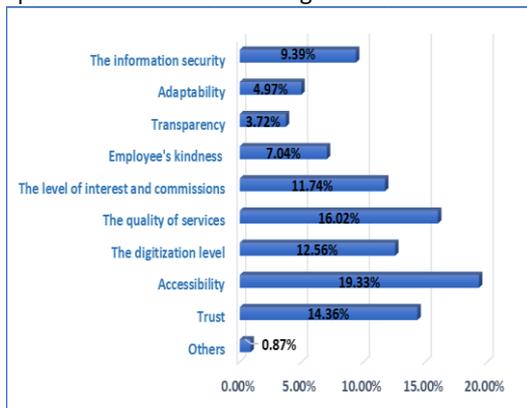
The result for the third hypothesis shows that the trust in the digital banking services it not necessarily

means that those consumers will be willing to access financial services offered by the fintech companies even the tool to offer such services is identical for banks and fintech companies – the internet.

In order to deepen the research, we analyzed some qualitative aspects from the answers offered to the questions from the questionnaire used.

An investigative direction, as can be seen in the Figure 3, is represented by the factors influencing the consumers of banking services' choice for a certain bank to collaborate with.

Figure 3 The factors influencing the choice for a specific bank to use banking services



Source: authors' compilation of data retrieved from questionnaires

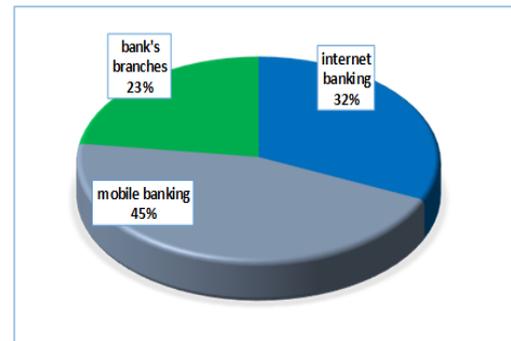
Referring to all the banking products used by consumers, the most frequently mentioned factor was accessibility, with a percentage of 19.33%. The trust and the quality of banking services are the following specified factors and only 12.56% of the answers considered that the level of digitalization influenced the decision regarding a specific bank. Transparency is the least considered factor in choosing the bank.

Asked about the reasons for using internet banking, 233 of the respondents stated that accessibility is the most important factor.

Regarding the purpose of using digital banking services, 196 of the respondents mentioned the payment of bills as the main reason, of which 90 stated only this purpose and 106 also mentioned the domestic and international transfer of funds and the financial assistance. Consistent with the conclusion of the first part of the study on the basic digital skills of the population in Romania, the answer to the question on the frequency of use 140 of the respondents stated that they use monthly and only 64 mentioned using such services weekly or daily.

In order to cover the continuously preoccupation of both academia and bank managers on balancing the channels to provide banking services as payments or loans, we asked about the customers' option when dealing with banking services. Just 23% of the respondents mentioned visits to the bank' branches, higher percentages were registered for the use of internet banking and mobile banking (more than 40%).

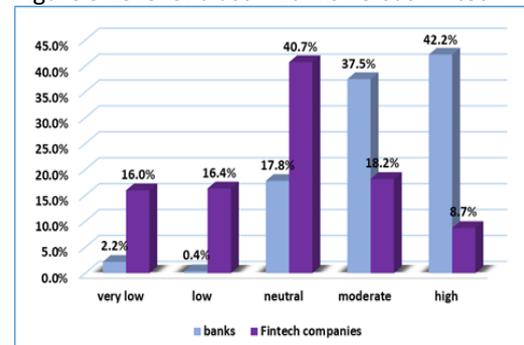
Figure 4 Channels to access the banking services



Source: authors' compilation of data retrieved from questionnaires

As we shown in the previous sections of the paper, the recent developments of the Fintech companies services in Romania encourages the conclusion that many customers of traditional banking services accessed through digital banking will confidently access the innovations brought to the financial market by Fintech companies. comparing the level of trust in the two categories of financial services from the answers given in the questionnaire, as shown in Figure 5, we can see that, for now, trust in banks is much higher in terms of digital banking services compared to those offered by the Fintech companies. 42% of respondents credited bank with a high level of trust comparing with only 8.7% for the Fintech companies. Asked when they discovered the financial services offered by the Fintech companies most of the respondents (182) mentioned the year 2019.

Figure 5 Level of trust – Banks versus Fintech



Source: authors' compilation of data retrieved from questionnaires

That is why the analysis of the level of trust in such services compared to the digital banking services that customers have known for years must be analyzed in the context of the novelty for the public.

Investigating the main cause of concern about the use of financial services offered by the Fintech companies, we found that in the first place (83 respondents) is the level of security of their money and investments, then the lack of experience of these service providers (36), the cyber-attacks (28) and the customer data protection (27) among others.

Among the reasons why respondents would access the financial services of the Fintech companies most often was mentioned the quality of services (73), followed by the accessibility as ease of use (46), and tariffs (32). Only 18 of the respondents mentioned the speed with which such services are provided.

Regarding the Fintech companies they know of, only 52 of the respondents stated that they do not know any of them, 222 referred to at least one of those present on the Romanian market, among which 125 mentioned only Revolut (97) or Revolut and others (28), confirming the conclusions from the analysis of the financial services offered by Fintech companies in Romania, from the first part of the paper. More than 50% of the respondents also declared that, in their opinion, the Fintech industry will grow in the new three years.

5. CONCLUSIONS

Our study is just a first step in the direction of broader research to investigate the consumer preferences for new ways to provide banking services compared to the penetration of a new and highly dynamic industry - that of traditional financial services provided a decade ago only by the banks and offered today by companies that develop disruptive innovative technologies.

In order to create a correct image of the level at which Romanian consumers can access digital financial services regardless of their provider, we performed an analysis of the degree of digitalization of the Romanian society compared to the European level. Unfortunately, the conclusions we have reached show that Romania of the 21st century is at the lowest level of the European ranking in terms of digitalization, but especially the use of digital tools for managing financial resources and accessing financial services. If in terms of connectivity we are above the European average in terms of digital skills are on the lowest positions with only 29% of the population having basic digital skills and 10% of the population having advanced digital skills.

In parallel with these realities, we cannot ignore the fact that in an extremely short time, fintech companies like Revolut have reached 1 million users in Romania and their average age is only 34 years. On the other hand, the growth of several Romanian companies that offer such financial services shows that the national market is not only a source of new customers but is ready to give providers on this extremely dynamic niche.

The questionnaire-based research investigated issues regarding the level of confidence that consumers have on the one hand in terms of digital banking services and on the other hand in terms of financial services provided by Fintech companies, the criteria used to choose a specific bank, the types of banking services often accessed by the customers and the channels preferred by them to receive these services.

Using the Pearson correlation coefficient to verify three null hypotheses we came to the conclusion that there is a positive relationship but of different intensities between the trust that consumers have in digital banking services, the level of sufficiency with their current digital banking services, the satisfaction they have with these services, and the trust which it provides to the services offered by fintech companies.

The research carried out in this paper showed on the one hand the customers' interest for digital banking as well as for the financial services offered by Fintech companies but also the limited penetration of these services in terms of frequency of use and the complexity of services accessed.

The lack of the basic digital skills, the concern regarding their money' security and issues regarding data protection are reasons, in reality, for a use of digital banking services still quite low on the Romanian market but the accessibility and the low transaction costs seem to be important motivations for the growth of the two segments analyzed in our study.

In order to obtain consistent and relevant results for the academic environment and equally for the management of such service providers (banks and Fintech companies), we intend to develop a future research in order to investigate the satisfaction of the consumer of digital banking services in terms of its determinants and to extend the research to larger populations.

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