

**SCTMG 2020****International Scientific Conference «Social and Cultural Transformations in the  
Context of Modern Globalism»****DIGITAL TECHNOLOGIES IN FINANCIAL RELATIONS OF  
POPULATION IN RUSSIA**

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***Abstract***

Digitization transforms economies and financial systems in the world. Financial relations undergo digital changes. Providing and consuming financial products and services, financial transactions are implemented with digital (electronic and non-cash channels), the financial products and services become digital themselves. Various digital technologies transform the production of financial services; until transformation of the credit-financial agent model. Financial digitization requires three conditions: technological opportunity to receive and consume digital financial products and services that is a certain gadget to surf the Internet; satisfactory level of digital and financial literacy. The purpose is to study the indexes, initial conditions and factors of digital technologies application in financial relations for the Russians, and determine problems whose solution will enhance efficiency of financial digitization in Russia. These problems are: conditioning full transfer of currency into non-cash form (electronic) format; legitimization of digital financial innovations in Russia, such as blockchain, crypto-currency, token, mining, electronic quazi-money and others; establishing partnership between specialized credit-financial agents and fin-tech companies and big-tech firms; harmonizing digital financial products and services inter se.

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## **1. Introduction**

Digital technologies are becoming a part of our life. Key digital technologies demanded in the financial sphere are: cloud computing, new technologies for big data work and business analytics, cloud record systems, artificial intelligence technologies and computer-aided instruction, augmented reality, virtual instruction, robotics, automation, algorithmization, the Internet things and connected devices, remote desktop technology, on-line banking, mobile banking, biometric identity, blockchain technology and others.

## **2. Problem Statement**

Studying digital technology application in financial relations of the population has some limitations due to the young age and underdevelopment of the household finance science itself (Campbell, 2006; Mytareva, Grigoryeva, & Arkannikov, 2019) as well as ambiguousness of understanding and measuring digital economy and technologies, absence of comparable statistics on the structure and dynamics of financial transactions in Russia in all segments (banks, insurance companies, pension funds, stock market, discretionary management and others), and those carried out with digital technologies. There are data of sociological studies conducted by the analytic centre NAFI, on measuring financial and digital literacy of population in Russia, estimating consuming financial services both by people and credit-financial organizations.

In digital economy traditional channels of receiving and using cash income is digitalized. Instead of using cash, in digital economy people are involved into non-cash currency circulation. As a result, not only receiving and spending money are digitalized (become electronic and remote), but production, promotion, selling, buying and applying financial products and services are adapted to digital technologies. It is important to understand that “digital transformation requires new ways of operation but not only new technologies” (Danoesastro, Freeland, & Reichert, 2017, para 3).

Experts note that thanks to digital technologies full availability of financial services is provided when population has quality reasonable priced financial services by a convenient way and respect to the consumer (Stakhovich & Ryzhanovskaya, 2013). Digital technologies make financial relations convenient, available, quick and clear, but demand sufficient level of the equipment, high level of digital and financial literacy.

## **3. Research Questions**

For the consumers to use digital technologies when receiving and spending money (including consuming, saving and investments), it is necessary to introduce corresponding innovations and technologies in to production, provision, selling digital financial products and services and their post-selling maintenance. On the other hand, consumers should have gadgets with the Internet access. Applying digital technologies in financial relations of population is only the top of the technological iceberg, mediating preliminary introduction of digital innovations into activity of all participants of the financial market.

The specific feature of this process is asymmetry of information for the participants of the financial transaction on the level and quality of the technological preparedness of both sides. Besides, both credit-financial organization and a consumer of its financial services have different abilities to process and systemize “hard” and “soft” information (Liberti & Petersen, 2018).

#### **4. Purpose of the Study**

The purpose is to study initial conditions of applying digital technologies in financial relations of the Russians.

The study design includes: 1) estimating the Internet penetration into financial relations of the Russian people which is necessary as a technological medium of digital financial Internet transaction is precisely the Internet; 2) analyzing current levels of the financial and digital literacy of the population that allows estimating preparedness to the effective choice and consumption of digital financial services and products; 3) determining key issues arising when applying digital technologies in financial relations of the Russians, whose solution will press forward the process under study.

#### **5. Research Methods**

The methods of analysis and synthesis, tabular and comparative methods, simple factor analysis, and the results of the sociological surveys, conducted by NAFI have been used.

#### **6. Findings**

##### **6.1. The Internet penetration into the financial relations of the Russian**

According to the data, in 2019 Russia took the 8<sup>th</sup> place in the world by the number of the Internet users (109.5 million of users) (Sutkina, 2019). By the estimation in 2018 year per every 100 citizens there were 21.7 subscribers of the hard-net wide format Internet and 86.2 people with a mobile wide format access to the Internet (to compare – hard-net Internet is used by 32.7 people out of 100, and a mobile one is used by 11.2 people on the global scale). All together in 2018, 76.6 % of Russian households had the Internet access (which is higher than the worldwide average index 57.8 % households), which equals 63 % of the grown-up population. 90 million Russians use the Internet (74 % of the whole population in the country), only mobile Internet is used by 32 million, whereas 73 million people have the Internet access (61 % of population).

According to the 2018 data 40 % of people in Russia use mobile bank applications, 31 % buy goods in Russian internet shops, 17 % in foreign Internet shops, 24 % pay bills and fines via the Internet, 12 % of the Internet users have the Internet banking and 10 % have a digital wallet.

##### **6.2. Financial and digital literacy of Russians**

In 2018 the financial literacy of the Russians was at the level of 12.12 points (at maximal 21 points), our country among the G20 (“Great Twenty”) took the 9<sup>th</sup> place (herewith the average level of the financial literacy in G20 countries is 12.7 points).

The current level of the financial literacy of the Russians is 60 points on the 100 rating scale, that is 60 % from the maximal, which is comparable with the level of the financial literacy in 57.7 % from the maximal possible. NAFI research evidences that about 66 million people (45 % of the population) have a high level of the financial literacy.

The level of the financial literacy is influenced by the sex, age, place of residence and even employment.

Till 30 years the level of the financial literacy increases and reaches its maximum (12.06 men and 12.18 women), in this state it remains till 45 years, than it decreases (it decreases quicker in men then in women), by 73–79 years the level of the financial literacy both of men and women decreases till 10.76 points. Married couples are financially more literate than single age peers are, the gap is especially evident in the middle age (40–50 years). The employed people have greater financial literacy than the unemployed ones.

The greatest level of the financial literacy have: the youth at the age 18-24 – 82 points, citizens of big cities – 78 points, employed – 67 points, men – 62 points (versus 58 points in women). The lowest level of the digital literacy is among the grown-ups in Russia (elder than 56 years) – 34 points, citizens of towns and villages with the population less than 50 thousand people – 51 points, unemployed – 44 points.

The polls show ambiguous relation of the Russians to new technologies, when answering questions the same people note positive and negative sides. 54 % of the Russians are aware of the technological innovations, 56 % want to learn how to use new technologies, 60 % are sure that new technologies will solve social problems, 74 % are sure that technologies will increase the comfort of life. At the same time 75 % are afraid of modern technologies (37 % are worried, 38 % are troubled), 22 % have negative experience of using gadgets, 30 % do not see new knowledge in technologies, 35 % consider technologies dangerous in a long-term run.

### 6.3. Digital technologies in financial relations of the Russian people with banks

According to the data of NAFI the involvement of the Russians into the financial relations increases (see Table 1), especially in the Internet-banking (the increase per year is almost 330 %) and safe deposits (increase 200 %).

**Table 01.** Indexes of the Russians involvement into financial relations with banks in 2018-2019 years, %

The amount of financial services users	2019	2018	Changes
users of the financial services of the total amount also use:	88	87	+1.1
- salary and stipendial debit cards	71	62	+14.5
-debit cards	34	23	+47.8
-credit cards	21	16	+31.3
-mortgage	7	5	+40.0
-auto loan	5	3	+66.7
-timed bank deposits	12	8	+50.0
-current bank deposits	13	7	+85.7
-insurance services	No data	6	-
-mobile banking	53	34	+55.9
-Internet banking	30	7	+328.6

Mobile bank is more popular among the people age /percentage %	younger than 34 / 75	younger than 44 / 45	-
-safe deposit box	3	1	+200.0
Do not use financial services	12	12	0,0

Source: based on NAFI data (*Salary debit cards...., 2019; the Russians started more often ..., 2018*).

Digital technologies penetrate financial relations of the Russians, first, via remote services. 19 % Russians have never visited the credit-financial organizations (every fifth), 3 % of the Russians visit these companies regularly (once a week or more often), 4 % – twice a month, 35 % – once a month, 10 % once half a year and 12 % once a year. The Russians visit the credit-financial agents to: pay the bills (25 %), receive issues (23 %) and cash transfers (20 %).

It is interesting, but credit-financial agents estimate differently the level of being in demand for physical and remote reference into the office. Some think that 60 % of clients prefer visit offices (20 % of references are remote), at the same time some authors say that there are only 40 % of such clients. However, every fifth organization (22 %) plans to reduce their offices during 2-3 years.

According to the poll 46 % of the Russians use remote financial services (Every tenth Russian...., 2019). 46 % Russians use non-cash payments, 52 % prefer cash to pay for their shopping. Young people at the age from 25 to 34 years (64 %) use cards, capital citizens (65 %), employed (57 %). People older than 60 years prefer to pay in cash (74 %), people with no constant employment (71 %), and villagers (60 %). 11 % of Russians issued the insurance via the Internet, however 36 % of the Russians are not aware of such a service.

As a result, 80 % of consumers refer positively to the remote use of financial services and products, noticing speed, availability and clearness. However, 77 % of the Russians are worried that digital channels “make financial transactions less perceivable as a man does not see cash”.

Digital banking product consumption allows a client control personal finances more effectively via personal account and incorporated programs of planning and income – spending records. Experts are sure that digitization has a positive impact on controlling personal finances; consumers control their income and spending better. According to NAFI 88 % of financial organizations think that “digitization of the financial services promotes financially literate behaviour”, but only 57 % of consumes agree with this.

#### **6.4. Perspectives of digitization in financial relations of the Russians**

Applying digital technologies for financial transactions is connected with some acute issues:

First, cash transactions will remain for a long time, that means the potential of digital technologies in financial relations will be under-used. Thus, 32 % of the Russians keep money in cash at home even at the average level of the financial literacy of the Russians (when a person understands that it is unprofitable). Besides, 22 % of the Russians consider all depositing and investing instruments to be a kind of fraud, Besides, not all sellers in Russia accept non-cash payments.

Second, digitization of money turnover and financial transactions and relations faces legitimacy of innovative technologies, for example, such as blockchain, crypto-currency, tokens, mining, not to

mention digital quasi-money (Yandex money, webmoney, and others). Russia, as well as the whole world needs to regulate the status of these digital technologies and rules of their turn over.

Third, digital technologies in the financial sphere create competition of conventional credit-financial agents, who have licenses (banks, insurance companies, investments funds and others) with non-financial high-technological companies who offer financial services without special licenses (fin-tech companies or new-banks) (Kokh & Koch, 2019), in some case we talk about international big companies – big-tech companies (Big tech in finance) (Carstens, 2018). In theory, specialized credit-financial agents can do most of the operations that fin-tech companies do, but the latter receive more profit from unsteady financial situations, as these companies are less regulated than the former ones. Unsteady financial situation allows non-bank fin-tech companies compete successfully, for example, with banks in some products, whose success is not connected with the bank uniqueness, but they cannot substitute banks on the financial market completely (Stulz, 2019).

In these cases, specialized credit-financial agents should leave their superiority or drastically change their business model. Experts admit the necessity of partnership between the bank and a technological platform. Quick development of the financial innovations together with globalization of financial markets makes the bank system voidable for digital risks (Anginer & Demirguc-Kunt, 2014).

Forth, introducing digital technologies into activity of credit-financial agents today is not systematic; it creates a “patchwork” of services for clients, which are difficult for a client to understand and for the agent to control the efficiency of some technologies.

Besides these issues, some others require answers. We consider these issues are of the top priority, their answers will be a base to optimize introduction and application of digital technologies in Russia.

## **7. Conclusion**

This analysis evidences technological status of the Russian people and possibility to consume digital financial products and services. Sex, age, place of residence and employment influence the status and ability to consume financial products.

The factors of digital technology introduction into financial relations of the Russians, as we think, should be viewed from both positions: from the position of the producer and seller of the digital financial service and the position of the consumer of the digital financial service.

Thus, the credit-financial agents should understand the necessity to transform their business-model to the partnership with fin-tech companies and their financial possibility to invest into digital innovations. Today, according to the research both factors are active and credit-financial organizations introduce actively digital technologies and change business models.

It is more complicated to introduce digital technologies into financial relations of the Russians. On the one hand, financial and digital literacy are at a sufficient level, a greater part of the grown-up population in Russia use the Internet, the number of the financial transactions increases in Russia. On the other hand, the development of digital channels and forms of introducing and consuming financial services or products correspond to non-cash preferences of the Russians. Both in digital and non-digital form such bank products are required (payments, deposits, credits). Insurance, investment on the market

of the security papers, discretionary management and other financial products and services are not so popular, despite their availability to a wide range of population.

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