FINANCIAL EDUCATION AND DIGITALIZATION. THE CASE OF ROMANIA

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Abstract

This paper[1] highlights the importance of financial education and digital literacy in the context of the digitization of the economy. Building on the theoretical grounds established in the literature we use relevant data and statistics from comprehensive studies on financial education, financial literacy and digitalization. We suggest that addressing the issue of insufficient financial knowledge and increasing digital financial literacy could have important implications for individual and societal well-being.

Keywords: financial literacy, financial system, technology, economic development

JEL Classification: A20; G50; O33

1. Introduction

The last two decades have been marked by a succession of crises and major events worldwide, starting with the global financial crisis, which have put pressure on decision-makers to find solutions to counteract the adverse effects generated.

In this paper we address the issue of how the digitization of the economy influences the level of financial education of the population and its financial behaviour, also discussing a more recently emerged concept of digital financial literacy. We discuss the broad themes of financial education and digitization, with the pursuit of the general objectives to establish some coordinates of the level of financial education in Romania and making assessments regarding the likely

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developments, while also isolating and analysing some particularities of financial behaviour in the context of the digitalization of the economy.

Numerous studies indicate the lack of a sufficient level of financial knowledge among important segments of the population. Such data emerge from studies conducted across the globe, even if some countries have greater deficiencies than others in this area. This insufficient education leads to the taking of financial decisions that are far from optimal, a situation with important impact, both at the individual level and at the level of the entire society. As long as the ability to use financial concepts in the use of individual financial resources is limited, we cannot expect these resources to be adequately managed. We find that the digitization process at the economic and social level is accelerated. Due to the importance for the field of finance, it seems necessary that, for an important part of the population, financial literacy is also doubled by digital literacy. The proper use of financial technology requires greater financial sophistication than what was sufficient in the past, both to simply use new financial products and services and also to avoid financial fraud and other costly mistakes.

It is very possible that precisely the ability to use new technologies in the financial field at the level of the entire population will represent a new and important differentiator at the level of different national economies and societies. As a result, it could be that precisely the ability of nations to prepare their population in this field can have a decisive role in the process of ensuring the premises of national well-being.

2. Literature review

Much of the body of literature on financial literacy considers the relationship with individuals' contributions to pension funds (such as the study by Behrman and Mitchell, 2012) while some also point to the importance for stock market development (Panait and Lupu, 2009). Also, numerous studies highlight the importance of the results for public policymakers, who can use them to substantiate measures aimed at increasing the degree of financial education (Chen et al., 2020, Contreras and Bendix, 2021). In a novel approach, Volpe et al. (2006) set out to determine the set of questions needed to test the degree of financial literacy, which would allow some standardization of the studies pursuing this theme. An interesting perspective is that of

Gray et al. (2021), which examines the extent to which education in general contributes to improving financial behaviour.

We cannot propose a comprehensive review of the literature, given that in this field, due to the abundance of studies carried out, we have moved from a narrative review of the literature (such as that of Martin, 2007, Hastings et al, 2013 or Abad-Segura et al., 2019) to meta-analyses designed to lead to an aggregation of study results (such as that of Fernandez et al., 2014 or Kaiser and Menkhoff, 2017). These ideas regarding the state of the literature analysis in the field, by Kaiser et al (2021), can be supplemented with data regarding their assessment from the perspective of the number of Web of Science articles published on the topic of financial literacy, which experienced an exponential increase, from under 50 in 2010, to over 600 in 2020, with a total of about 2500 articles in this interval. We note, therefore, the abundance of studies on the subject of financial education in well-rated publications, without taking into account the studies from marginal publications.

3. Methodology and data

In order to build on the theoretical grounds established in the literature we use relevant data and statistics from comprehensive studies on financial education, financial literacy and digitalization. This helps to establish general levels on these aspects and compare the position registered in Romania with international averages and a relevant set of countries.

Examining the data from a more recent OECD study on financial literacy (2020), we also note here the extremely poor scores recorded by respondents from Romania, both compared to the global level and compared to respondents from neighboring countries. In the table below we reproduce these scores, obtained both by simple addition and by normalization.

Table 1

Financial literacy scores (selected countries)

		Financial literacy score	Knowledge	Behaviour	Attitude
Score	Romania	11,2	3,5	5	2,7
	Bulgaria	12,3	4,1	5,3	2,9
	Hungary	12,3	4,6	4,5	3,3
	Moldova	12,6	4	5,5	3,1
	All countries average	12,7	4,4	5,3	3
Scores normalised to 100	Romania	53,4	48,3	55,7	54,7
	Bulgaria	58,5	56,9	59,3	57,6
	Hungary	58,8	65,6	49,9	65,1
	Moldova	59,8	55,6	60,6	61,4
	All countries average	60,5	62,8	59,2	59,2

Source: OECD, 2020

We note that the general score in the above table can take values from 1 to 21, by adding the scores of the component elements (financial knowledge - score from 0 to 7, financial behavior - score from 0 to 9, financial attitude - score from 1 to 5). Taking this information into account, we find that the scores in Romania are approximately halfway up the scale for each component of financial literacy, with the one related to knowledge being the most deficient, both in absolute terms and in relation to the average of the study.

Other interesting aspects that emerge from the OECD study concern the answers provided by the respondents in each country to a series of questions designed to determine the level of financial knowledge held. We notice that, especially in the case of Romania, very few respondents correctly understood notions that can be considered basic, such as what simple and compound interest means. We note that, especially compared to the respondents from the other countries presented in the table below, in Romania the understanding of the relationship between time and the value of money is problematic.

Table 2

Correct answers to seven questions regarding financial knowledge – selected countries (%)

	Romania	Bulgaria	Hungary	Moldova	Study average
Time value of money	36,9	51,7	66,8	67,5	59,9
Understanding interest paid on a loan	76,5	71,5	90,4	80	84,4
Simple interest calculation	41,3	52,7	55,9	43,5	57,1
Understanding correctly both simple and compound interest	14,3	30,3	18,3	14,2	26,3
Understanding risk and return	64,9	76,5	81,2	74,4	77,1
Understanding the definition of inflation	65,2	78,6	84,7	68,2	78
Understanding risk diversification	46,2	45,4	61,6	54,6	58,9

Source: OECD, 2020

It should be noted that the OECD methodology (2020) is also replicated in other studies that aim to validate these results or compare them with different representative samples for certain segments of the population (Atkinson and Messy, 2012, Fraczek et al. 2017, Tulai et al., 2021).

Some additional data of interest in assessing how the use of financial services is influenced by digitization can also be found in The Global Findex Database, an extensive analysis of the World Bank (2022). In the table below we include a brief selection that allows us to see a relevant evolution of some indicators in recent years, in the case of Romania.

Table 3

Date regarding the evolution of digital financial transactions in Romania

Year	2014	2017	2021
Made or received a digital payment (% age 15+)	43%	47%	64%
Made or received a digital payment, primary education or less (% ages 15+)	*17%*	*21%*	*33%*
Made or received a digital payment, secondary education or more (% ages 15+)	*55%*	*59%*	*70%*
Made a digital payment, primary education or less (% ages 15+)	8%	8%	21%
Made a digital payment, secondary education or more (% ages 15+)	40%	44%	64%
Received digital payments, primary education or less (% ages 15+)	14%	18%	23%
Received digital payments, secondary education or more (% ages 15+)	44%	51%	52%
Used a mobile phone or the internet to check account balance (% age 15+)		12%	40%
Used a mobile phone or the internet to buy something online (% age 15+)		16%	37%
Made a digital online merchant payment for an online purchase (% age 15+)		32%	61%

Source: World Bank, 2022

From the previous table we note the accelerated increase in the share of people who have made or received digital payments in the last 8 years. If we also analyse the data regarding the level of education of these people, we notice two important aspects: firstly, the experience of digital payments is much less frequent among people with a low level of education but, secondly, the rate of adoption of these payments by this category of people is higher. However, the gap between the more educated and the less educated is widening. This finding reinforces our idea that the digitization process can lead to an increase in the vulnerability of some segments of the population.

We also note that for both categories of respondents, grouped according to the level of education, the experience with making digital payments is less than that with receiving such payments. While the gaps in receiving digital payments remain at the same level during the analysed time period, they grow in terms of making such payments. Receiving digital payments is more passive than making such payments. Many times, although they may prefer to receive payments in cash, people are forced to receive them digitally. We can think here of receiving salaries or pensions by card versus the traditional option of receiving them in cash. This is pretty much a forced digitization of payments from the perspective of individuals. What is most interesting, however, is how the share of people who have made digital payments is increasing. On the one hand, we observe a substantial increase in the share of these people in 2021 compared to 2017, in both education level categories for which we have data, with COVID-19 undoubtedly being a catalyst for this evolution. On the other hand, it is very interesting that the share of people with a low level of education who made digital payments became almost equal to that of those who received such payments, while, in the case of people with a higher level of education, the share of those who made digital payments became significantly higher than those who received such payments. We notice, therefore, a transition from the passive adoption of digitization in the field of payments to their active approach.

From the data presented, we also note an accelerated increase in recent years in the share of people who make online purchases and who check their account balances online, behaviours that indicate the increasing adoption of digital developments in financial activities.

4. Discussion

The connection between the financial system and technology is not recent. However, the unprecedented development of information technology leads to a very strong merger. The digitized trajectory of the financial system promises to reveal numerous opportunities and also important risks and threats. If we pay attention to the opportunities that digitization brings to the financial field it becomes relevant to introduce the notion of financial literacy and education in this context. Technology has changed the financial system and the way people and businesses interact with it. There is much talk about how technological changes have brought the financial system closer to many people who did not have access to it before. However, this is only one facet of change. It is easy to see how, beyond the growth of financial inclusion, the way other users interact with actors in the financial system has also fundamentally changed. Technology has had a double impact on the financial system: on the one hand it has transformed segments of the financial system through the digitization process, and on the other hand it has created new segments. This is also a trend that promises to last long into the future, thus being an important area of study.

The direction towards which the financial system is heading in the context of technological changes is relatively clear. We don't know exactly how the financial landscape will change in the next 5 or 10 years, but we know the main coordinates. The pandemic that emerged in 2020 has helped to accentuate the digitization process and increase the conditions that favour the development of FinTech, making people go through a process of "forced digitization". Probably, many investors have redirected their funds from "brick and mortar" investments to investments based on digital solutions. We will see in the coming years what the exact consequences of this crisis are, but at this point we can anticipate that they will be substantial.

As mentioned, the "forced" digitization of a large proportion of the population is fuelling the demand for FinTech solutions, accelerating digitization. As the pandemic subsides, the habits acquired during the period of social distancing take stronger root, reinforcing the adoption of financial behaviour with a more important digital component. One basic premise for this paper is that financial digitization is not the real goal of the process, but a means used to an end, it is the path that industry players are currently following to achieve their goals. This process certainly has a transformative impact on the financial behaviour of all stakeholders, be they individuals or companies, beneficiaries or providers of financial services.

Digitization advances at different rates in the world. A 2022 study by the European Investment Bank highlights the fact that the European Union is behind the US in terms of digitalization and the impetus given by COVID-19 was stronger in the US than in the EU, which leads to the accentuation of already existing gaps. Within the EU, Romania has a below-average degree of digitization and had a lower rate of digitization than the EU average during the COVID-19 period, which leads to another level of widening of the gaps. It should be mentioned that the study we are referring to analysed the degree of digitization of companies in the evaluated countries.

Digitization makes financial transactions more accessible, fast, secure and timely (OECD, 2018). At the same time, the uneven advance of the digitalization of the financial system leads to different developments and particular situations at the global level. In 2017, the OECD published a report in which it evaluated aspects related to consumer protection, financial education and the use of digital tools in financial education in the context of the digitization process, highlighting some particularities at the national level. This report reveals the different approaches of the states to these types of problems. Some states, such as Australia, Indonesia, the Philippines and India, seem to pay particular attention to improving the regulatory and supervisory framework, while some states seem to focus more intensively on aspects related to consumer protection of digital services in the context digital (Hong Kong, China). Concerns about improving the degree of digital literacy seem to be dominant in European states such as Austria or Estonia.

A framework for analysing digital divides is advanced by Chakravorti et al. (2020) who, analysing the process of accelerating digitalization worldwide, divided the states into four categories: a) economies that already have a high level of digitalization and are on an accelerated trajectory of continued digitalization (South Korea, Singapore, Hong Kong); b) economies with a limited level of digitization at present but which are digitizing rapidly (China, Kenya, Argentina); c) economies with a high degree of digitization, where the digitization process advances more slowly (many of the EU countries) and d) economies that have both a low degree and a low speed of digitization (countries in Africa, South America, Europe of South). In these terms, we note three important aspects. First of all, digitization is a process that advances unevenly in the world, a fact that leads to the emergence of important gaps. Second, the degree of financial education differs substantially from country to country and the strategies to address the problem of financial literacy differ greatly. Thirdly, digital financial literacy, a relatively new theme arising from digital progress and the need to ensure a sufficient degree of financial education, fundamentally depending on the first two aspects mentioned, cannot be otherwise than deeply uneven at global level. It will probably be a long time before a relative standardization is reached in this area given the fact that the digital financial landscape will be increasingly different in various areas of the world in the coming period.

Focusing on the case of Romania, we can start from a few available data sets, which indicate some relevant facts. From a global perspective, a Digital Skills Gap Index conducted by Wiley in 2021 placed Romania in 74th place in terms of digitalization advance, out of 134 countries, with a score of 4.7 out of 10. Comparing this data with that regarding the level of financial education, we have a representation of the fact that Romania has both a very low level of financial education and a very low level of digital skills, a completely unfavourable situation, given that many countries are much better positioned on at least one of these indicators. To complete the perspective, we can include some additional data regarding aspects related to digitization. A Eurostat assessment carried out in 2021 places Romania in 35th place out of 36 countries in which the level of people's digital skills was measured. The latest statistics available show that only 28% of Romanians have basic or advanced digital skills, compared to an EU average of 54%, with 10% of the population having no digital skills at all (compared to the EU average of 3%).

The positive aspect of the fact that Romania seems to be far behind other countries is that rapid progress could be made relatively easily in the early stages of a real and supported digitalization project. Digital infrastructure is not a problem in Romania, and probably neither is cultural openness to the adoption of new technologies. Serious impediments to the digitization process appear to be the educational system and governmental inadequacy.

5. Conclusions

Clearly, Romania is not a country that can be considered in the vanguard in terms of financial education, financial behaviour, or digitization. All available relevant statistics indicate the existence of gaps, smaller or larger, with the most advanced countries in each of these areas. Some of these gaps could be covered relatively quickly if the right actions were taken, but others would require time and perseverance under any circumstances.

An aspect that does not emerge clearly from the specialized literature consulted refers to the connection between the level of financial education of the population and the economic development of the country. Most studies focus on the effect of the level of education on the individual, ignoring, to a large extent, the aggregate effect at the level of the entire society, possibly demonstrated through a comparative analysis looking at the evolution over time of economic development in several countries, in correlation with the evolution of the level of financial education in the respective countries. This may be an interesting topic to address in the future.

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