Competences in the Field of Finance – Results of a Population Survey

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Summary

During the global pandemic, the frequency of digital financial services has increased, one of the reasons for which may be the fear of infection, which is not necessarily based on prudent orientation. Nowadays, to navigate in the increasingly digital financial market, it is essential to have the right tools and competencies that help in the use of services. During the population survey conducted in the summer of 2019 – before the outbreak of the coronavirus epidemic –, I examined the level of digital competencies in managing finances and its correlations with the level of financial knowledge and the use of electronic financial services. I researched possible gender differences regarding digital competencies, and whether the use of digital tools is dependent of demographic characteristics. I found out that the competencies of women and men led to similar results. However, the development level of one's place of residence is related to the frequency of use of electronic devices.

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One of the benefits of the epidemic that turned into a global pandemic in 2020 is an increase in handling finances online. Fear of a possible infection during the use of cash may have led even those individuals to electronic means who would not have used them without the outbreak of the epidemic. However, what are the conditions for the conscious use of digital financial products?

In order to administer day-to-day finances, not only the banking environment is important but also the individuals' financial culture, including their knowledge, behaviour and attitude.

In order for individuals to accept the ever-expanding and diverse financial options with trust, they need to understand the operating mechanisms of products, recognise risks and maximise their profits both now and in the future. It is important that users of services have a variety of competences, are able to obtain information in the diverse financial market, know the regulatory environment, and know their way around the digital products on offer.

As a key topic in my study, I examine the knowledge about and the frequency of using digital financial services in correlation with the level of digital competences and demographic characteristics.

First, I outline financial literacy and the position occupied by digital competences within it. After the presentation of the objectives and methods of the population survey I conducted, the results obtained are described.

THEORETICAL BACKGROUND

Definitions of financial culture are constantly changing over time and with the development of financial markets, and its dimensions are expanding.

Financial literacy

Theories considering the importance of knowledge significant were the first to emerge: As early as in the past millennium, *Bernheim* (1998) found that most households lack basic financial knowledge and individuals are unable to perform very simple calculations. According to *Bowen* (2002), financial literacy is about understanding the most important financial terms and concepts that are necessary for individuals in their day-to-day affairs. *Hilgert* et. al. identified financial culture as the possession of financial knowledge and, in their research, they found a close relationship between knowledge and day-to-day financial management (Hilgert et al., 2003).

In addition to knowledge, several authors consider other abilities and skills essential for defining financial culture. *Lusardi* (2012) attaches great importance to numeracy skills, and he and his colleague considered it important to master the method of interest calculation (Lusardi and Tufano, 2008). *Moore* (2003) argues that an active integration of practical experience and knowledge helps in financial development, and, according to *Remund* (2010), financial literacy also includes an understanding of basic social situations. *Hung* et al. point out that financial culture means basic economic and financial knowledge, the ability to apply the acquired knowledge, and having financial skills related to resource management, the objective of which is to create lifelong financial well-being (Hung et al., 2009). An ANZ Bank study highlights that financial literacy is closely linked to a person's age, gender, education and socio-economic characteristics (ANZ Bank, 2009).

Non-cognitive factors (motivation, self-confidence) also influence behaviours connected to handling money (Cámara, Tuesta, 2014). Lusardi (2008) states that

deficiencies in numeracy skills and in the areas of financial terms and diversification can be linked to poor borrowing behaviour and the omission of future self-help. Future-orientation specifically appears in Mandell's (2007) definition, according to which it is important to evaluate new and complex financial instruments and make informed decisions, taking into account one's own long-term interests.

According to *Bay* et al., financial culture is a concept that needs to be studied because its components or its characteristics vary with time and place (Bay et al., 2012). As stated by Remund (2010), the different wordings form a holistic picture.

As the studies I have found on financial literacy do not discuss how individuals handle results of financial developments that have been generated through technical innovations, or how individuals adapt to novelties, a brief overview of personal conditions required for getting familiar with the digital space is provided below.

Digital literacy and competence

In addition to financial knowledge, a prerequisite for the use of electronic financial products is the existence of digital competences. On the basis of writings they processed, *Gallardo-Echenique* et al. sought to determine the different contents of two related interpretations: digital literacy is a phenomenon that is related to knowledge and understanding and has cognitive, psychological and sociological aspects; digital competence is a skills-oriented, practical concept (Gallardo-Echenique et al., 2015).

Digital literacy is individuals' awareness, attitude and ability to use digital devices properly, to identify, access, manage, integrate, evaluate, analyse and synthesise digital information, to build new knowledge, to create media expressions and to communicate with others in specific life situations (Martin és Grudziecki, 2006). According to the authors, this knowledge supports digital competence. This is in line with the view of Gallardo-Echenique et al., who accept the definition of *Larraz* (2013) stating that digital competence is the ability to mobilise various 'literacy' and 'learning' skills to manage information, communicate knowledge and solve problems. All this requires the existence of the following: management of digital information and data of various formats; media literacy and communication skills (Gallardo-Echenique et al., 2015). According to *Godhe's* (2018) academic literature review, digital competence is the combination of a technical and a practice-oriented view. UNESCO outlines three levels of digital competence:

- functional skills (basic knowledge of how the technology works, access to the technology),
- intermediate level general skills (meaningful and useful use of digital technologies, content creation, security),
- higher level skills – programming skills (Broadband Commision, 2017).

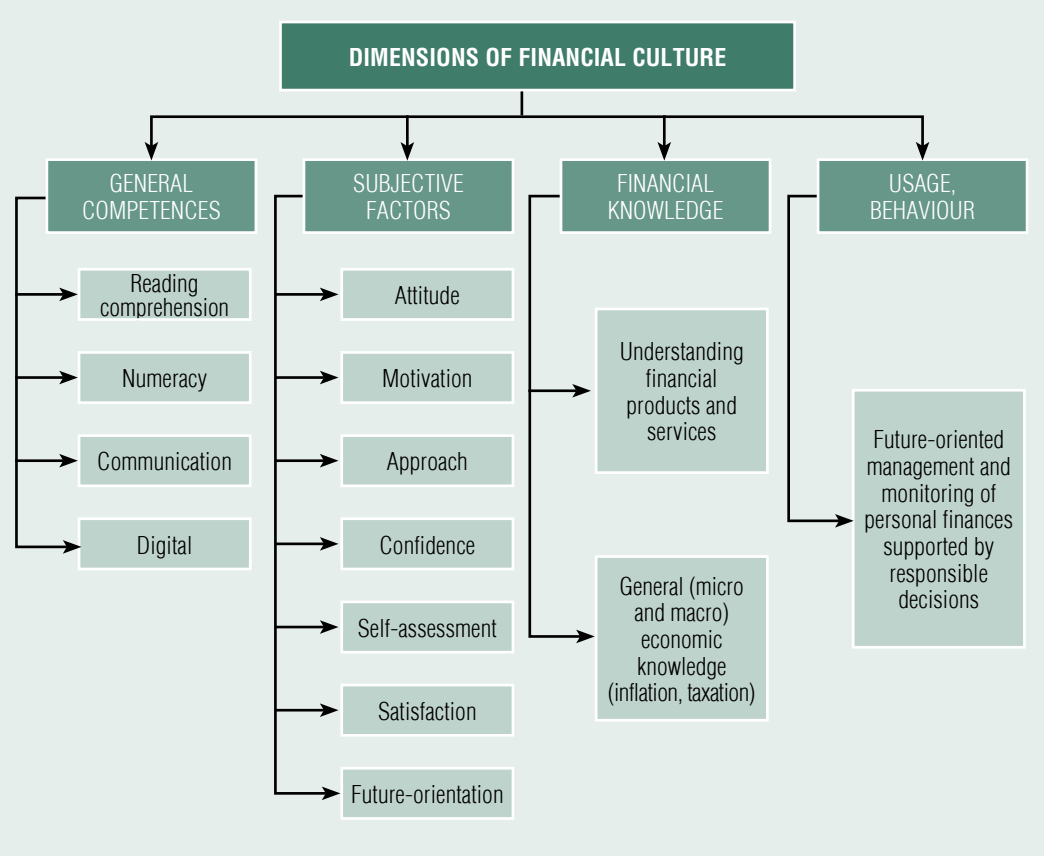
Digital competences are essential for the use of all types of electronic financial products, therefore, in my opinion, they fall into the category of general competences among the dimensions of financial literacy (*Figure 1*).

Intermediate-level general skills are often dealt with in national policies and in the digital competence framework of EU citizens: DigComp2.1 consists of five competence areas:

- basic information literacy,
- digital communication and collaboration,
- creating digital content,
- security,
- problem solving (Carretero et al., 2017).

Figure 1

GROUPING THE DIMENSIONS OF FINANCIAL CULTURE



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Out of the above areas of competence, this study focuses on those that are important for individuals when handling finances.

Digital competences in the area of finances

When conducting money market transactions electronically, not only financial knowledge is required, but we also need digital competences, which are indispensable components of today's financial literacy. The following competences may be important when conducting financial transactions.

Basic information literacy, including:

- browsing, searching and filtering data, information and digital content – ways to save, search for types of loans, with filtering conditions appropriate to one's situation;
- evaluation of data, information and digital content – evaluation of the information found, taking into account the current financial situation;
- managing data, information and digital

content – systematising data before making financial decisions.

Digital communication and collaboration:

- interaction between digital technologies – storage of, grouping and summarising financial information found on various interfaces by using software and mobile applications;
- collaboration through digital technologies – *peer-to-peer* payment (without intermediary institutions), *crowdfunding* (community funding).

Security:

- following the global economic crisis, trust in financial services and institutions was shaken in many cases; globalization and digitalisation have also generated new hazards in the field of finance. The protection of devices and data is closely linked, as the protection of devices against unauthorised persons also guarantees the security of our personal and financial data.

When examining the competent application of financial instruments, I use the term digital competence, which is also widespread in Hungary. I deem continuous adaptation to new technologies and a critical and ethical application of them in the field of finance as part of this concept. In my study, out of the dimensions listed by DigComp2.1, I examined achievements in connection with handling finances concerning the areas of data and device security, obtaining and understanding information, and communication and collaboration, subject to demographic characteristics as well as knowledge about, and frequency of using, digital services.

OBJECTIVE

As part of a population survey, I examined respondents' proficiency in finances, digital competences, knowledge about key digital financial services and frequency of using such services; in correlation with demographic characteristics and features of access to financial infrastructure. International surveys show that, regarding financial literacy, the level of knowledge of men is generally higher than that of women; in the case of the Hungarian population, there is no significant difference. I hypothesised that men do not outperform women in terms of digital competences either. The usage of financial services required the physical availability of banking infrastructure; however, with the advancement of digitalisation, this is no longer necessary for online transactions. I researched correlations between knowledge about digital financial instruments, their frequency of use, and the socio-economic situation of respondents (age, education, income situation, place of residence). The usage of electronic financial services requires trust in service providers, as products are not physically available; I researched motivations for choosing between cash and digital payment methods.

Circumstances and methods of the population survey

The survey was conducted in the summer of 2019, and the representativeness of respondents – questioned by interviewers of the Hungarian Central Statistical Office (HCSO) using a questionnaire prepared by myself – was ensured by a related parallel population data acquisition process.

During the survey, technical and personal conditions necessary for the usage of digital financial products were in the focus, as well as the knowledge and usage of these services.

I categorised financial literacy and digital competence issues across different topics (e.g. savings and insurance, and data and device security). Dividing the number of correct

answers by the maximum number of questions in a given group, I obtained the achievement rates for the given area, thus proficiency in individual topics became comparable. I examined performance by demographic groups and in the context of the usage of digital financial products.

In the case of two variants of criterion, I compared the ratios of individual groups by two-sample t-tests and, in several cases, by analysis of variance. Methods used in calculations included cross-tabulation analysis, chi-square test, and Fisher test at a significance level of 1 or 5 percent, as well as the calculation of correlation-strength indices (Spearman's rho; Pearson R). I recorded information of paper-based questionnaires by using the Excel programme, and applied IMB SPSS Statistics version 26 to process data.

RESULTS OF THE EMPIRICAL RESEARCH

First, I examined competences influencing behaviour demonstrated when handling finances, which was followed by the examination of digital competences connected to finances in case of respondents possessing digital devices. One of the measures of financial behaviour is the degree to which financial services are used by customers; results of related calculations are included in the study along some demographic characteristics.

Financial behaviour and related sub-competences

In the financial literacy part of the OECD Survey of 2010, 75 percent – the result that was considered acceptable – was achieved by 69 percent of Hungarians, which was the best result in that year. In year 2015, the minimum expected level (71 percent) was achieved by 56 percent of the respondents in the surveyed countries, while in Hungary, this proportion was slightly higher (60 percent). There was typically a statistically significant difference between genders in the favour of men, who, with their 61 percent performance, were 10 percentage points ahead of women, however, the difference was not significant in Hungary (61 and 58 percent). In the OECD report of 2010, regarding financial behaviour, Hungarian respondents achieved 54.4 percent of the maximum score, thus finishing in the penultimate place; however, five years later, Hungary brought up the rear of the ranking with a performance of 47.8 percent; and only 25 percent of Hungarian respondents reached the minimum expected level (Potóczki, 2017).

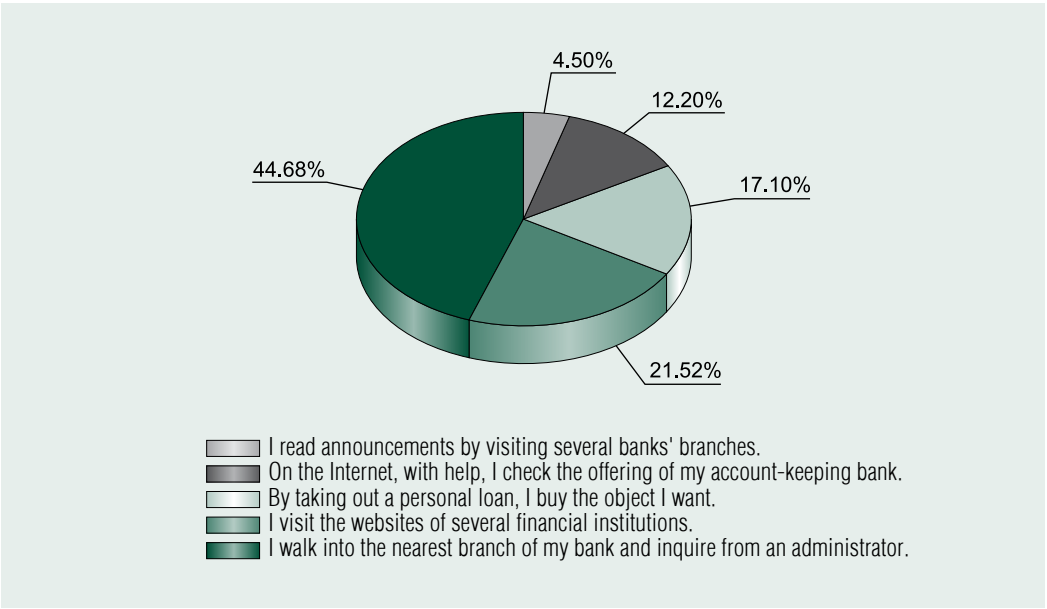
In the population survey, I separated 515 responses according to purposes of obtaining information (placing savings and taking out loans). In connection with the acquisition of information related to the implementation of transactions, in the international survey, most Hungarian citizens sought to get information on offers of their own financial institutions. Related to their opinions on the manner of getting information on deposit options, the majority of the respondents insisted on using their own respective financial institutions; they preferred the savings opportunities offered by their respective banks (*Figure 2*).

Only less than one-fifth of the respondents decided to compare savings products offered by several financial institutions. Respondents having digital investment instruments were more careful in their choices of financial products, some of them also using electronic means.

Obtaining information about loans was avoided by 19.2 percent of the respondents, who preferred to give up some of their other needs instead. When selecting loans, respondents took more care to acquire information, and were willing to compare conditions offered by several financial institutions. Non-digital processing of data obtained independently or

Figure 2

DISTRIBUTION OF RESPONDENTS BASED ON RESPONSES ON HOW TO OBTAIN INFORMATION ON SAVINGS (%)



Source: author's calculations

with personal assistance was chosen by nearly half of the respondents. 32 percent of them took advantage of the possibilities offered by Excel; more than one-fifth of them would find solutions for obtaining information on credit conditions fully independently; while most of them (56.9 percent of the respondents) relied on their own banks' offerings when handling their savings.

A very important group of competences is the pursuit of security, which includes the protection of both devices and data. I examined the former in terms of the existence of any protection functions used when switching on devices. Nearly 40.0 percent of those surveyed are able to use their devices after entering some sort of shape, meaning they used a safety net mode that was not too strong. One-sixth of the respondents protected their devices with a completely unique fingerprint reader and face recognition feature; just over a quarter of them tried to provide stronger protection against unauthorised people by combining modes. One-seventh of the respondents do not have any guarantees that their personal data cannot be accessed by unauthorised persons.

Another branch of security competences can be linked to data protection. When examining the importance of general data protection, respondents were requested to decide, concerning themselves, whether the content of three statements was considered to be true or false.

a When handling finances over the phone, I disclose my personal data on the condition that the verification code recorded in my contract with the service provider and read out by the administrator is correct.

b I have the same PIN and login password everywhere.

c On my social media page, I post when and where I am on vacation.

When providing data over the phone, 11.8 percent of the respondents could not decide what to answer; 53.2 percent thought it safe to use the procedure set out in the contract with service provider. While the first statement is independent of the use of electronic means, the next two have to do with the achievements of digitalisation. In many cases, a potential hacker attack can easily reveal login credentials, and if a user uses the same credentials on all platforms, confidential and important data can become known to unauthorised persons. Based on the answer 'no' given to the second question about privacy, 90 percent of those possessing digital devices were aware of this. Not only data, but also our personal living space and belongings may be in danger if information on the fact that our apartment may be empty for several days is received by those who collect such information in bad faith. 85.7 percent of digital device owners answered 'no' to the third question related to the topic. Concerning data protection competences, one-third of the respondents were fully, and 76.5 percent of them largely proficient, as could be seen from statements they selected from among those provided. General data security and the financial field were unknown to 12.8 percent and approximately one-fifth of individuals, respectively: either they could not give an answer or their reaction was incorrect.

Our financial data is quite sensitive, therefore its protection requires increased and constant attention. Decisions on the following three statements were used to assess this concern.

d I keep the PIN code of my credit card written on a piece of paper behind the card in my wallet.

e I receive SMS notifications about my purchases and cash withdrawals.

f Under no circumstances will I disclose my credit card number and PIN together for an electronic request.

93.9 percent of individuals with a credit card knew that it was not safe to keep the code needed to use it next to the card, because, if the items are lost, anyone could spend money from the associated account knowing the data they found. Therefore, it is fortunate if we receive messages about our transactions, because in case of any unauthorised card use, the card can be immediately deactivated to protect the remaining balance. The SMS service supporting security (as well) was used by only less than half (49.8 percent) of those who have banking products and digital devices. Out of respondents who do not have any digital devices but use mobile phones equipped with a keyboard and use related financial services, only 12.1 percent received messages about their banking transactions. Nearly three-quarters of these respondents are over the age of 60, with the ratios of genders being the same, but four-fifths of them do not have even secondary education. Concerning the last data security question, 90 percent of the respondents would not disclose their credit card number and PIN code at the same time.

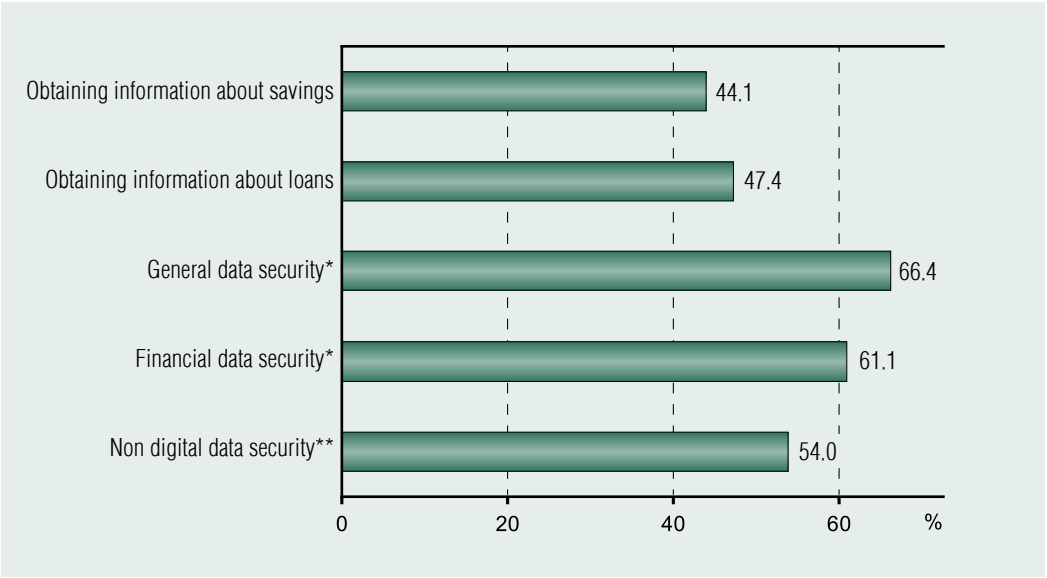
Concerning data security, by dividing questions into two groups, I separated the questions which were not necessarily related to electronic devices but were related to general data security: a.); and financial data security: d.); e.). Answers received to these questions are included in the 'Non-Digital Data Security' category.

The weakest result was obtained in the area of obtaining information on savings (*Figure 3*). More than half of the respondents were aware of the importance of data protection, but this is still low.

Concerning competence performance, there is no significant difference between the achievements of men and women; however, younger, more highly educated, higher-income

Figure 3

AVERAGE RESULTS REGARDING FINANCIAL SUB-COMPETENCE RESULTS (%)



Note: *based on answers to questions of digital and non-digital data security

***no* digital device is needed for it [from general data security question: *a)*; from financial data security question: *d); e)*]

Source: author's calculations

groups, typically in intellectual occupations, demonstrated higher performance.

When analysed by region, responses show that respondents in the northeastern part of Hungary delivered the worst performance in terms of competences, however, it was also observed that the eastern part of the country is lagging behind the western part. When examining the types of settlements, it turned out that respondents in Budapest were more aware of the ways of implementing data security than those in cities with county rank or in other settlements. Concerning the competence of gathering information on savings and that of financial data protection, residents of the capital and cities with county rank performed better than those living in smaller settlements. City dwellers did not perform differently in terms of device and general data security, nevertheless, they gained an advantage over those living in villages regarding non-digital data protection, and their other competences were somewhat superior to those of non-city dwellers. This may be related to the effects of a favourable supply of banks that characterises urbanization. In the case of competences related to savings, respondents with a bank branch in their settlements gained an advantage of 12.3 percentage points (4.6–20 at 95 percent confidence level), but they suffered a disadvantage of 6.1 percentage points in non-digital data security (5.3–18 at 95 percent confidence level), and there was no significant difference in the rest of the categories. Respondents who could use ATMs locally showed no difference to others in their achievements of general data security competences, however, in the other fields, they

performed better than those having no access to such banking equipment.

The possession of one's own financial products and the use of services also determine the achievements of respondents regarding competences. Credit card holders achieved outstanding results concerning financial data protection, with an advantage of 76.9 percentage points gained over those who lacked this financial product (74.8–79.1 at 95 percent confidence level), and, in the same field, respondents using some digital method for the payment of public utility fees surpassed others to the greatest extent (31.1 percentage points; 25.4–36.8 at 95.4 percent confidence level). Respondents preparing household budgets performed better in terms of exploring credit conditions (18.8 percentage points, 11.7–25.9 at 95 percent confidence) than those not consistently keeping track of their incomes and expenses.

Compared to the areas surveyed above, different results were obtained in the category of communication and collaboration. The financial knowledge of those who made financial decisions without any personal interaction on the subject (who considered themselves 'smart enough') was not at all better than that of those who marked other responses, therefore, it might make sense to consider information received from other people (as well) when making financial decisions. Respondents who obtained information but did not participate in personal communication about the issue represented approximately half of the group (47 percent). Receiving one-on-one financial advice, without indicating the source of the information, was important to nearly 35 percent. Digital devices and platforms are used by slightly more than 10 percent of those responding to the question, and the ratio of those independently using the digital communication space is negligible (1.2 percent), even though, through this forum, it is possible to get support quickly and in large numbers and exchanging experiences before making financial decisions.

Concerning communication and collaboration digital competence, respondents achieved an average of 37.5 percent (35.8–39.3 at 95 percent confidence level), which is the lowest performance so far in any sub-competence segment; correlations measured with the rest of the variables also differ from previous ones. The proportion of those who decided to choose some form of digital collaboration related to finances (answers that 'are worth the highest score') did not reach 2 percent of the sample. Older, less educated, and lower-income people were willing to seek advice and accept it from others, but they did so in person. Due to the pursuit of a high level of autonomy that is reflected in the responses, personal interactions and digital collaboration are of little importance to respondents.

I examined the effects of having and using financial instruments on competence performance. Those with digital savings achieved better results in all areas. The advantage of those paying public utility fees electronically is surpassed that of those using bank cards, a fact relevant, to the highest degree, to financial data security (by an average of 76.9 percentage points, 74.8–79.1 at 95 percent confidence level). The results of the competences of people living in different types of settlements are not different in all areas: the proportion of correct answers to questions asked about the topics of communication, obtaining information about loans, and device protection are considered significantly the same for people living in settlements of any size. Residents of settlements with higher population performed significantly better in the segments of savings, and general and financial data security, with the worst results achieved by those living in villages.

Up to this point, all respondents' answers

have been included in the analysis of competences. In the following, I examine the digital competences and the exploitation of digital options only of respondents possessing electronic devices.

Level of digital competences related to financial services of those having digital devices

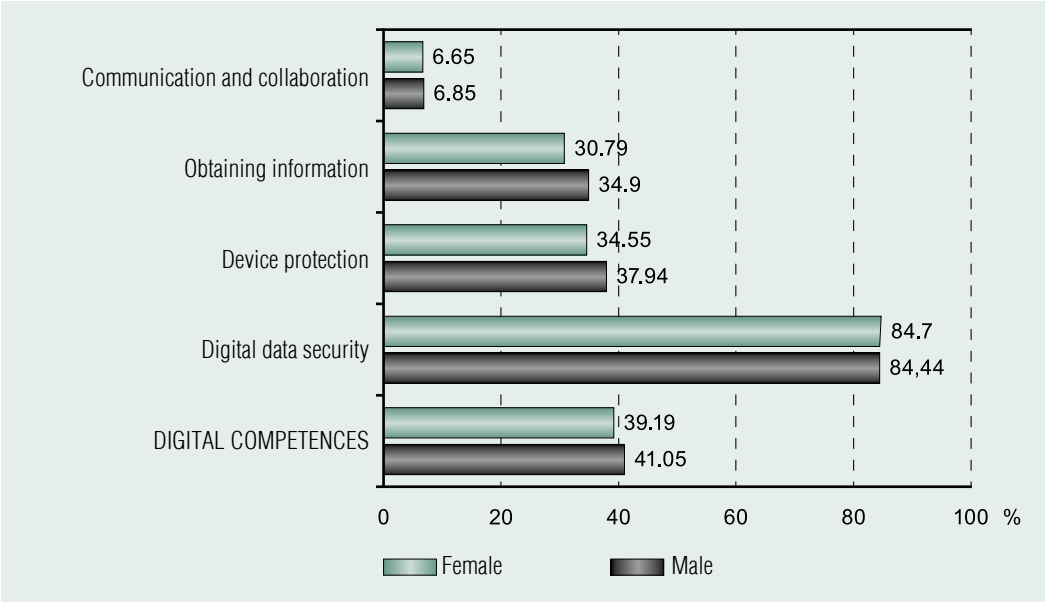
Nearly one-fifth of the respondents (16.5 percent) do not have a digital device to be used to carry out financial transactions, while 41.4 percent own two of them, and almost a quarter (23.9 percent) own three or four devices.

To assess the proficiency related to device safety, I included answers to all related questions in the calculation process. I compressed questions related to obtaining information on savings and credit conditions into the category of obtaining information. Here, and in the case of the digital competence of communication and collaboration, the best results were achieved by respondents using digital methods with help or on their own. Related to the data security category, issues that can be solved with the help of digital devices could be considered [From the subchapter *Financial behaviour and related sub-competences*, concerning general data security: *b), c)*; and for financial data security: *f)*]. I used the average of the four categories to form the value of the joint digital competence performance index.

The 40 percent indicator obtained as the average of the four sub-areas of digital competences is not regarded to be high (*Figure 4*). The value of the main average is substantially reduced by the result achieved in the category

Figure 4

AVERAGE RESULTS ACHIEVED CONCERNING DIGITAL COMPETENCES (%) BY GENDER



Source: author's calculations

of digital communication and collaboration. This is due to the fact that 12.1 percent of those having devices (430 individuals) stated that they communicate about their finances only through digital platforms, and nearly 90 percent of them is able to do that admittedly only with help.

Digital data protection is of a particularly good level for those who use electronic devices. Presumably, this is also due to the fact that, in the segment examined, two of the three questions were related to financial products, and it is known that service providers take special care not to disclose their customers' sensitive information to unauthorised persons and they require their partners to strictly adhere to security protocols. Regarding data protection, the performance of those who use digital services on their own devices is almost 20 percentage points better compared to the total number of respondents.

Two-thirds of digital device owners applied no security protection on their devices or applied only the simplest procedure (password, a shape when logging in – which, in many cases, consists only of a 'popular' string or an easy-to-decipher line combination); these respondents received a low 'score' in the test. Safer modes (fingerprint or face recognition, or a combination of these) have been chosen by a third of digital device owners.

Acquiring financial information digitally was applied by nearly 40 percent of those having a device. In the case of acquiring information on either savings or loans, the majority (63.6 and 70.3 percent of those who choose this method) obtain missing financial information on their own: from websites of several financial institutions, using online services, and comparing information.

Digital communication and collaboration concerning finance was not a regular activity even for individuals with the right devices. Either a high degree of autonomy or a personal request for help and support is typical of respondents before their financial transactions are carried out.

The digital competence level of men and women did not differ significantly by sub-field (Figure 4). Regarding device protection, there was no difference between the different types of settlements. In terms of collective digital competences, respondents living in the capital city performed better than those living in villages; in the case of collecting information, residents of cities with county rank also gained a significant advantage over the population of other settlements; and concerning data security, only these latter ones were better than them, and those living in the capital were not. Urban people, regardless of the size of the settlement, had higher digital competence; the maximum disadvantage of rural people was observed in terms of obtaining information (12.4 percentage points, 4.8–20 at the 9 percent confidence level). According to the results of the geographical test, the competence level of the population of Budapest and the Transdanubian region differed significantly from that of the Great Plain, i.e. the eastern-western and centre-periphery division can be observed here as well, as in the case of so many other socio-economic factors.

Usage of digital financial services

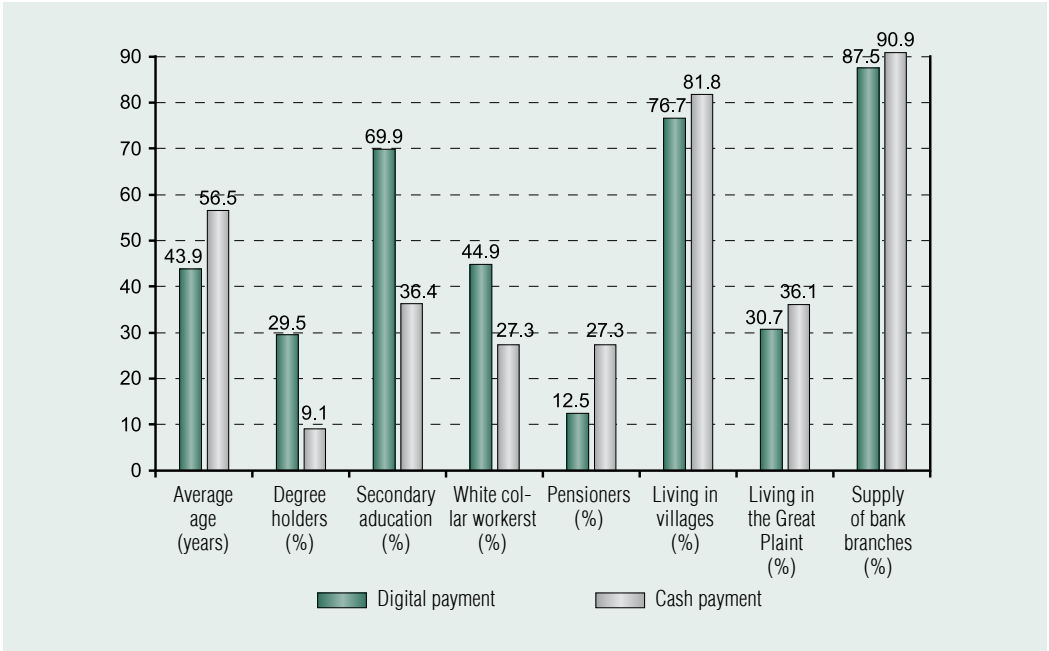
The choice between financial products is influenced not only by rational reasons but many subjective factors, such as trust. Based on rankings of motivational factors listed for cash and digital payment methods, it can be stated that the average age of those who consider cash to be safe is lower than that of those who feel distrustful of digital financial services, and the highest proportion of the latter group (42.2 percent) includes pensioners and one-third of them live in villages; a high

proportion of respondents in these latter two groups use cash payment to keep track of their spending. Nearly half of those who choose digital payment methods considered security as the first important aspect, and their average age is 14.3 years lower than that of the distrustful, they typically have higher education, and havemore lucrative intellectual jobs (*Figure 5*).

83.5 percent of the respondents answered positively concerning having a retail current account, and 79.4 percent of the respondents have a bank card, and credit card is less common (13.0 percent). These financial products are typically held by respondents aged 21–60 years, with no significant difference in the proportion of men and women. Although 16.5 percent of the respondents do not have a current account, 21.6 percent of individuals receive their remuneration exclusively in cash, and 5.7 percent receive the amount both on their account and in cash. The reason for the discrepancy may be that, on the one hand, a large proportion of those who do not have a current account are aged 65 years or older (44.71 percent) and, on the other hand, 48.2 percent of them are retired, while three-quarters of those holding an account are between 21 and 60 years old. Typically, many employers transfer employee remuneration to current accounts, while receiving pensions in this way is less common. 47.6 percent of all respondents chose some form of digital (non-check and non-cash) payment for settling their public utility bills; this figure in the case of respondents living in cities is slightly more than

Figure 5

CHARACTERISTICS OF THOSE WHO CONSIDER DIGITAL AND CASH PAYMENT METHODS SECURE



Source: author's calculations

half (51.6 percent), however, this proportion in villages is only 37.2 percent. There is no significant difference in proportions by gender in these areas.

Digitalisation in the field of finance results in more and more new services, concerning which I examined knowledge about, and the frequency of usage of, the following services:

- Telebank – banking services over the phone,
- Netbank – online banking services platform,
- Mobilbank – mobile phone-based banking services for customers holding a retail bank card,
- Paypass – contactless card,
- Mobile payment – bank card digitalised into a mobile device,
- Mobile wallet – an encrypted card number (token) is generated from the original card number, which is stored on the mobile phone; this can only be used for payment once. The token ensures that the transaction is not 'intercepted'. No live internet connection is required for making payments.

Habits surveyed before the Covid pandemic reflect that 6.4 percent of the respondents were unfamiliar with each of the digital financial services tested, with 9.7 percent of them having never used any of these tools. Paypass is the most common among all respondents (54.9 percent use it), and it is used by nearly two-thirds of those having digital devices; among the latter ones, NetBank is known to almost to the same proportion, but only one-third of them use it frequently. Mobile phone applications were less well known and widespread in the summer of 2019; these applications and the Telebank service had never been used by more than half of the respondents (*see Figure 6*).

Similarly to digital competences, there is no significant difference between genders concerning the usage of the above digital financial products. A correspondence analysis characterising the 'moving together' of education and place of residence (type of region or settlement) confirmed that individuals with higher education tend to migrate from smaller settlements. Those with higher education performed fundamentally better in the knowledge and competence test, so it is not surprising that a higher proportion of those living in cities tend to use various digital products for handling finances compared to those living in villages (*Figure 7*). The usage of paypass and netbank is relevant to more than 50 percent of the total sample, however, this rate in villages compared to cities shows a negative difference of higher ten percentage points for these two services.

The digital competences of those who use digital services more often are significantly better than those of others, they live in larger cities, they are typically younger, and they have a higher income due to their higher education (*Figure 8*).

In addition to using netbank and paypass services frequently, young people also prefer mobile banking, and higher-income individuals prefer mobile payments; they account for nearly a quarter and a fifth, respectively, of those having digital devices.

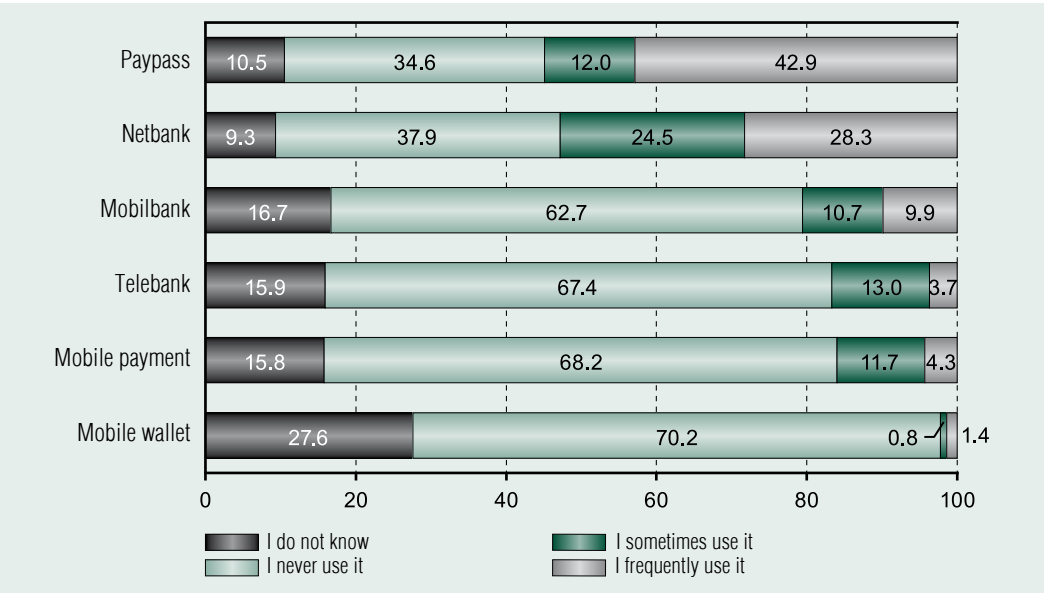
Higher levels of financial literacy are positively correlated with achievements in digital competences (Spearman's rho 0.44 at a significance level of 1 percent), a fact that confirms the advantage of those with higher education when participating in the digital money market.

SUMMARY

General conditions to financial literacy, in my opinion, include digital competences, whose level related to financial services was one of the aims of my population survey.

Figure 6

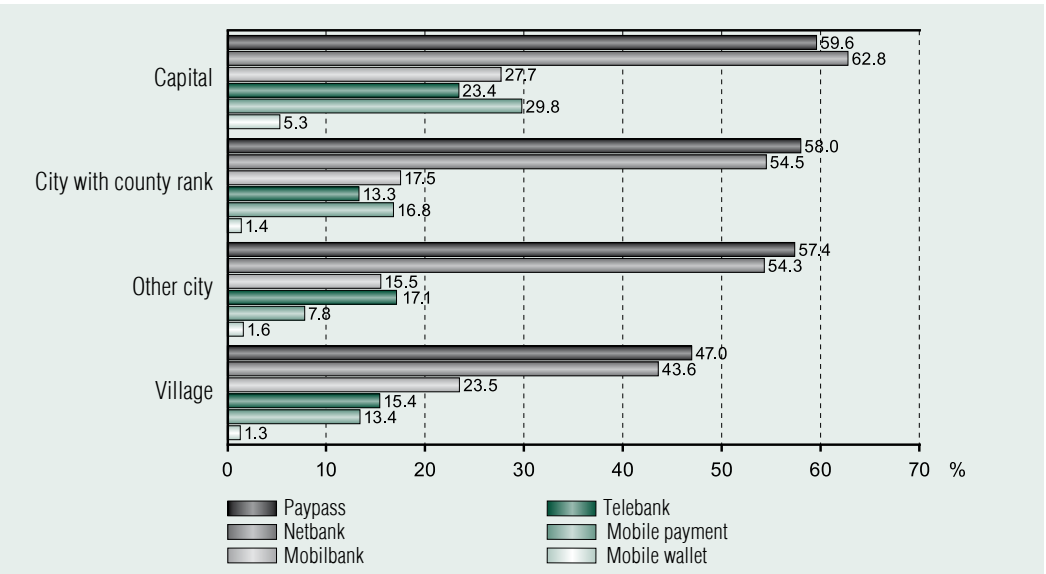
KNOWLEDGE ABOUT AND FREQUENCY OF USING KEY DIGITAL FINANCIAL SERVICES AMONG ALL RESPONDENTS (%)



Source: author's calculations

Figure 7

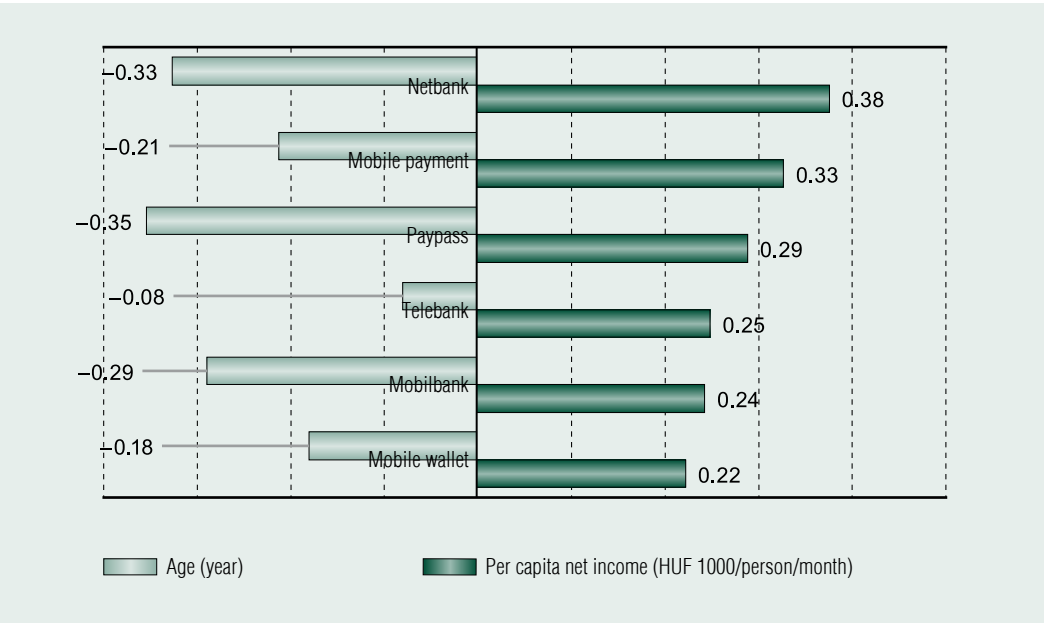
PROPORTION OF USERS OF KEY MODERN FINANCIAL SERVICES BY TYPE OF SETTLEMENT (%)



Source: author's calculations

Figure 8

CORRELATION INDICATORS DESCRIBING CORRELATIONS BETWEEN THE FREQUENCY OF USAGE OF DIGITAL FINANCIAL DEVICES, AND AGE AND INCOME SITUATION



Source: author's calculations

Regarding the acquisition of information related to digital finances, the research revealed that, while more than half of the respondents only monitored the options of their own respective financial institutions before making decisions on investments (as the results of international surveys also show), nearly three-quarters of them studied the offers of several banks before taking out a loan. Concerning the obtaining of information, the proportion of correct answers did not reach fifty percent, and the associated digital competence level was even lower: the proportion of correct answers was one-third. Digital information acquisition is more common with the younger generations; however, almost half of the individuals in the sample are pensioners, with only a low proportion of them feeling comfortable in the digital space. Older and less educated people – most of them having no digital device, and lacking a high level of financial knowledge and competences – have less confidence in digital payment methods, let alone more sophisticated electronic financial services, such as digital information. Personal counselling is important to them; younger and higher educated people, on the other hand, show a high degree of independence in obtaining information, which is achieved, to a large extent, through digital channels. These two factors can explain the very low level of digital communication and collaboration related to finances.

In the case of device security, the proportion of correct answers is just over one-third; one of the reasons for this may be that, although devices are usually protected by those who own them, they typically implement this protection in the simplest of ways. Regarding data protection, more than fifty percent of

individuals chose the correct answer. Some of the statements were related also to financial data security, this might be the reason why those with digital devices and financial products achieved the best results, as financial service providers require their clients to adhere to strict security protocols.

Nearly four-fifths of the respondents have a current account, and almost as many have a credit card; less than half of the respondents pay their public utility bills electronically. Nearly two-thirds of those having digital devices used the paypass service for shopping, and netbank was almost as widespread among them. Services related to mobile devices were the least known or used; although respondents with higher incomes and younger ones prefer mobile payment and mobile banking. The proportion of those using various digital products for handling finances was higher in cities than in rural areas.

Digital competences are significantly higher among respondents who benefit from digital services, who are typically young, more highly educated, have average or above-average income, and live in larger cities. Presumably, more educated individuals may have a wider sphere of interest that extends also to digital innovations. The acquisition of essential knowledge through electronic means may help them being informed about services and may facilitate their decisions on using electronic financial instruments. Implementing day-to-day finances electronically is convenient and prompt, once trust in a service provider has developed; these factors may provide motivation for taking advantage of other products, whereby competences may improve.

The Covid pandemic has accelerated the penetration of digital services, one of the reasons being that people have tried to avoid paying with cash for fear of infection. An 'enforced' usage of electronic services may help individuals get used to the convenience offered by such services, and may encourage users to obtain information in the field of finance more thoroughly and prudently.

In order to do this, it is crucial to acquire financial knowledge, develop the right attitude, improve skills and strengthen digital competences. The National Core Curriculum (Gov. Decree 5/2020. (I. 31.)) entering into force in 2020 mentions the importance of factors required to understand the world of finances in a number of subjects; the transfer of financial knowledge is possible by using some of a certain number of lessons allowed to be designed arbitrarily. The regulation considers digital competence to be of key importance, the strengthening of which can already start at the level of lower primary education. In addition to the teaching of knowledge, abilities such as independent digital search, critical evaluation, comparison and use of information must also play a major role, preferably by ensuring equal opportunities by providing the necessary means. It would be useful to connect the two areas and use gamification methods to help improve children's understanding in financial areas.

After completing higher-level studies, individuals can be expected to understand the connections between domestic and international financial processes, make informed decisions based on economic aspects, and emphasise the role of self-help. The majority of those with higher education work in a digital work environment, and, for a large proportion of them, using electronic financial products can be self-evident in the future (as well).

Public education has to take on the duty to ensure that graduates are able to manage their finances independently. The pandemic has also forced a widespread usage of digitalisation in education. Most educators feel more and more at home in the digital space, and this should be further strengthened, so that they can provide help to their students in out-of-curriculum

life situations, especially related to handling finances, in a playful way if possible. Due to an increased workload of those working in public education and their lower financial-digital competence that may result from their ever-increasing average age, the employment of travelling teachers of digital-financial subjects should be considered. The knowledge they provide and the digital financial literacy they strengthen can further increase public trust in electronic financial products and thereby increase the usage of digital services. ■

Note

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