Changes in Payment Patterns in Hungary During the Pandemic

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Abstract: In the field of digital payments, the pandemic has brought digitalisation to layers of society that would not have been reached for years or even decades. In our study, after defining the different electronic payment options, we compare four market surveys in Hungary to investigate the extent to which the respondents' knowledge of electronic payments has changed, and how the use of cash substitutes and payment habits have changed due to the forced digitalisation caused by the pandemic. The results of our survey show that significantly more Hungarian residents are familiar with electronic payment solutions than in 2019, but a significantly higher proportion of respondents still do not manage their finances online. Most people are used to paying with cash and therefore do not turn to modern payment solutions. The pandemic as a forcing factor and the response of central and state measures have led society to make a significant step towards greater use of digital payment systems in 2020, and in 2021, this trend is expected to stagnate, not to fall back to the pre-virus situation. We found that government interventions and campaigns to support the positive processes that have been set in motion could help digital solutions to spread.

Keywords: FinTech, pandemic, digital payment, mobile payment, financial awareness, financial culture.

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1 Introduction

Digitalisation has become a cornerstone of the 21st century, permeating every aspect of our lives. It affects our daily lives, our habits, and almost no one can avoid being connected to the digital world in some way. One of the most innovative and emerging sectors of the economy is the availability of electronic payment, offering many positive benefits beyond replacing cash. It can make shopping more convenient, the payment of utility bills faster, and it can also make our spending easier to track. The latter can also have an economy-whitening effect.

However, in 2020 these electronic payment options became more important than ever. This year was a year of upheaval for all of us, as the Covid-19 pandemic - its outbreak our country was in March 2020 - required unprecedented measures to be put in place in countries around the world. The pandemic forced tens of thousands of people to stay at home, workplaces and schools had to close. Domestic businesses moved their operations to the online space if they could, but even so, 47% had to survive the period with significantly reduced revenues [11]. Nevertheless, these events have given an unprecedented boost to the development and rapid spread of digitalisation. The need to work and study at home and the collective defence have brought the digital revolution to segments of society that might not have been informed even after many years or decades.

The present study seeks to explore whether the recent measures have had a significant impact on the payment habits of the Hungarian population and whether the use of cash substitutes has increased compared to the pre-pandemic period. By comparing four market surveys in Hungary, the study investigates the extent to which respondents' knowledge of electronic payments has changed and whether they prefer to do their financial transactions online. The period under review is from May 2019 to May 2021, which means that the most up-to-date research data is included and processed.

In our literature review, we will briefly describe the different categories and functions of electronic payment options and the conditions of their use so that the concepts used in our research are clear to all readers. Through the work of well-known and respected researchers in the field, our paper will describe the capabilities and functioning of digital payment solutions. We will focus on the different types of d cards, followed by online payment methods, and finally, we will look at the various definitions of mobile payments.

Our research examines the results of the surveys already mentioned. These market surveys were made available to us by the Electronic Payment Service Providers Association.

2 Literature Review

The literature review of our study categorises and lists the different electronic payment options. It starts with the more traditional debit cards emerging previously, followed by more modern online payment solutions, and finally mobile payment options.

Enhanced digitalization processes on the financial solutions market have been accelerated by the pandemic [14]. The global digitalisation process has also forced incumbents to innovate, as they have had to compete or even collaborate with emerging FinTech players to maintain their position in the market. Due to this pressure, traditional channels are also becoming increasingly digitised, and digital payment and banking options are becoming more widely available to consumers [13].

2.1 Debit Cards

The debit card is an umbrella term used to describe a variety of different types and functions of electronic payment cards. A summary of their types is shown in Figure 1.

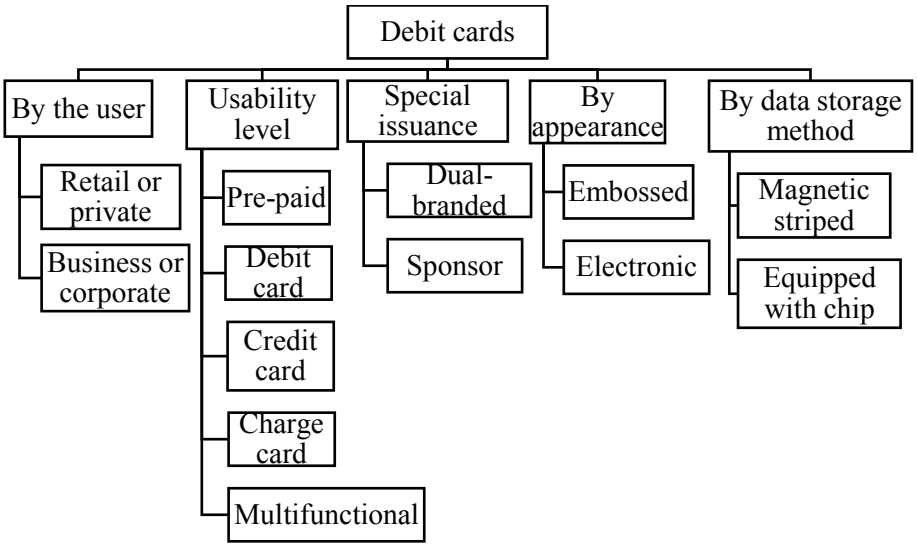

Fig. 1: Classification of bank card types (Authors' development; based on [12])

As shown in the figure, there are several ways to group debit cards. Among these, debit cards, credit cards and prepaid cards are mentioned in our research.

The debit card, the most widely used and best-known cash substitute in the world –in everyday language known as a bank card – already existed in the 1960s. A plastic card with a magnetic stripe - nowadays more commonly with a chip - can be used to carry out payment transactions related to a bank account according to international standards [15; 16].

The classic credit card is backed by a credit limit provided by the bank, based on a pre-contractual agreement. With credit card purchases, the time of purchase and the actual payment is separated, which is why many people prefer this type of payment method, as it can be used even if they do not have enough money on hand at the time. Under the terms of a credit card contract with a bank, the user does not have to pay interest if he repays the required amount by a specified date under predetermined conditions [15].
Pre-paid cards are not very common these days. In this case, the cardholder top-ups the card with a sum of money, which then can be used freely later, just like an electronic purse [15]. Who and under what conditions can apply for this type of card can vary from provider to provider, but it is usually limited.

2.2 Online Payment Solutions

Online payment solutions have overtaken mobile payment systems in time. Online payments occur when we use any digital device that can access the internet to manage our finances through our browser, the World Wide Web. This may include the use of internet banking, online transfers and other online payments [4].
In the case of an internet bank, the user does not need any special software, just access to the internet and a web browser to access their bank's website from anywhere in the world. You can access a large proportion of the services offered by the bank, usually more than in the case of a mobile bank on this interface, by entering the necessary identifiers [1]. When logging in to a NetBank, banks may ask you to enter at least three, but up to several identifiers, such as an account number, ID and password. There is a possibility that the customer has to participate in multi-factor authentication, i.e., they have to verify that they want to log in to the account via another device. It can be done via a mobile phone with a code received in an SMS, a mobile bank with a QR code, or even with a token issued for this purpose [15]. Another security feature is the time limit, which automatically logs you out of the site after a certain period of inactivity, so you cannot accidentally stay logged in. In addition, several features are built into internet banks to enhance security, such as regular password changes or blocking after multiple failed logins [1].
Online transfers most often occur when using e-commerce. After confirming the purchase on the trader's website, you will be redirected to the bank's website, where you can make the transfer after entering the necessary information. From a security point of view, this payment method is more popular than, for example, online card payments, as the full authorisation is done via the bank's website. The introduction of online payments is also an attractive option for traders, as it is cost-effective - they do not

need an online POS system and do not have to pay transaction fees [10].
A similar payment solution is online card payment, where the POS terminal in physical shops is replaced by a digital version. This option was a less popular payment solution in Hungary in the early 2000s, as providing debit card details made shoppers distrustful, and they preferred to avoid online card payments. Our study shows that consumers' views have changed at present.

2.3 Mobile Payment Options

Mobile payment (also known as m-payment), like debit cards, is an umbrella term, and not everyone agrees on its exact definition. Some consider mobile payment to be any transaction that is carried out using a mobile device [9; 3]. In contrast, others consider mobile payments when making a payment on our mobile phone using an application or software [2; 4].
The literature groups these options in several ways. Some categorise the process according to the service provider (manufacturer, bank, telecom, and card service provider) or even whether the payment requires presence (Near Field Communication) or not (phone bill debit or mobile wallet) [15; 2].
Table 1. summarises the features and conditions of the different electronic payment options.

Table 1. Summary of characteristics of electronic payment solutions (Authors' development based on literature research)

	Are we using our own money?	**Is a bank account required?**	**Is Internet access acquired to use it?**	**Is an ID required to use it?**	**Is a special application/software acquired?**	**When is the actual payment made?**
Deposit card	Yes	Yes	**No**	Not in every case	**No**	Immediately
Debit card	**No**	Not necessarily	**No**	Not in every case	**No**	Later
Pre-paid card	Yes	**No**	**No**	Not in every case	**No**	Before use
Internet bank	Yes	Yes	Yes	Yes	**No**	-
Mobile bank	Yes	Yes	Yes	Yes	Yes	-
Transfer	Yes	Yes	Yes	Yes	Not necessarily	Immediately
Online debit card	Yes	Yes	Yes	Yes	**No**	Immediately
SMS-based payment	Yes	**No**	**No**	**No**	**No**	Later
Mobile application	Yes	Yes	Not in every case	Yes	Yes	Immediately
Virtual wallet	Not in every case	Yes	Not in every case	Yes	Yes	-

Literature sources reveal that most payment options use our own money rather than the resources of financial service providers, and they usually require a bank account. A small proportion of electronic payments require access to the internet, but you almost always need to provide an ID. In most cases, you do not need to install a separate application or software.

3 Methodology and Data

The present study is based on the results of the market surveys mentioned above. So far, the so called EFISZ (Electronic Payment Service Providers) Association has conducted four large-scale, representative surveys: in September 2019 [5], in May 2020 [6], September 2020 [7] and in June 2021 [8] to find out the opinions and knowledge of the Hungarian population about electronic payment solutions and services.

The aim of our study was to compare the results of the four surveys and draw conclusions about the changes that occurred during the pandemic. Our innovative approach is what makes this paper unique – we not only show our readers the latest state, but comparing the data of the examined years we also investigate the changes in the digital payment habits since the wake of the pandemic as an added value to the original research. At the end of the article, we look at the potential for the further expansion of digital payment solutions and seek to make some suggestions.

The background and methodology of the research are illustrated in Table 2.

Table 2. Background and methodology of the EFISZ research (Authors' development based on [5; 6; 7; 8])

	First survey	**Second survey**	**Third survey**	**Fourth survey**
Method of data collection	by asking 2000 people personally, 15-minute questionnaire, by Telephony Application Programming Interface (TAPI) method	by asking 1000 people personally, and using a 20-minute questionnaire, by Computer-Assisted Telephone Interviewing (CATI) method	by asking 1000 people personally, and using a 25-minute questionnaire, by Computer-Assisted Telephone Interviewing (CATI) method	by asking altogether 1600 people personally, and using a 25-minute questionnaire, by Computer-Assisted Telephone Interviewing (CATI) method
Target group	Hungarian population aged 18 and over	Hungarian population aged 18 and over	Hungarian population aged 18 and over	Hungarian population aged 18 and over living outside the capital and the county capitals, with 1000 respondents ("rural sample"), and in six selected towns (Balassagyarmat, Balatonfüred, Sátoraljaújhely, Sopron, Szentendre, Szentes) and Hungarian population aged 18 and over with 600 respondents ("rural town

				sample")
Time of data collection	May 2019	May - June 2020	September - October 2020	May 2021

As shown in the table, the data used in our study was collected by EFISZ using simple random sampling methodology. The sample used in the surveys is representative of the population aged 18 and over by gender, age, educational attainment, type of settlement, region, according to the 2011 census, and it is representative in terms of the sample size used. Among the residents of the households randomly selected for sampling, the so-called birthday method was used – an adult member of the household whose day of birth the closest was, was asked to respond.

The fourth, 2021 survey was carried out on 1600 people, of whom 1000 represent the "rural sample" and 600 the "rural-urban sample". In the former case, the survey was carried out among people living in the capital and outside the county capitals, and in the latter case, in six selected cities (Balassagyarmat, Balatonfüred, Sátoraljaújhely, Sopron, Szentendre, Szentes). For this reason, the fourth survey was treated in a unique way, as it does not measure Budapest and the county capitals compared to the first three. In some cases, the results of these two survey samples were presented separately, and in other cases, the weighted arithmetic average was used to calculate the data for a sample of 1600 people – we inform the reader about that each time in our study. Although the results of the rural survey are only comparable to a limited extent with the results of the first three surveys, it is useful to highlight the difference between the digital financial skills and habits of more developed and less developed areas of the country.

4 Research Results

During the period under review, there has been a significant increase in the number of digital payment devices in households, which has a positive impact on the uptake of electronic payment solutions, increasing the availability of platforms. All surveys have clearly shown that the vast majority of households have a bank card, reaching 85% by September 2020, 10% more than in 2019. The availability of smartphones has also been on the rise, with 84% of respondents having at least one in 2020. In both cases, the change is around 10%, and in 2021 we see a minimal decrease (below 5%) compared to the previous period. A similar pattern can be observed for laptops - the number of households with a laptop increased by 14% between May 2019 and September 2020. These data listed here confirm that from spring 2020, the pandemic has led to a sharp increase in the need for digitisation, with most jobs that have been able to do so switching to working from home, often with a laptop or even a smartphone. Education has also continued in digital form, creating a need to make up for the lack of smart devices in households with students and teachers.

For bank savings, the difference is significant: while in 2019, only 21% of respondents had some savings, in autumn 2020, 52% had some savings. The proportion of people with life insurance has doubled between 2019 and 2021: from only 27% in the first survey, half of the people can now say they have life insurance. Given the impact of the pandemic and the uncertainty, people have therefore adopted a more cautious financial approach than before and have tried to prepare for the unexpected with both savings and insurance.

The research shows that the vast majority of respondents - more than 80% - have a fixed or satellite internet subscription at home. This figure was 68% in the first survey, so real and rapid growth can be observed in this area. However, it is a surprising fact that in 2021 in Hungary, approximately 20% of the survey respondents still do not have internet access at home. In the future, government involvement is essential to ensure internet access for the population.

Respondents prefer to use their mobile phone for internet access in all four surveys. It is clear that most people connect to the internet every single day, for an average of 3-4 hours, generally for browsing social media and various news portals. All adults now have a mobile phone for personal use, but a quarter of phones are not suitable, and a further 10% of owners do not use the internet with them. This raises the question of whether, even if 20-30% of Hungarians do not have any internet access in 2021, there is still a chance to integrate them into the

digital ecosystem, and if so, by what means (this will be examined later in the study).
Of those who use the internet with some frequency, the majority use it to keep in touch (e.g., social media) and read the news, and merely a few people use it to deal with a service provider. In this issue, special emphasis should be placed on the management of banking and finance (Figure 2).

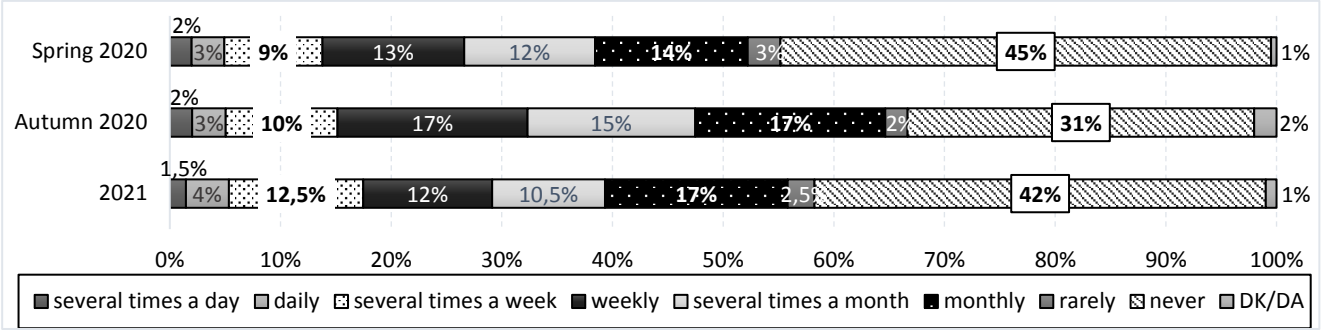

Fig. 2: Frequency of internet usage for banking and financial management (Authors' development based on [6; 7; 8])

Note: No 2019 data were available for this question. Weighted average calculated for 2021 data based on the "rural sample" and the "rural-urban" sample.

The comparison of the three periods reveals that the proportion of people who never use the internet for banking or managing their finances fell significantly from 45% at first to 31% in September 2020. In 2021, however, we can again see figures above 40%, showing that the pandemic was able to temporarily shift some people's banking to digital channels, but this has not proven to be a lasting shift.
In contrast, significantly more people were aware of different payment options during the pandemic than before (Figure 3).

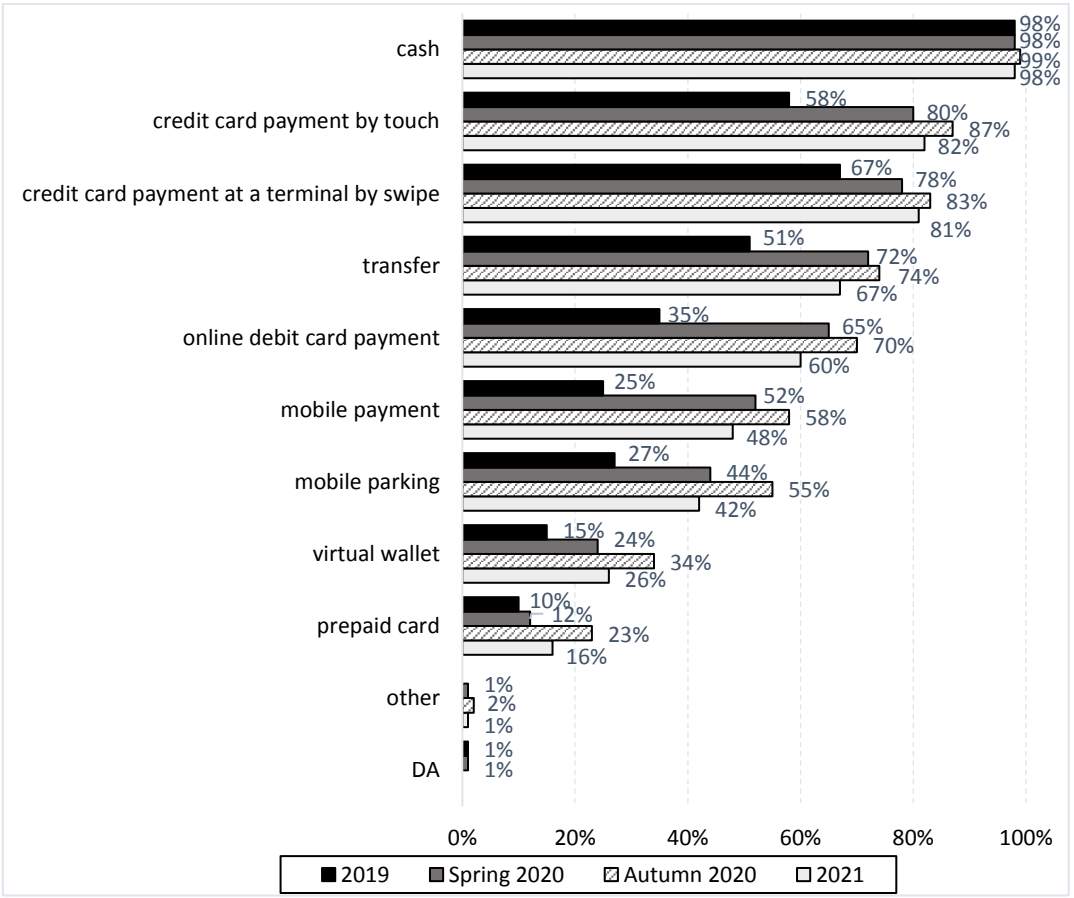

Fig. 3: Knowledge of the different payment methods (Authors' development based on [5; 6; 7; 8])

Note: weighted average calculated for 2021 data based on the "rural sample" and the "rural-urban" sample

The best-known payment method is clearly cash. This is followed by a bank card (debit or credit card) payment by terminal tap or swipe. The knowledge of contactless payment among respondents increased significantly over the studied period, almost by 30%. The number of people who knew how to pay by bank transfer also increased significantly, by 20% by autumn 2020, after which a slight decline is seen in 2021. The biggest change took place in online payment by debit card, which increased from 34% to 70%, i.e., the percentage of people who know this method doubled between the first and third surveys and then fell again. The knowledge of mobile payments also changed significantly, with 33% more people with knowledge of mobile payments in autumn 2020 than in spring 2019. The prepaid card is the least known payment option among the respondents, but it did not play a major role during the pandemic, as it can be used for venues, for example.

In addition to the mass adoption of payment solutions, many more people are using them than before the pandemic. Table 3. summarises the proportions of users of each payment method (the base is the number of people who are already familiar with the payment method).

Table 3. Use of different payment methods among those who know them (Authors' development based on [5; 6; 7; 8])

	First survey	**Second survey**	**Third survey**	**Fourth survey**
cash (N_1=1960, N_2=985, N_3=986, N_4=1573)	96%	98%	90%	92%
debit card payment by terminal-touch (N_1=1166, N_2=804, N_3=866, N_4=1310)	62%	79%	82%	77%
debit card payment by terminal swipe (N_1=1332, N_2=779, N_3=826, N_4=1291)	57%	66%	62%	63%
online bank card payment (N_1=688, N_2=645, N_3=701, N_4=958)	36%	58%	62%	61%
transfer (N_1=1018, N_2=719, N_3=743, N_4=1075)	41%	71%	72%	68.5%
mobile parking (N_1=540, N_2=437, N_3=554, N_4=667)	29%	46%	47%	43%
mobile payment (N_1=491, N_2=518, N_3=579, N_4=763)	19%	40%	36%	37%
virtual wallet (N_1=294, N_2=238, N_3=337, N_4=417)	13%	34%	29%	28%
pre-paid card (N_1=204, N_2=232, N_3=204, N_4=257)	14%	25%	21%	22%
other (N_2=8, N_3=23, N_4=20)	-	28%	6%	22%
NA (N_1=2000, N_2=1000, N_3=1000)	1%	1%	1%	-

Since mid-April 2020 in Hungary, you only need to enter your PIN code for amounts over HUF 15.000 (before that it was HUF 5.000) when paying by touch at a POS terminal. This made shopping even faster, safer, and more convenient from an epidemiological point of view. Around the same time the government announced that all online cash registers had to be accompanied by an electronic payment solution from 2021 – this announcement has added to the range of digital payment options available at most shops in the country. These central actions made the use of the digital payment methods more convenient and attractive.

The results can confirm it: 82% of respondents use their debit card by touch in everyday life with a significant increase of 20% over the survey period. The number of people using a debit card for online payments increased by 26%, with almost two thirds of respondents using it in autumn 2020. The most significant change can be seen in the case of transfers, with 31% more people using them in the third survey than in the first. One reason for this significant increase is the introduction of the Instant Payment System on 2 March 2020 – which was introduced at a particularly fortunate date, before the epidemic - which, due to its speed and new options, has become an attractive form of payment for more people, replacing the immediate cash payment solution at one of its most significant previous advantages.

Mobile parking, mobile payments and virtual wallets are used by less than half of the respondents; for the latter two with a presumable decrease between the second and third surveys, as is the case for prepaid cards. In the case of mobile parking, it is worth mentioning that from April 2020 to May 2021, the government decree did not require payment for parking in Hungary, so this also affected the use of the applications created for this purpose. With the end of the epidemic, the possibility of mobile parking has re-emerged, but no longer in the form of state involvement but through solutions from FinTech players. In all cases, there was no significant change in spring 2021 compared to autumn 2020, but rather a stagnation of the previous rates.

One cannot overlook the fact that almost every Hungarian uses cash in everyday life since it is the one payment method that is accepted everywhere nationwide. We will further examine the reasons of cash-usage in a later point of the study.

When asking about online payments we found that most people prefer to use the electronic payment service provided by their bank. In general, more of the population trusts the services provided by incumbents rather than FinTech companies. To enable customers to bank conveniently from anywhere using their smart devices, banks are offering internet banking and mobile banking services. However, the study of these options shows that there is a significant number of people who do not have these solutions: although the trend is decreasing, a third of people do not have the digital solution for net banking and a half for mobile banking. But for those who do use them, the solutions are mostly used to transfer money and check their balance, based on the results of all surveys.

In addition to the use of different payment methods, the present study also looked at the reasons why people do not use digital payment options. According to the survey, the largest proportion of respondents - two-thirds of people in the second survey - pay cash out of habit. This rate has fallen to 58% in the "rural" as well as "rural-urban" samples by spring 2021, but it is still by far the most common reason. The biggest change is in the case of complex use, with the number of people who do not use electronic payment solutions for this reason falling by almost 20% (from 30% to 11%) by 2020. In 2021, in the "rural sample", the proportion is higher at 18%, so even more people in rural areas will find digital payments difficult. There was also a significant reduction in the number of people who choose not to do so because of a lack of information or high costs. The number of people who did not consider electronic payments to be secure also fell sharply.

It raises the question of what measures would make respondents start to use or make more use of electronic payment solutions. There was no change in the opinion among respondents that they would prefer to use modern payment solutions if more secure systems were introduced, and that more extensive information and simplification of systems could also influence users' payment habits. However, 15% in the third survey said that no matter what changes were introduced to payment solutions, they would not switch to them. In 2021, the same figure for the "rural sample" was 27% - i.e., more than a quarter of rural residents do not feel that any measure could influence them to change their payment behaviour.

The pandemic has had a major impact on all aspects of our lives, and the state decisions that have been taken have affected our daily lives. Thus, the study also examined separately the extent to which the population changed their payment habits, specifically after the outbreak of Covid-19 in Hungary (Figure 4).

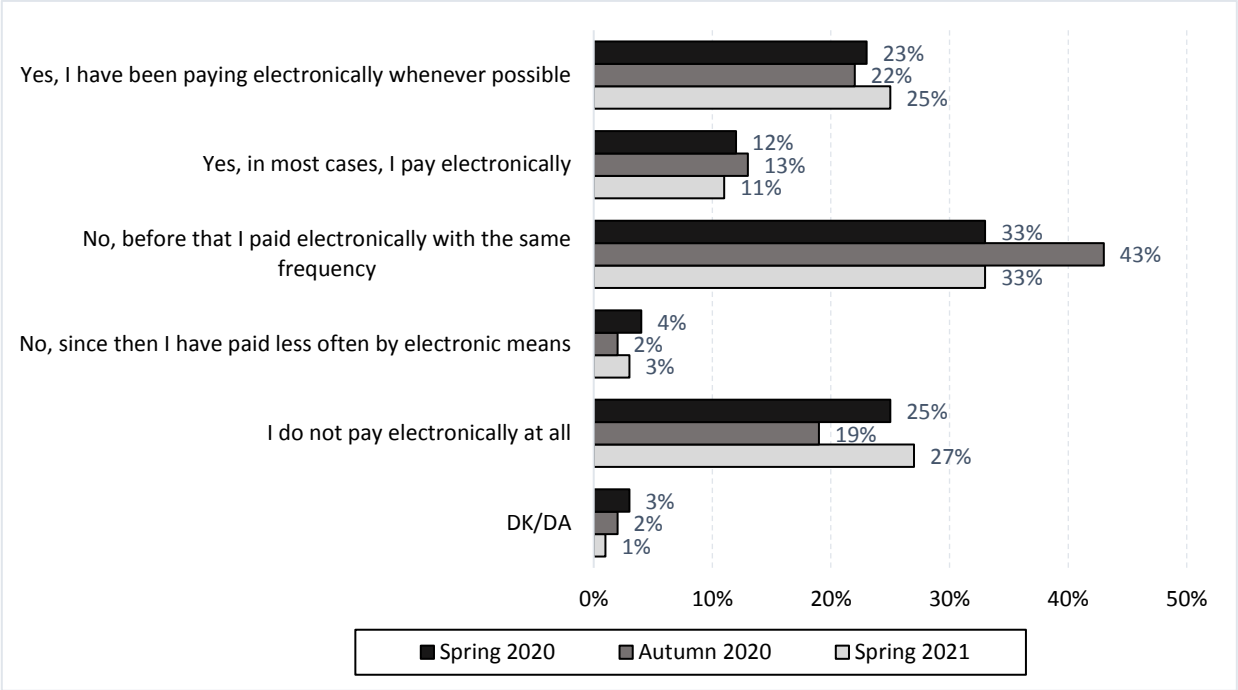

Fig. 4: Preference of electronic payments during the pandemic (Authors' development based on [6; 7; 8])
Note: weighted average was calculated for 2021

Since the outbreak of the epidemic, the number of people trying to pay electronically whenever they can, has been growing. By 2021, almost 40% of those affected by the pandemic-induced forced digitalisation has been paying more digitally than before. The proportion of those who have not changed their habits has decreased, with the same frequency of digital payments as before the pandemic outbreak. In general, a quarter of people said they would not pay electronically at all, even in this unprecedented situation. Here in 2021, the "rural sample" was 31%, slightly higher than the "rural-urban sample" (21%).

In all three surveys, 18-29-year-olds are the age group most likely to try to use a cash substitute in the majority of cases, whenever possible. Almost a half of the over-60s (49%) do not use electronic payment methods at all or use them even less often since the pandemic began than before, but this figure fell by 10% by autumn 2020.

In terms of education level, both in spring and autumn, respondents with higher education tend to avoid using cash as much as possible.

In order to further spread awareness of electronic payment options, it is important to know how people learn about these solutions and where they get their information. The answers to this question are shown in Figure 5.

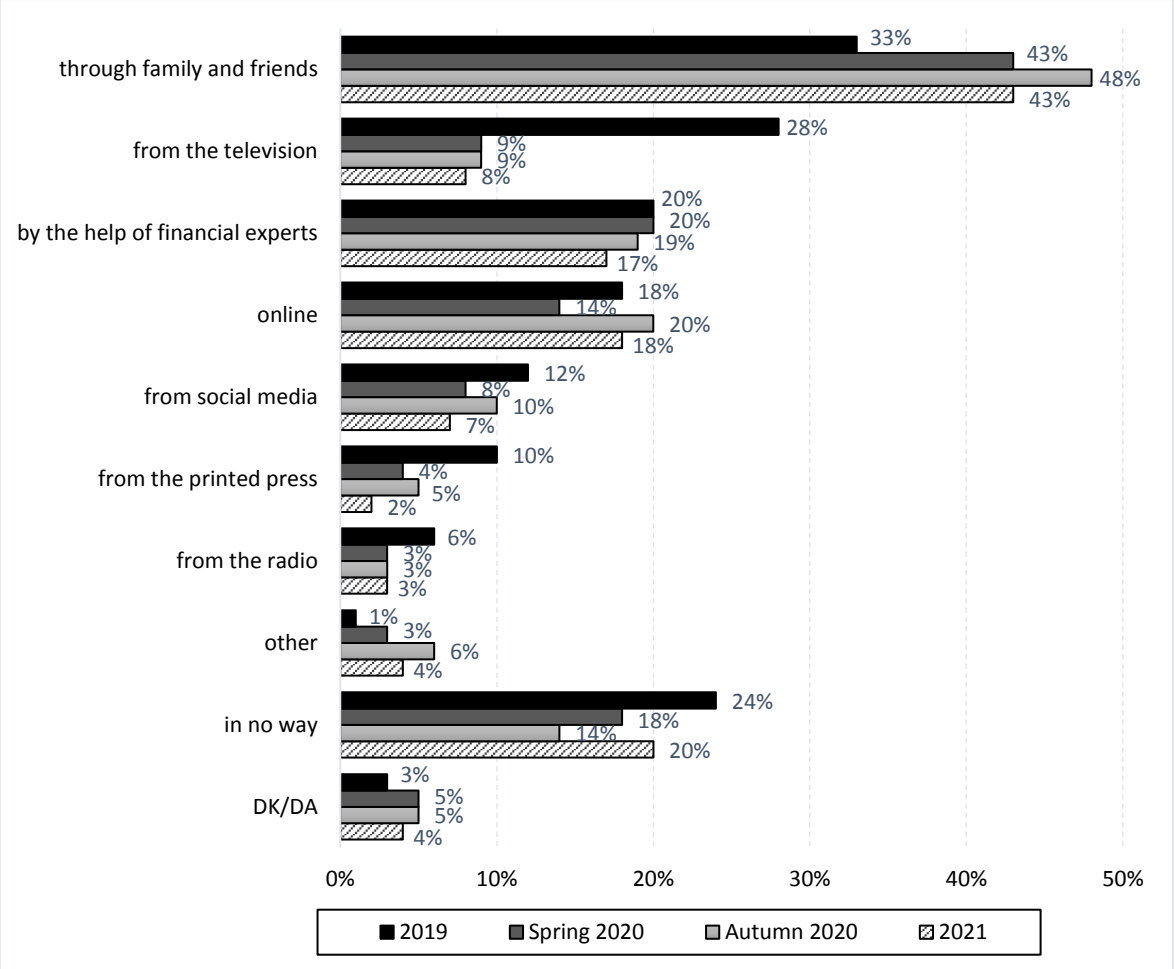

Fig. 5: Way of gaining knowledge on electronic payment methods (Authors' development based on [5; 6; 7; 8])

It is clear that people are becoming more and more familiar with digital payment options through their family and friends at all times, this is how the new information is spreading the most. Compared to 2019, there has been a significant drop in the proportion of people who receive information via TV: for the total population, it was 28% in 2019, before falling sharply to 9% in 2020. In rural areas, the rate was also low in 2021, at 8%. One fifth of Hungarians living in rural areas will not be aware of digital payment opportunities in 2021, while for the total population this figure decreased by 10% after 2019 and was only 14% in autumn 2020. The results show that digital channels (online, social media) are less used to inform people on this topic, so it would be worth improving them. More people could be reached with different campaigns, useful and attention-grabbing advertising, since most people spend their time online, as we saw earlier in the study, browsing social media and news portals. So, these channels should also be used more for information purposes.

The population's views on the areas where they need to improve their financial literacy are summarised in Figure 6.

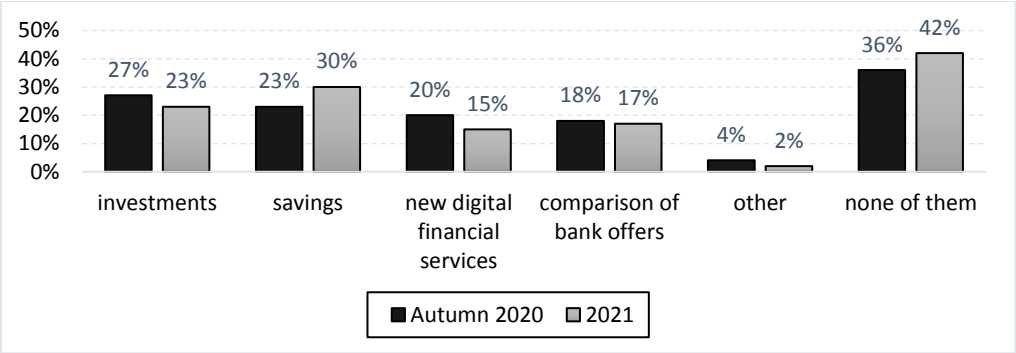

Fig. 6: Need to develop financial knowledge (Authors' development based on [7; 8])

Respondents in the third national survey feel that they need to improve their financial literacy in the area of investments (27%), while in rural areas, a third of the population would like to improve their savings in 2021. Many people also want more information about digital financial services, but fewer in rural areas than in Hungary in general. In both surveys, the proportion of people who do not want to improve their skills in any area is particularly high - 36% and 42% respectively. Including this section of society in the digital ecosystem is a particular challenge. It makes sense to reach them through the media, as mentioned earlier, and to inform and educate them indirectly through advertising, publicity and campaigns. Young people need to be informed about finance from a very young age, so that this kind of knowledge and awareness will be a natural part of their lives.

It is also clear from the data presented that the first wave of the pandemic introduced and encouraged a vast number of people to use digital payments, giving a massive boost to the industry. However, it is essential to see that there are still disparities in the population of rural towns and smaller settlements compared to the central part of the country, so government intervention to gain the trust and inform the rural population is particularly important.

5 Discussion

Digitalisation is now an integral part of today's world: it is the basis for technological innovation and is present in all areas of life. The development of the internet and finance have become closely intertwined, becoming an integral part of each other. The unprecedented growth of the internet has opened up new opportunities for development, opening the way for the development of tools that have changed our lives. New market entrants have brought a number of innovations that have made financial products and services more widely available and made money management more straightforward and more efficient.

Among these innovations, this article examined the situation of electronic payment solutions in Hungary and sought to answer the question of how the knowledge and use of these digital options changed among respondents since the beginning of the pandemic and what the reasons for the changes might be. During the period under review, there were a number of pandemic events and measures that had a significant impact on payment patterns in Hungary.

Comparing the four surveys, we conclude that overall, more people have more digital payment devices than before the pandemic, and a higher proportion of people have internet access. However, in 2021, a relatively high proportion of rural respondents, 20%, still do not have internet access at home, and a third of people will not have the internet on their phones. During the pandemic, the number of people using the internet to manage their finances increased, but the rural population still lags behind. Moreover, even during the pandemic, more than 40% of those surveyed were reluctant to deal with these issues online, even though they had the tools to do so.

A specifically positive conclusion is that, overall, far more people are familiar with all electronic payment solutions than at the beginning of 2019, so in two years, they have managed to broaden their knowledge of these options.

The government has tripled the limit for entering a PIN for contactless payments since April 2020 in a bid to curb the spread of the virus, in the hope that people will touch POS terminals less often. The respondents have taken advantage of this change, with more than 20% more people using their debit card by touch. The difference is significant among those paying by debit transfer, with 31% more people using it in autumn 2020 than in spring 2019,

probably due to introducing the Instant Payment System.
In general, in spring 2021, there was no significant change in people's payment habits compared to 2020, but the rates did not fall back to pre-pandemic levels.
When asked about their reasons for not using these electronic payment options, most respondents said that they were used to paying in cash. On the positive side, however, there has been a 20% reduction in the proportion of people who are deterred from going digital by the complexity of use, and a reduction in the number of people who refer to lack of information and high costs. Most respondents said they would switch to electronic payments if these were safer, simpler, and if they would be better informed. People in rural areas find it rather difficult than in the rest of the country, so they seem to be less informed.
The analysis on the impact of the pandemic has found that for a third of people, the pandemic did not change their payment habits. Among the youngest age group and those with tertiary education, around one in two people now pay more often by cashless means.
The surveys also showed that most people learned about electronic payments from information provided by their family and friends. It was also found that the news about digital payments does not reach people through the various digital channels, so it would be worth informing them first-hand with advertisements and campaigns. This may offer the most effective solution for the future, as the majority of the population uses online channels, including social media in general, for 3-4 hours every day. It would be particularly important to educate the public about investments and ways of saving.

6 Summary

6.1 Conclusion and Suggestions

Summing up the experience gathered, there are significantly more people aware of and using electronic payment options than in 2019. However, there is still a large number of people who are not willing to manage their finances online.
Based on the differences amongs the findings of the four surveys presented in the article, it is clear that people's payment habits can undergo significant changes in response to a pandemic-like situation and state measures. As a result, the overall trend in the use of electronic payment services is increasing. On this basis, it is vital that people's financial knowledge and awareness is further enhanced from as young age as possible through new methods and channels to support the uptake of financial digitalisation, so that more people would be aware of the principles and functioning of these solutions.
In the future, government support will be essential for the further uptake of digital payment solutions and a more balanced spread of digitalisation among rural populations. The government's primary role is to improve information available on the security of digital payment solutions, build public confidence in the new features, and develop and implement programmes to improve the financial and digital skills of the population. Improving the public's perception of security would significantly enhance their willingness to use digital payment services.
Moreover, the expansion of education must be part of a more complex, long-term strategy. We need an up-to-date structured plan made and used by the government, which implements financial study material into the central school system. It should be built up from the basics for the younger generations (e.g., how is money earned) throughout the schoolyears for the older ones (e.g., the basics of taxing and the economy).
One must also not forget the generations already out of the central school system: by creating short, easy-to-use videos we can transfer knowledge among the population. The key is to make a platform well-known and available for everyone.
The population of the rural areas in Hungary proved to be less educated in digital finance. Simple advertisements on the internet, but more importantly in television could reach them as well. Everyone should feel safe and educated enough to use and benefit from the new ways of payments.

6.2 Future work

This paper studies the period between 2019 and 2021. If further research made by EFISZ will be available, this study should be continued. An aspect of the future work could be the impact of new waves of the pandemic and also the economical regression caused – among others – by the war in our neighbouring country, Ukraine.
This paper studies the changes in Hungary only. Therefore, in a future work one should compare these results to the V4 countries or the European Union as well.

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