

BUDAPEST BUSINESS SCHOOL FACULTY OF  
FINANCE AND ACCOUNTANCY

THESIS

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Using novel Digital Payment Methods  
towards the Cashless Society

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## DECLARATION

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Budapest, 12 December 2022

Hájdú Dominik

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## Introduction

Nowadays digital payments are very commonly used worldwide, however, 30 years ago it was nowhere to be seen. Looking back at it, we are already light years past the technologies of that time. Our rapidly changing world in the past decades was highly focused on digital and innovative developments. As technology develops, people adapt to changes and therefore we have digital payment, sometimes called electronic payment these days. Let's mention phones for example. The comparison is unbelievable. 25 years ago people used their mobile radio for calling and these days you can do anything through your phone, for example, navigate to specific locations, browse the internet, share pictures via social media, make money even with trading or hundreds of other opportunities, internet banking and paying for goods and services as well, and all that through your phone. I cannot even see people without their phones on hand, it became a necessity for almost everyone and just like the phone, digital payments improved a lot in the past decades, which have become completely normal for us in our everyday life to use them on a daily basis thanks to their unmatched convenience.

However, this rapidly changing world might have a negative impact for many people, because countries are slowly turning into cashless countries. Year by year the cash flow decreased or almost completely disappeared for example in the Scandinavian countries, but not every country would benefit from the cessation of cash.

In the first chapter of my thesis, I will present several digital payment methods where I thoroughly explain each of them how they work, in what circumstances ought to be used, how secure they are compared to cash, and why are they beneficial and what are their major disadvantages.

In the second part, we get to see a comparison between the largest platform in Hungary against one of the world's leading mobile payment markets which is based in China. In order to compare, I will be using the Simple application, which is not commonly known worldwide, but is not only for OTP bank users; it can be used by others too. From the Chinese side, even though the more famous mobile payment application is Alipay, despite that I chose to compare WeChat pay because it is newer and I personally find it more interesting.

In the next part, I will analyze the cash-out processes in other countries and will compare it with the Hungarian current cashless situation as well. I will mention some of those countries that are the closest to completely terminating the use of cash, and have specific goals when it

will be able to achieve it. Regarding Hungary, I will show the growth of the digital transactions during the years, because there was a significant change compared to ourselves, I will also mention all the efforts that lead Hungary to its current state.

There are lots of benefits in digital payments; it is easily accessible and convenient to use and a lot faster than cash. It has a digital system for recording transactions so it prevents any illegal activity since it is kept under control, therefore it is very safe to use, but later on, in my thesis, I will cover it in more detail. I Will mention all the advantages, and disadvantages of both, cash and electronic payments. There is no such thing that one of them is better in every case because there are many different factors that can be influenced.

During the theoretical part of the research, I had a few questions concerning the topic of my thesis. In the lack of information on the consumer insight whether what is the preferred type of payment method? Which social segment uses which of them, and in what circumstances?

The general aim of my thesis is to show the traditional cash, and future of digital payment methods, and all those new technologies that can project trends, in this context also the possibility of what it takes to become a cashless society.

The study is based on knowing the transactions of various types of alternative payment methods and assessing the extent of transactions of digital payments.

Hence the basis of the first hypothesis is;

H1: Hungarian consumers are apprehensive about cashless payments and more inclined toward the conventional payment mode.

H2: There is no significant variation in how respondents of different ages and gender perceive various attributes of digital payment.

H3: The secureness of mobile payments has a great influence on people regarding their use.

## **1. Digital payment methods**

An electronic payment system is a digital transaction from one account to another using e-payment types. This system is extremely beneficial to both parties, it's instant; much faster than using cash, it has also higher payment security, saves a lot of processing costs, has a low risk of theft, is contactless, and many-many other things I could list, but later on, I will mention the advantages and the disadvantages in much more detail of the digital payment system. However, the purpose of this chapter is to represent the operation of the system and make these e-payments transparent and understand all of them. (Santander, 2022)

## 1. Figure: Different types of E-Payments



Source: Naeche, 2022

### 1.1 Credit and debit card

This is certainly one of the most commonly known and used oldest digital payment methods all over the world. Years ago, it worked a slightly bit differently from a physical point of view because we had to slide our card into a payment terminal, which charged the card with a predetermined specific amount of money to it. Nowadays most cards have near-field communication which is known as NFC by most people. NFC provides us with a contactless payment, which means we get to pay with our card with no physical interaction between the POS (Point of Sale) terminal. Phones, watches, and other smart devices can connect to virtual wallets to manage payments, with that either the credit or debit card can work virtually since it is connected to a smart device that can be controlled through an app and other platforms. In Hungary the most often used app is Simple provided by OTP Bank, although this app can be used by other bank users as well for free.

### 1.2 Mobile payments

Most people prefer paying with smartphones in addition to anything else because this is more convenient than any other method as our phone is always at hand. By linking a bank account, a credit or a debit card with the preferred smart device can make payments through a digital wallet that will be in the phone. With that digital wallet without the need for a physical wallet, people are able to pay for goods and services. No need to worry about wallets being lost or stolen because there is a technology called encryption, which enables businesses or

individuals to accept mobile payments if banks or cards are connected.

NFC is built into every phone therefore mobile payment exists and enables to exchange of information when in close proximity. An NFC tag sends radio waves to activate the antenna in the receiving device which recognizes encrypted transactions. The transaction is processed literally in a second after the device gets close to the POS-terminal (Point of Sale).

There are several more advantages to mobile payments besides not having physical wallets. First of all, people do not have to carry around cash or even count them, because mobile payment substitutes it and the balance can be checked immediately.

Also, very easy to use and works fast which is an essential thing in our rushing life, speed is a key part. Mobile payment lets you finalize any transactions in seconds, even an online booking can be done and processed in a blink of an eye, a little exaggerated, but relatively similar speed.

The moment the card information is uploaded to the mobile payment system, let's say now the Simple application because it will be mentioned in the thesis later on. After the data is uploaded you get a unique identification code called a token, which is used to initiate payments at any merchant location. This code is generated during purchases, therefore it excludes the risk of having the card numbers stolen. While the real credit or debit card information stays untouched and safe, the token is used to execute digital purchases and lower the chances of fraud in a digital transaction process. (Tejeda, 2022)

## **Types of mobile payments:**

### **NFC mobile payments**

As before mentioned NFC payments are used to transfer from one device to another when they are in direct range of each other. It is used to ease contactless transactions in our everyday life.

### **Browser-based mobile payments**

This kind of payment is used in online shopping. At the mobile checkout page, in order to complete the transaction, the required payment information needs to be entered into that card, not the present payment (CNP). Web-based payments don't need to be installed in advance on your phone. It has a built-in interface, which facilitates the process quickly and easily.

### **In-app payments (IAP)**

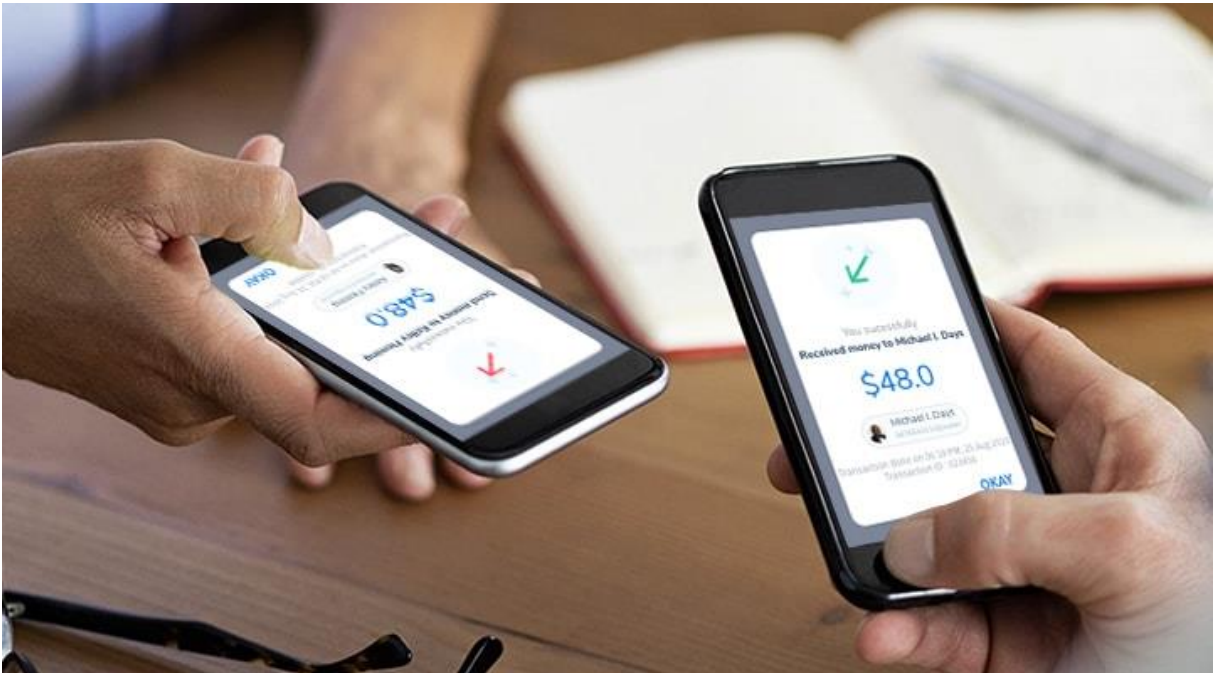


As the title suggests it's an app-required type of payment. It is a service that allows you to buy virtual goods within the application for example paying for parking, E-Vignettes for motorways, or even for game currencies, which boosts your in-game performance and experience. For these apps, only payment information is required in order to make purchases. Usually, these apps are free and have very tempting additional features, items, and functionality. This way it can reach as many users as possible, while most users will purchase some add-ons to boost and improve the enjoyment of the app

**Peer-to-peer mobile payments**

P2P payments are very simple and effective to use. Its money transactions are between two users, which goes through platforms like Cash App, Venmo, or PayPal. As always, the card information is needed and after that it lets its users send money through their smart devices to their family members to help them out, split the bills at the bar among friends, or even pay your friends money that you owe. Both users have to have the same app on which the transaction will go through. You get the money transfer or receiving done instantly. P2P payments do have some expenses to cover therefore they charge the transaction with a small amount of flat percentage fee. However, it is app dependent, because Cash app is totally free even for sending and receiving money.

2. Figure: What is Peer-to-peer mobile payment?



Source: Musienko, 2020

## QR code payment

QR code is a two-dimensional barcode that was developed by a Japanese company. Not everyone knows but the name derives from its simultaneously referred to fast decryption speed and the fast reaction required by the user therefore it's called Quick Response, but no one says it like that.

QR codes can be either on paper or on screen, which can be scanned with any kind of smartphone which has a built-in QR code reader, or can be downloaded through Google Play or Apple store if it is not included in the phone by default, but nowadays every new smartphone can scan it through the camera app, or even a simple bar code reader can be used as well, which was specifically designed for it.

The process can happen in the following ways:

### 3. Figure: QR Code Payment scanning



Source: Vissers, 2022

By using App-to-App payments where both sides open the proper apps, then the user scans the unique QR code given by the recipient through the app. After that, the application leads the user to a confirmation tab where he can enable the payment by using his password or

fingerprint, or any kind of security method, which was chosen beforehand for final confirmation.

There are also some places where the barcode is shown on the bill, buses, websites, or even at the checkout of the online shop. After scanning the code there are many cases where in order to pay, the customers have to manually add their card details. Some stores have their own specific application where the buyer can collect points, which can be applied to discount codes through the app as well.

Even some retailers use QR code payment at checkout. After the final amount is entered into the retailer's POS-terminal, the customer opens the QR code payment app, which allows transactions, and then a unique QR code is displayed on the phone, that contains the card information. At this point, the shop scans the barcode with a scanner to complete the transaction.

Just to mention another usage of QR codes; Years ago were mostly used to access information, websites, and personal verifications, or even used as tickets to festivals, or big events. Everyone can create their own QR code and hide a hidden gem in it somewhere in a secluded place around the city, and only those will find out who find it and scan it. These types of usage are very common to this day. As far as we know, since the national lockdown happened in 2020, QR codes only then became more relevant and socially accepted, because it was a perfect way of payment in distanced payments for example at takeaway pickup points. It provides a convenient, safe and quick payment, therefore, people easily got used to its usage wherever they go and have the opportunity to pay like that, especially at restaurants, bars, or any type of service.

Chinese used QR code payments a few years before COVID-19 happened. Later on, in my thesis, I will cover it in more detail, but in Alipay, which was the most used app back in 2018 approximately 15 million small-business retailers have already accepted the QR code payment.

However, the pandemic has increased its usage rapidly, which no one could have predicted. (Sorensen, 2021)

### **Digital currency payment**

The most commonly known category of digital currency is cryptocurrency. These digital currencies are not regulated or issued by any country's government. It doesn't have any physical forms like coins, these are not physically tangible, they are entirely in electronic form. Cryptocurrencies stay secure because they fully rely on encryption. "It is organized by a peer-

to-peer network called a blockchain, which also serves as a secure ledger of transactions, for example; buying, selling, and transferring.” (Wigmore, n.d.)

Encryption uses complex mathematical algorithms, which form it in such a way, that makes it illegible for any human, who lacks the required knowledge. An encrypted data is called ciphertext. As soon as the transmitted ciphertext gets to the recipient, it needs to be decoded to its original value, therefore it uses the same or a different key to decode it.

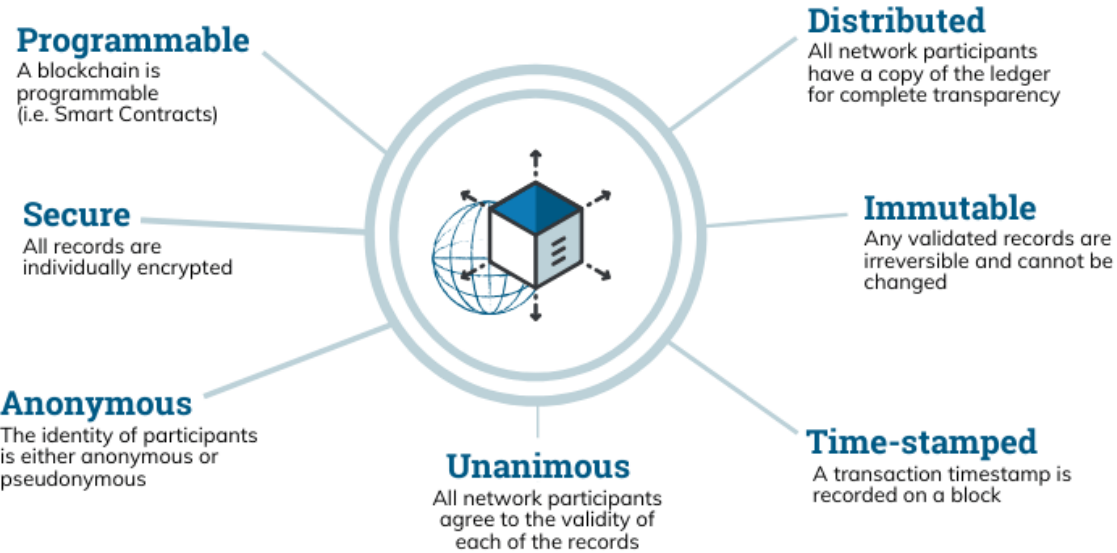
This is an excellent method in order to enhance the security of the process, because when the data is encrypted, any unauthorized person who gains access to it, will be unable to read it.

The biggest, and first cryptocurrency, which is accepted everywhere is Bitcoin, which relies on blockchains. Before getting into more detail about the process of the payment, first I want to define what exactly is blockchain.

It is a software, that records all the information in a way, that makes it nearly impossible to hack the system. Across the entire network of computer systems, the blockchain is duplicated and distributed and practically is a digital ledger of transactions. “Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant’s ledger. The decentralized database managed by multiple participants is known as Distributed Ledger Technology (DLT)” (Marget, n.d.)

4. Figure: The properties of distributed ledger technology

## The Properties of Distributed Ledger Technology (DLT)



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Source: Euromoney Learning, 2020

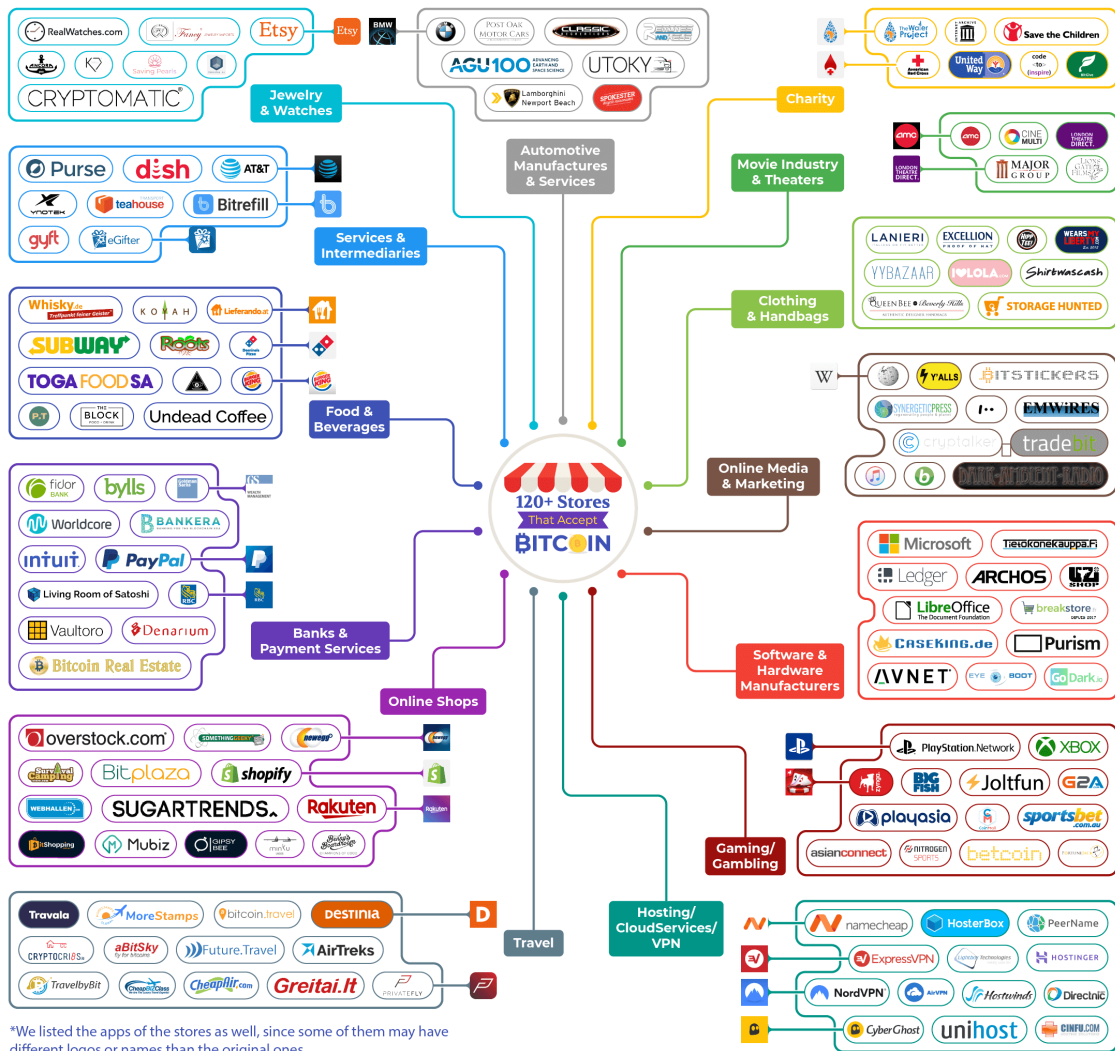
All these distributed ledger versions of the chain play a very important role, if only one of the blocks was changed, it would seemingly be obvious that it had been tampered with. That's the reason why it is nearly impossible to hack the blockchain because the only possible solution would be to change every block in the chain, across all of the distributed versions of the chain. So far no one has ever managed to do this, or even come close to succeeding. Such as Bitcoin and Ethereum, Blockchains are continuously growing. The ledger improves its security whenever blocks are added to the chain. (Euromoney, n.d.)

In order to be able to pay with for example Bitcoin, or any other digital currency, first of all, a wallet is needed, where you can store your currency. There are countless free crypto wallets, which work both on any mobile device and on a desktop, where you can store, pay and receive money. Choosing the right cryptocurrency exchange is also very important, because these sites may differ, therefore it's necessary to choose the most suitable one. Only personal details are required, depending on the exchange and location, and after that everything is set and ready to go.

After the setup, the balance cannot remain 0 if the plan is to start paying with it. A credit or debit card is needed to top the balance, but a little bit of research should be done because the most favorable exchange service should be used, where the price for the cryptocurrency is the best possible at that moment. Afterward, the wallet address is provided to the exchange service and the transaction will be completed in a few minutes.

Strangely, but in a positive way, there are numerous online merchants, that have the option of Bitcoin payments. Since Bitcoin was a rapidly growing cryptocurrency over the years, stores are forced to keep up with the trend and let people pay with them, because nowadays a lot of people own it, and also the transaction is very safe and fast.

5. Figure: Popular stores that accept Bitcoin as payment



Sources:  
 apps.apple.com  
 paxful.com  
 paybis.com

Source: Chapkanovska, 2022

As shown in the figure above, there are plenty of merchants to buy from. The way to do it is just to copy their Bitcoin address and copy it to its designated place on the wallet. After the amount is added to the payment box, the transaction will be completed in a few seconds just like at any other bank transaction. I have even encountered such places in real life when I was walking around the city, and there was a restaurant where there was a big sign written on it, that they accept Bitcoin as well as payment. (Galov, n.d.)

## 2. Comparison between Simple and WeChat Pay applications

The purpose of this chapter is to describe the innovative capabilities of digital payment platforms in with reference to open innovative integration in order to commercialize. On the selected platforms I will do a comparative analysis, and it will take place between the most commonly known app in Hungary called Simple, and one of the greatest applications in China, which is an app feature of the social media app WeChat, but just as efficient as Alipay named WeChat Pay.

The reason I chose these two platforms is because a more developed and more widespread mobile payment application like WeChat Pay can make it more visible to see and understand, what is available in our country Hungary and what other opportunities are there to improve on, to possibly become available in the future.

In the interest of comparing the 2 mobile payment platforms, it is essential to know why is WeChat Pay one of the leading digital payment platforms all over the world.

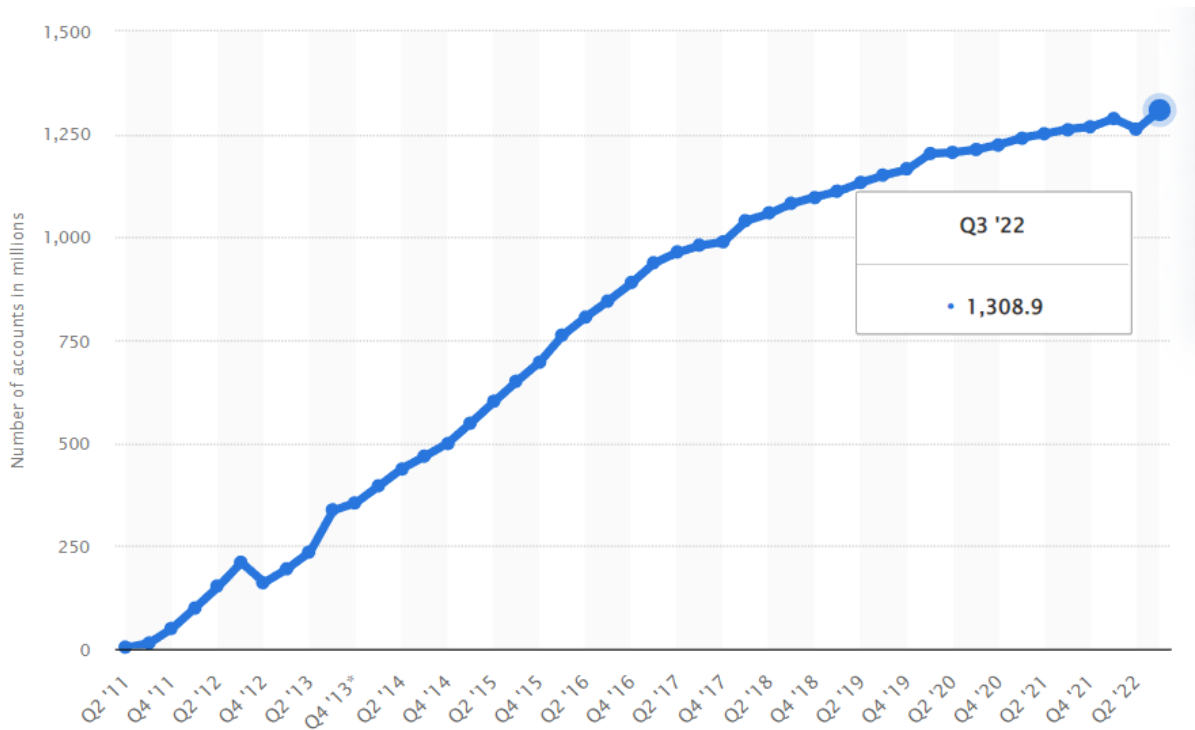
### 2.1 WeChat Pay

The initial release of WeChat was in 2011 and after 2 years, the WeChat Pay function was 9 years ago in 2013 by the biggest social platform with over 1 billion users and more than 70 million people use WeChat abroad. WeChat is a chatting application in China and its mobile payment method is completely integrated into the social media platform. It was developed by one of the most valuable companies in the world and belongs to Chinese tech behemoth Tencent. The reason why it became so popular rapidly is the built-in mobile payment function. (Wang, 2017)

The purpose of WeChat Pay is to quickly make payments with the use of smartphones, wherever and whenever they want to, without the use of their physical money. WeChat Pay has a lot of services and options to pay in many different in-store and online stores, but I will extensively explain its functions later on in my thesis.

Alipay and WeChat Pay are both very useful and popular applications. WeChat Pay might be easier to use for foreign people, but these apps are very hard to compare because both are very effective with small differences. However, WeChat Pay is a rapidly growing app as the figure shows below. In early 2013 WeChat had 160 million active users, and within two years the number of active users tripled and reached 550 million. Every year on average there is a 150 million increase.

6. Figure: Number of monthly active WeChat users in third quarter 2022

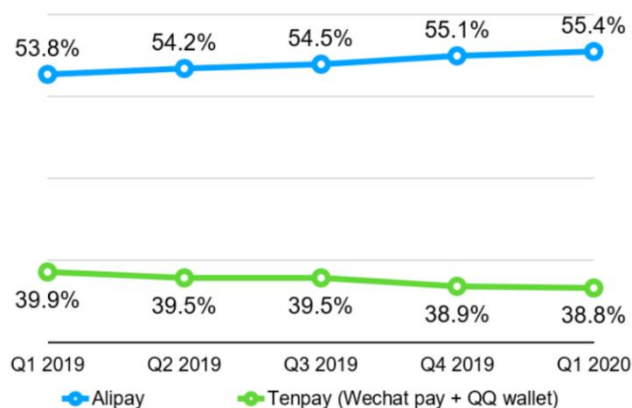


Source: Statista, 2022

On the other hand, Alipay exists since 2004 and just after 4 years, it reached its first 100 million active users, which is also a very impressive progression.

According to Adchina data, In 2020 in the Chinese Mobile Payment market continued to lead by Alipay with a market share of 55.4% followed by Tencent at 38.8%, and jointly took up accounted for 94.2% market share by transaction volume in the Chinese Mobile Payment Market.

7. Figure: Chinese Mobile Payment Market Share by Transaction Volume Q1 2019 – 2020



Source: iResearch, 2020



WeChat Pay can be downloaded in Hungary as well, but unfortunately, its use is limited, and only in China can be used to its full potential. In China, however, bank cards were never that popular, so for them as soon as smart mobile devices spread through the country they easily switched to mobile payment. Since WeChat Pay is owned by one of the most valuable companies in the world, Tencent, it was easier to accomplish such big achievements in a such short period of time, they literally made these digital payment methods acceptable nearly everywhere, from supermarkets to street musicians.

## **2.2 Mobile payment acceptance in China**

The data for the selected study were collected from Wei-Chuan Chen, Chien-Wen Chen, and Wen-Kuo Chen based on their collective work in 2019 “Drivers of Mobile Payment Acceptance in China: An Empirical Investigation.” The results will be briefly summarized.

China’s use of the Internet and mobile devices has expanded as a result of the rapid growth of mobile technology in today’s life. Mobile payment is therefore a continually developing and immensely valued in China. However, the purpose of the study is to understand how to stimulate customers to adopt mobile payment in China. One of the main questions, that needs to be answered is the factors facilitating or inhibiting the intention to adopt mobile payments in China.

In the study, they approach things from multiple perspectives, therefore, in terms of personal factors, three variables were added to the study; absorptive capacity, affinity, and personal innovation in IT (PIIT).

According to the analytical results, 257 respondents contributed to the analysis. In the gender distribution, there were 148 females and 109 males. Regarding the age distribution, most of the respondents belonged to the less than 25 years old (34.6%) group. The majority of the respondents have a bachelor’s degree (57.6%). Out of the three big platforms; Alipay, WeChat Pay, and Union Pay, WeChat Pay turned out to be victorious with (43.25%). Considering the experience usage of mobile payment services, the highest option was “more than 3 years” with 54.9%. Of the total, 72% of respondents use mobile payments on a daily basis, while 18.3% used mobile payments at least once per week. Regarding how much money was spent per consumption in using mobile payment services, the highest ranking, responses were “less than 100 RMB” (5 900 Ft) and “100-500 RMB”, accounting for 60.7% and 27.6%.

In the questionnaire, the first group of questions the convenience of the perceived transaction was investigated, as how easy it is to use mobile payment to accomplish payment tasks and the summarized result of aggregated responses was nearly in full agreement.

The second block of questions investigated the comparison between the traditional payment methods and mobile payment. There is no limitation in time and place and aimed to find out if it is time efficient. The answers to almost all of the questions approached the full positive agreement.

The third block of questions analyzed the concern about the mobile payment system collecting too much personal information from the transactions, the lack of compensation, and the risk of data theft. Even though the results weren't in full agreement or disagreement, it is not the highest influencing factor.

In the last group of questions, the usage of mobile payment has been investigated, if they use it on daily basis, or if the system would be down, would they even miss it? The mostly answered option was "mobile payment is important in my life". Considering the answers, the conclusion was unilaterally in favor of it and only a small amount of the respondents answered the complete opposite. (Chen, 2019)

## **2.3 Privacy Policy**

WeChat Pay can legally dispose of the following personal information when registered on the site: first name and surname, phone number, zip code, and address and other contact details such as email address and phone number. Bank card numbers and expiration dates including the CVC code, which can be found on the back of the bank card. Some of the information needs to be verified, therefore a copy of an identity document needs to be uploaded. There is a possibility to sign up for a newsletter to always be alerted when there is a customer service information provided by them. WeChat Pay automatically uses any of the information above to create aggregated and anonymized data in order for them to find out what to improve on to make out the most of it.

During the service usage, they automatically collect technical usage information, which includes IP Address, device information (operating system), mobile network information, and basic information about the web browser users prefer to use. (WeChat Pay Privacy Policy, 2018)

In contrast, the Simple application is much more minimalistic concerning the privacy policy. In order to use the application created by OTP, only a few mandatory pieces of information are required; full name, date of birth, e-mail address, phone number, and of course password is also required as well for those who want to use the E-wallet service.

Within the scope of certain services of Simple System, there is some additional information, that is required in order to use those services. For online Order delivery address and bank card information is needed. For the Parking and Motorway vignettes purchasing service the vehicle's license plate, type of the vehicle, and the vehicle's country denomination are required. In order to purchase a transport mobile ticket, the ID card number must be added to validate the transaction so the customer can prove that it's his and only his ticket and did not share it with anyone else. The required information is based on the service, and there are a lot of other services, and each of those needs a similar and yet different combination of information.

WeChat Pay and Simple by OTP are similar to each other in terms of policy, however, there is a big significant difference between these two applications. WeChat Pay has access to a copy of the identity document, while on the other hand Simple draws attention not to upload any document to the Loyalty Card option, which is suitable for personal identification because Simple does not undertake to store such kinds of cards and, therefore does not take any responsibility for that, and specifically excludes its responsibility in this regard (Simple Privacy Notice, 2022)

## **2.4 WeChat Pay**

Across 40 countries and regions that support WeChat Pay, including the United States, United Kingdom, Australia, Hong Kong, Singapore, Japan, Italy, South Africa, Canada, Thailand, and more. 13 different currencies are covered by WeChat Pay, GBP, HKD, USD, JPY, CAD, AUD, EUR, and KRW. For unsupported currencies, the trades will be made through on the US dollar. Anywhere in the world, where a WeChat Pay logo is spotted in retail shops, restaurants, bars, and many other places, or even on eCommerce platforms, consumers can have the opportunity of using the convenience of WeChat Pay. (AdChina, 2020)

8. Figure: WeChat Pay logo, which enables the use of WeChat Pay



Source: PYMNTS, 2022

According to Kafkadesk data; in 2019 Hungary exceeded for the first time the quarter million mark because in that year, more than 277,000 Chinese tourists visited Hungary. There is no precise record for the following years, but unfortunately due to pandemic, I doubt we overpassed that number.

In that exact year, (2019) for Chinese tourists' convenience, Hungary introduced WeChat Pay, Alipay and China Union Pay into Budapest Airport and the Heinemann Duty-Free. Hungary was officially among the first who rolled out these platforms for Chinese passengers, thus they could use their most preferred application, which they use on daily basis back home. They can now enjoy the cashless life even abroad and enjoy comfortably the purchases of products or services.

The operating principle is the same, everywhere where WeChat Pay is supported, they can just read the QR code with the help of their phone and without any physical money, the transaction goes through. (Future Travel Experience, 2019)

## **2.5 In-app features comparison**

The In-app features of Simple are very similar to what WeChat Pay has. In Simple currently, the following services are included; the user can buy tickets to concerts, parties, or cinemas even discounted, or last-minute tickets as well. Books, food, and taxi can be ordered through the application, checks can be paid in by QR code, and since unexpected car accidents

can happen to anybody, also Vehicle assistance insurance can be insured. Parking e-Vignette, Nationwide tickets, and BKK tickets can be bought as well, and if the users feel generous, then they can also support a few charity programs as well.

While on the other hand WeChat Pay apart from these basic functions provides us with many different kinds of useful features, that can be used for pretty much everything. Through the application, users can buy plane and train tickets, food to order, movie tickets, pay the bills, plan holidays, book hotel rooms, and many-many other small services, which helps people in their everyday life. There is a possibility to turn on the location service and by that, the app shares the exact location of the users and is able to see each of their friends where they at. WeChat uses GPS to display the nearest services around the area. With the help of QR codes in-store and online payment is included in the app.

Some of the services are available through other big applications, which are built-in WeChat, for example, Didi, which is one of the greatest companies, that provides all kinds of app-based transportation services. Taxi, private cars, leasing, electric vehicle charging, including sales, and bike-sharing where people can pick up those specific bikes and return to any parking spot after their journey. It is a very cheap way of traveling around the city and there are plenty of bikes scattered around the city.

9. Figure: Ofo Bike-sharing application to rent a bicycle



Source: Lulu Yilun Chen, 2017

Taobao consists of many smaller shops and is mainly used by Alipay, and on the other hand, JD (Jing Dong) is available through WeChat, because of the partnership with Tencent, and it offers different kinds of products of different brand stores on their website, but also have their own delivery system with warehouses, and delivery vehicles.

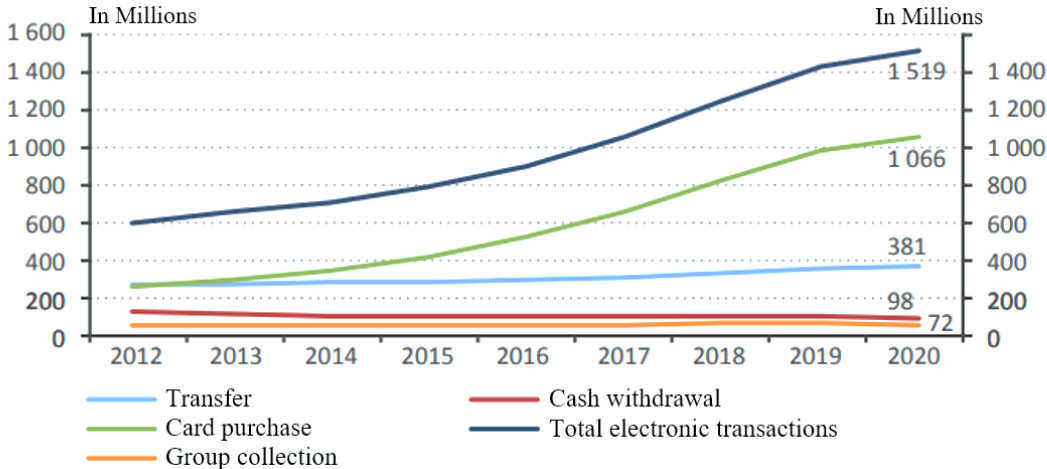
Besides these, a red envelope can be found, which is a traditional way of gifting. Red envelopes are usually given at birthdays, weddings, anniversaries, graduations, or any other special occasions by the family or relatives. They call them red envelopes because in China that's their "lucky" color. (Coy, 2020)

### 3. The possibility of a cashless society in Hungary

In Hungary, the number of digital payment growth could be experienced way before COVID-19 because it secured a convenient, quick, and a secure way of payment. Nevertheless, after the coronavirus, cashless payments exponentially increased the immediate payment, and the contactless technology as well. Hungary has a goal, to eventually get rid of the cash in a material sense, and turn it into digital. Right now, the rival of cash is any kind of electronic payment. According to Vasas József (2022), Hungary will be trying to decrease the cash payments down to 50% by 2030. Regarding the domestic instant payment infrastructure, it seems like there is a huge demand for that, and the vision for cashless payment is within the foreseeable future.

In this chapter I will present the pros and cons of digital and cash payment and in what situation they should be used. In the second part of the chapter, I will also mention the current status in Hungary regarding cashless payment and other international experiences.

10. Figures: Trends in the number of main payment operations



Source: MNB, 2021

## **3.1 Application of digital payment**

The novel digital payment methods allow assuming that cash will soon cease to exist. In that subsection, I will research that theory, if that really is possible because the estimated final termination is in the public mind since the late 50s.

Humanity tries to replace cash with any alternatives since then, interestingly though in the practice view of point it shows that people have an attachment to physical money, and it is not certain at all, that cash will ever disappear from our everyday life.

I will present its pros and cons and look into how ideal and realistic would be a cashless world.

### **3.1.1 Advantages of digital payment**

As long as people have their card or phone in hand, they have convenient and immediate access to their money. The balance can also be easily checked, and others have absolutely no clue how much money is in the bank account, so the chances are less, that thieves will attempt a crime, and try to steal because it is also trackable and can be easily proven who's money was it in the beforehand. If somehow, they manage to steal the credit card or the phone, the account can be locked very quickly, therefore if we lose them, there will not be any tragedy. Users can easily track their expenses, therefore it has an impact on budgeting the expenses as well.

When going abroad it is not necessary to withdraw money to be able to pay with the local currency, because most of the countries are capable of accepting digital transactions, then only a smartphone is needed and everything will be taken care of.

Makes any only purchases more practical, than cash, because there will not be any extra fee after delivery, since it was paid beforehand, at the time of the order. Also, there are some websites, which are cash-free zone and there is no other option but to pay with a card. Some of the online or in-store offer great discounts and attracts more customer this way, passively forcing the customer to use digital payment. In order to increase the number of digital payments, the government has to come up with many other discount ideas.

Banks are responsible for the money in the account and it is their duty to keep it safe, therefore despite the amount it will remain secured in the account.

### **3.1.2 Disadvantages of digital payment**

Since there is no verification during the online transaction, it is impossible to identify if the person who paid claims to be the owner of the card, unlike when paying with cash. As soon as somebody loses their cards, it must be locked immediately, otherwise, it can be used for purchases and complaints cannot be filed in order to receive a refund. A stolen card can lead to identity theft and forgery.

Unfortunately, it starting to get more common, that cybercriminals try to trick people, or hack them, to get access to their data, and exploit them, and they have a high chance of getting away without getting ever caught.

The older generation does not have the knowledge about using a smartphone properly and they refrain from that technology and continue to use the traditional cash payment and this is a huge drawback in order to become a cashless society.

Since online payments are software dependent, there can always happen a system failure and at crucial moments it can be very inconvenient. Maintenances are always announced in advance and happen at night when the activity level is the lowest, but it can still cause annoyance for online shoppers.

### **3.1.3 Advantages of cash**

Even though the technology would be capable of making a cashless society to exist, the source of the problem is excluding cash completely and only relying on technological devices without the use of any cash, however for several social segments in most cases these opportunities are not given.

There is no doubt, that the greatest advantage of cash is that it is accepted literally everywhere. People do not carry around all their cash in hand, therefore they cannot spend more, even though they wanted to. Also, psychologically, it refrains from spending a lot, because people tend to spend less if they visually see the cash handed over, rather than just swiping cards or using mobile payments, where money becomes virtual, and changes the view on how much we actually have, and how much we can spend. Situations like this force us to save money and spend only what is in the budget.

There is no possibility of risk of personal data or account theft. Since the consumers hand over money themselves, there is no personal data involved during the transaction, therefore their personal information remains safe.

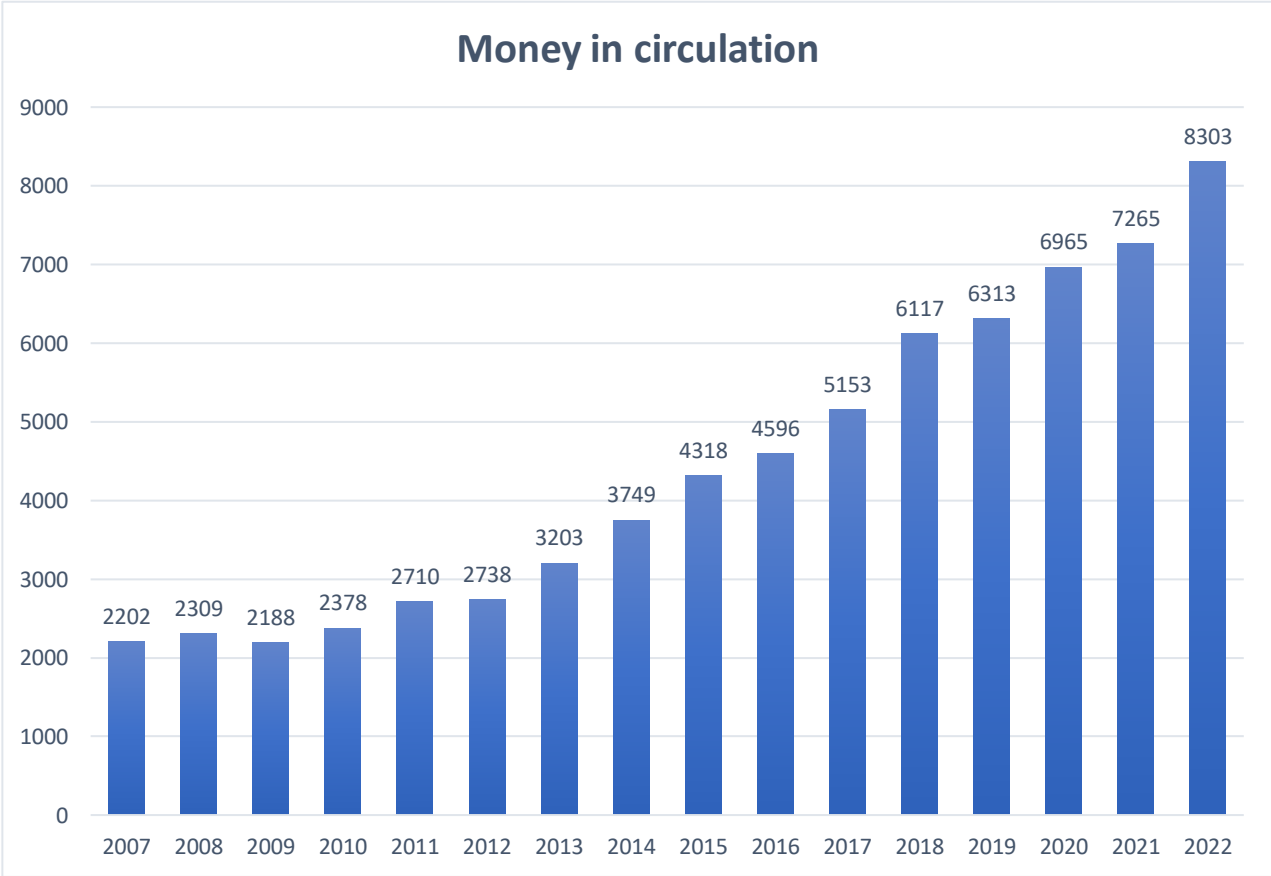


Cash is instantly accessible, and when there is a big purchase, people are more likely to prefer cash over an online transaction. In this case cash is way quicker, because some certain security measures of the entities slows down the process. Cash is just given to the other party, and the transaction immediately goes through and no need for a third-party intermediary, and there is no transaction fee at all.

### 3.1.4 Disadvantages of cash

In Hungary, 7265 billion forints of cash was in circulation in 2021. This number has increased to 8303 billion forints of cash, which is a tremendous amount of money, and unfortunately, it keeps going up. (Origo, 2022)

11. Figure: Money circulation in Hungary



Source: Own editing MNB, 2022

On a yearly basis, it costs hundreds of billions to maintain that, and it is all paid by the taxes of citizens. This kind of obligation includes the cost to print bills and mint coins, when

there is too much money on hand, in some of the cases companies need to be hired in order to transport the cash into a safer place, for example, banks hire a cash-in-transit crew to transport the money in vehicles or by foot. Banknote destruction has a very important role, in the element of clash the cycle. To burn, and destroy the damaged notes and replace them with new ones is not a cheap entertainment.

It is a commonly familiar situation for everyone when paying with cash and have to count the little coins to make the payment less complicated, meanwhile, everyone else in the queue is waiting for it, not to mention the large denomination notes, when the cashiers cannot even give back the change precisely, or they will not accept those large bills at all.

There are no records of transactions after any transaction, as a receipt is not always received. Therefore, it favors the operation of the black market, since it is untrackable when paying with cash.

Saving cash at home is also risky because whatever happens to the house, for example, if it sets on fire, there is nothing to do about that. It is also exposed to theft and also loses its value over the years due to inflation year by year. Cash can be kept in banks as well, so it is not the owner's responsibility but the banks. Cash can be destroyed, for example a car or any kind of vehicle accident or disaster caused by nature, and the money is no longer in such condition, that the owner of the money could return it to the bank to exchange it. Physical currency can be lost and will be a nerve-wracking search to find them.

Carrying cash around can be stolen just as the cards, but cash does not have a canceling option, and money is returned, even if something was bought already from it and was used fraudulently, however cash cannot be returned, only if the police caught the thieves and the money was not spent.

On the other hand, cash should be immediately accessed, so it is a must to keep some cash around if there is an intention to pay with it, otherwise, it might end up being a helpless situation.

Nowadays there are a few things that cash cannot be used for. In order to exclude the discomfort, plane tickets are usually bought through online payment and some of the airlines

don't have the alternative option to buy the flights with cash.

Any large payment causes discomfort for the buyer because the bank needs to be contacted to request a big amount of money withdraw. Even the fear of carrying such amount of money to the seller.

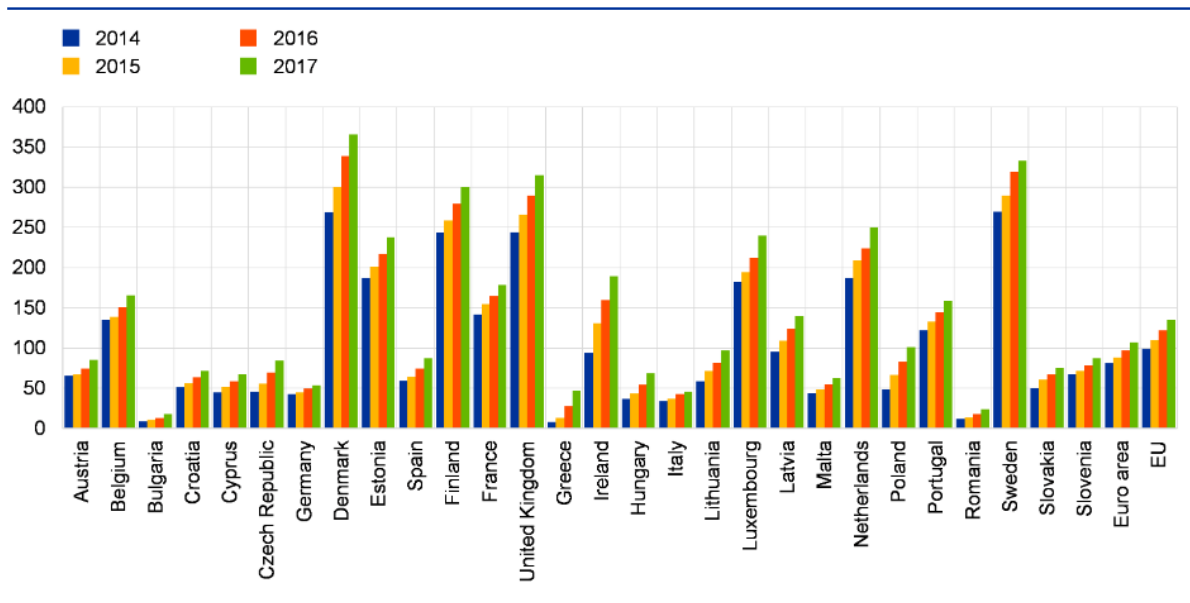
### **3.2 International experiences with cashless payments**

Due to technological developments, the implementation of a cashless society is more prominent in the northern countries of Europe, they appear to be on a path to totally exclude cash. In Sweden, the technology is close to making cash completely disappear from everyday use. 95% of the transactions are digital, and according to the central bank, Riksbank Swedes paid roughly 13 percent with cash in retail payments, compared to the world average, which is 75%, so it would not be surprising if the first cashless society would be achieved by Sweden. According to predictions in 2023, Sweden will go 100% digital and will become the first cashless society nation in the world. Businesses that still accept cash, are going to stop accepting cash payments, more precisely by March 24, 2023, and only digital payments will be good to go. Coins and banknotes will not be destroyed but will lose their value since they cannot be used literally anywhere in way of payment, although, they will be museum pieces. In 1967 Sweden was also one of the first among the countries that installed automatic cash machines. As it should be, Swedes were the first country in Europe to introduce banknotes in 1661 and 362 years later, predictably they will be the first ones to exclude them. (Fourtané, 2020)

Going cashless has a consequence for beggars as well. There is a funny and yet very interesting story according to Mike Dang (2013) publication, there was a magazine in Sweden, called *Situation Stockholm*, the publications were sold by a homeless person who got to keep half of the income. However, due to the lack of cash, it was hardly impossible for the homeless to gain money from sales, therefore the chief executive officer of the magazine gave a credit card reader to the homeless in order to gain some legitimate money from work. (Dang, 2013)

As shown in the figure below, all the Nordic countries in Europe are way ahead of any other country. Nordics have the highest number of card payments per inhabitant, while Hungary compared to these data has a development lag against technological growth, because according to the figure, Hungary is the fourth from the back

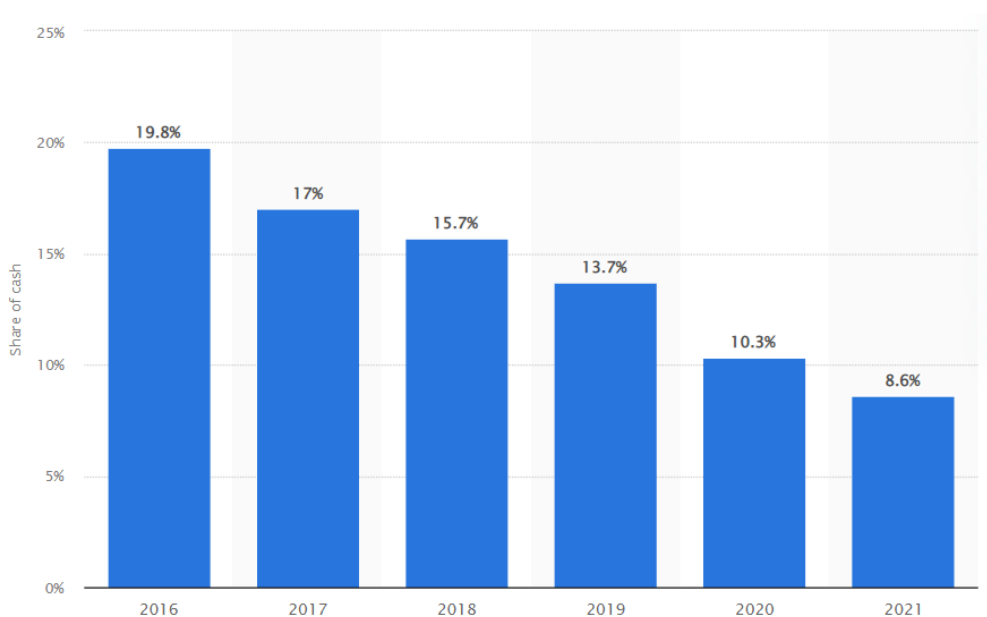
12. Figure: Number of card payments per inhabitant in Europe (2014-2017)



Source: European Central Bank, 2019

Just like Sweden, Denmark wants to operate on the same principle, the government is considering giving the option to refuse cash completely for petrol stations, bars, restaurants, buses, and trains to become totally cashless in order to mitigate crime incidents. Some of them are already not obliged to accept cash, since 2016, but there are still some places where people can still pay with cash. (localDK, 2019)

13. Figures: Share of cash estimate at point of sale (POS) in Denmark from 2016 to 2021



Source: Statista, 2022

According to Statista report, there is no data on the actual cash usage, and this data is simply based on the cash payment transactions, and withdrawals from 2016 to 2021 and as seen, Danes decreased the amount of cash usage by a little bit more than 11% and shows a noticeable improvement year by year on its way to eventually become cashless. (Statista, 2022) Taking into consideration the well-developed payment system, Denmark is barely behind from Sweden in the use of cash, and unlike Sweden, the Dane government set the goal that by 2030 the whole country will not use cash anymore. For the Swedes, as I mentioned before they already set the exact date to abandon cash for good, and it will happen within less than a year from now. Finland and Norway have similar goals just like Denmark with the years 2029 and 2030 at latest. (WorldLine)

Developed countries, where the salaries are high, and despite the fact that all the high technology is given does not necessarily mean they are keen to become a cashless society, let's take for example Germany, where even though all the card infrastructure established, surprisingly Germans still prefer cash over any digital payments.

According to research, an average German's wallet has twice as much as an American, Australian, Dutch, or Finnish one; converted into dollars it's 123 dollars on average and 82% of the payment transactions take place in cash, and generally speaking, every third German owns a credit card. (Turzó, 2016)

The Middle East also carries out processes on Israel in order to become a cashless society. The Israeli government in 2014, officially established a committee that will examine ways to eliminate cash from Israel's economy in order to lower criminal activity. Tamar Bracha, who is in the Executive Charges on behalf of the Israel Tax Authority (ITA) said; "The goal is to reduce cash fluidity in the market mainly because crime organizations tend to rely on cash. By limiting the use of it, criminal activity is much harder to carry out". (Katte, 2022) According to a 2016 data, the black market is approximately 25% of the Israeli GDP. (Saks-Mcleod, 2016) A new law was set in 2022 August, that will ban payments of large sums of money in cash and bank checks. Due to a statement by the ITA, these new laws were issued in an attempt to fight crime, money laundering, and tax non-compliance. Any payment to businesses above 6000 NIS (~ 1700 USD) must be made using any digital payment method, previously it used to be nearly double the amount; 11000 NIS (~ 3200 USD). Trading between private citizens is limited to 15000 NIS (~ 4360 USD). People who violate the new restrictions mentioned above will be considered a crime and can have serious consequences. (Koplewitz, 2022)

### 3.3 Current status in Hungary

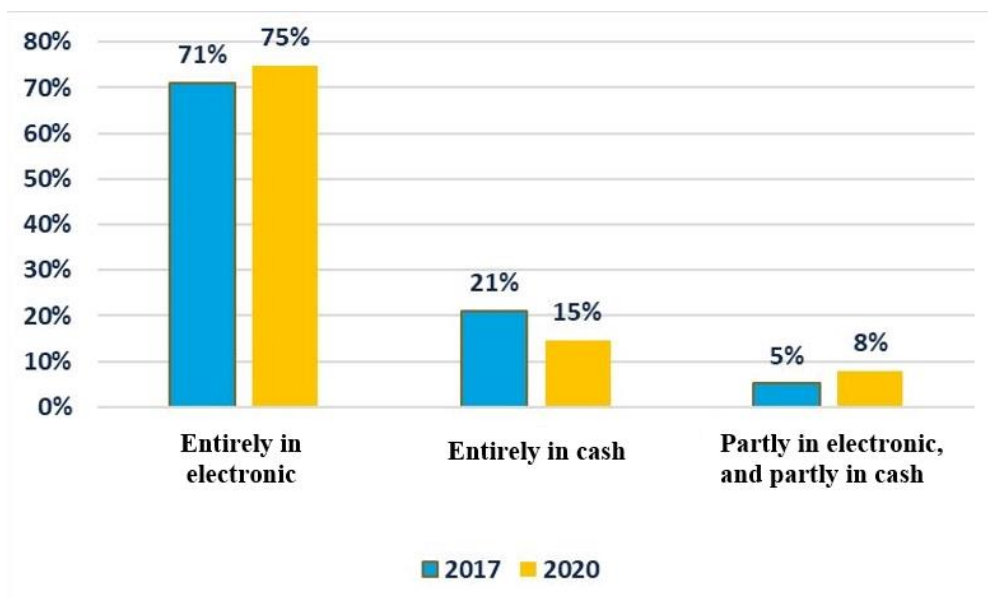
In Hungary, the cashless society is far-far away yet compared to the Scandinavian countries, but in this chapter, I will examine the current process on the growth of digital payments.

Just as in other countries, which are roughly close to being fully digital, because of the well-developed technologies, Hungary is also developing, however, in our country, the people prefer both types of payments. The pandemic in 2020 has significantly increased digital payments in our country.

The purpose is to increase electronic payments to 50% compared to cash payments by the year 2030. It may seem kind of a low ratio, but we need to take into consideration that this index in 2010 was nearly 8% and after almost 10 years, in 2021, it has increased to 30%. If there will be no significant increase during the years, then 50% by 2030 seems to be an achievable goal. Based on the Data, electronic transactions can compete with cash transactions. During these 10 years, the number tripled of the POS terminals to 240 thousand and the number of payments with cards increased fivefold. Card transactions annually increased by 20% and after the COVID-19 pandemic, cash withdrawals increased as well since people could go back to their workplaces. (Magyar Nemzet, 2022)

For the Hungarians, it feels more secure if they have their salaries in hand, but according to the MNB data, in 2020 more than 75% of the people got their income electronically, 15% received their salaries in cash, and 8% of them were partly electronic and partly cash.

14. Figure: Form of regular income and its changes between 2017 and 2020



Source: MNB, 2020

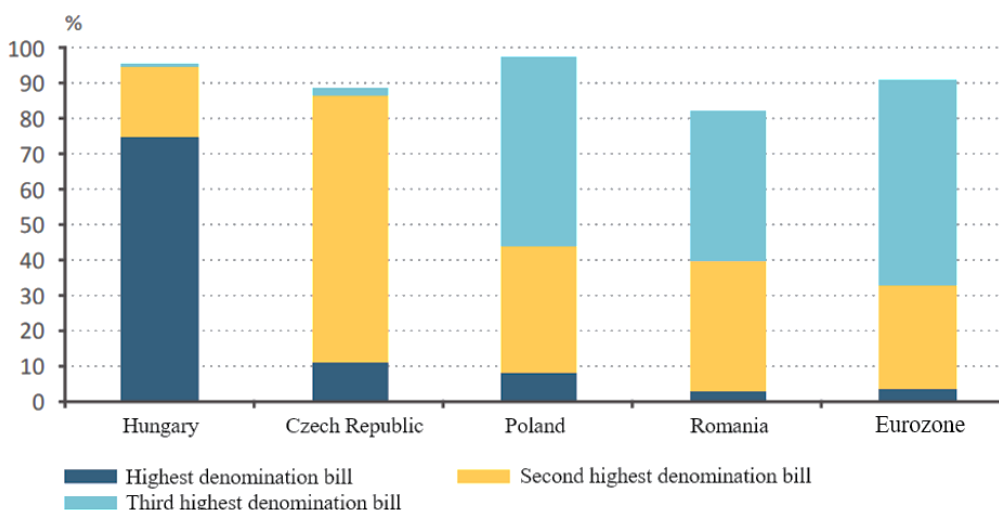
Nowadays for most of the people, it is a basic thing to receive a salary electronically, from which they withdraw as much money as they please. There is a smaller proportion with their decreasing number, who receive their payments exclusively in cash in the Hungarian economy, but these workplaces mostly in the case of manual workers, who have at most a primary school education. (Deák, Nemecskó, Végső, 2022)

As on the 11. figure can be seen, Hungary has an excessive cash balance, therefore the black market spreads effortlessly in the economy and makes 20.49% of the GDP, which is very high compared to the EU average, which is 18%, and for the Western countries it was only 7.17%. According to these data, Hungary is seemingly above average and that is the reason why we should reduce cash transactions and prioritize electronic payments. In 1991 the shadow economy was nearly 32% in Hungary, so even though the current number seems to be high, during the years it has shown a downward trend. (Global economy, 2019)

All the technical conditions are given in Hungary to use digital payments on a high-quality level, yet Hungarians spend a lot more considering the surrounding countries. There is still a lot to improve in the field of technology, but seemingly more, and more people use digital payment methods than cash.

As it can be seen in the figure down below, Hungarians have a conspicuously lot of large denomination currency, which are not only used for payment purposes, but for savings. In order to achieve a decreasing value in the future, Hungarians either should have an available favorable, attractive yield from banks, reducing banking, and transaction fees and also the instant payment system, so it can lead to lesser cash in hand, and to produce closer values to the Czechz or the Eurozone. (Végső, 2020, p. 23)

15. Figure: The share of the value of large denominations in the increase in cash between 2008 and 2018 occurred in some countries of Central and Eastern Europe and the Eurozone



Source: MNB, 2019

### **3.4 Examination of the questionnaire**

The research was conducted by a quantitative methodology, with the purpose of getting to know the opinions of ordinary Hungarian people about digital payments and just the mere thought of living in a cashless society. The survey could be completed anonymously, through the web page; docs.google.com, which served a perfect purpose for it, in order to find out answers to general questions.

With the questions, I wanted to get a broad picture about the Hungarian citizens with what regularity do they use the innovative digital payment methods, more precisely which of the alternative payments they use and what kind of factors can have an influence on their decision on selecting the favorable method. Also, compared to their average monthly net income, to what extent do they use digital payments, where I gave periodical options to choose from.

There are 15 questions in the survey and pretty much all of them are multiple-choice questions. The only open question, that requires a short answer is the first one, where the respondents need to answer, what county they live in. Sometimes there are multiple answer options as well. In most cases, there are Likert scale questions, in order to measure the attitude of respondents whether they agree or disagree on something. I set all the questions to be mandatory.

The questionnaire can be found in the appendix, which was built into 3 parts:

- Questions about the respondent demographics
- Questions about experiences/usage of alternative payments
- Questions about opinions of cash and digital payments

In the interest of being able to analyze the result, I wanted to fill out the survey with at least 100 people of different ages, to have wider payment habits, because my assumption is, that amongst the youth it is more commonly widespread to use alternative payment methods, unlike the elderly people who probably prefer cash more. This is the reason why I made that empirical research, which shows the payment habits including the income situation of all age groups.

Number of completed questionnaires: 117

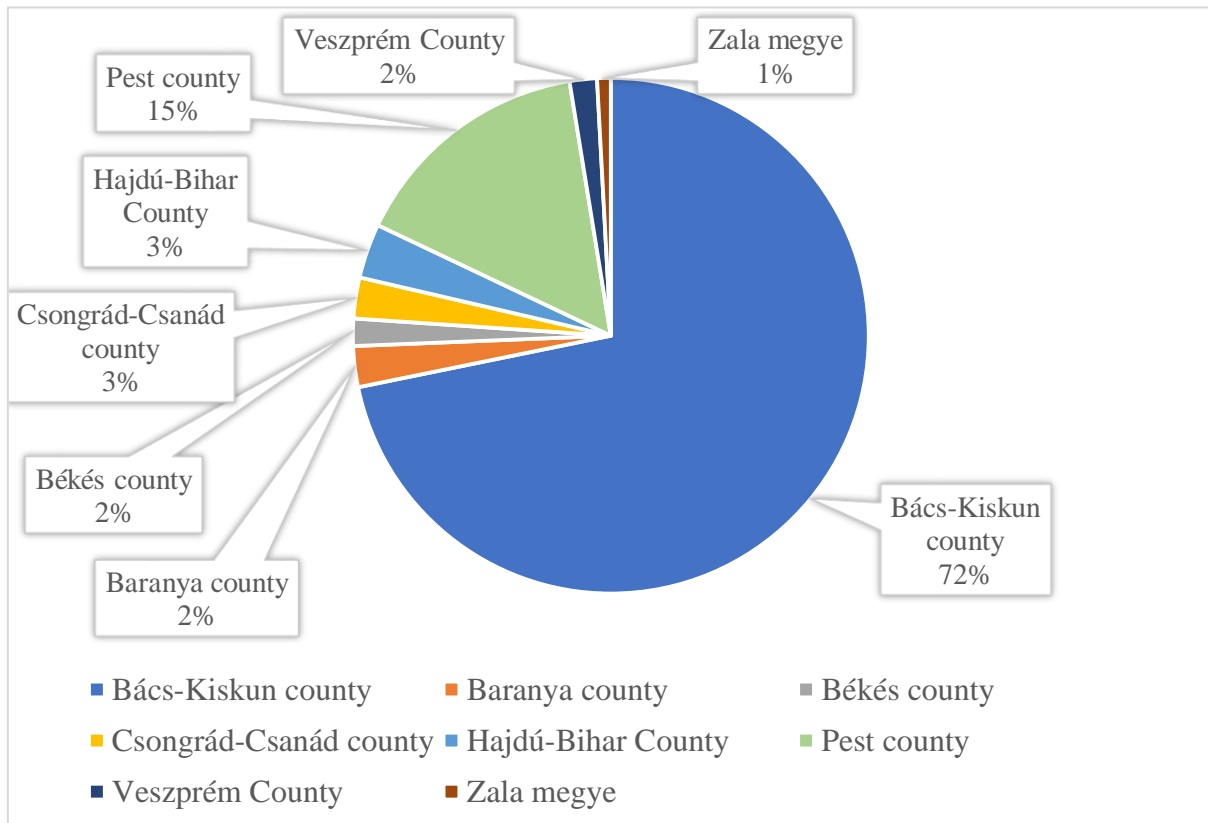
Date of evaluation: 2022. November-December

### **3.5 Results of the questionnaire**

#### **Demographic information of the respondents**



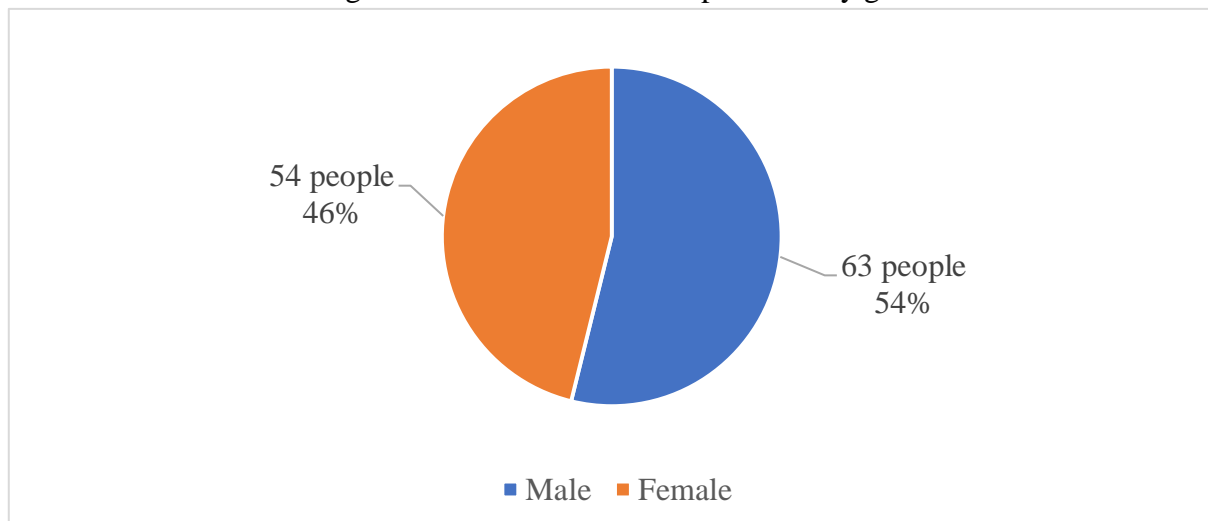
16. Figure: Distribution of respondents by place of residence (counties)



Source: Own editing based on my own questionnaire

The questionnaire was filled out by 117 individuals, and the reason why Bács-Kiskun county is apparently in the majority is because I live there and also did my internship in Kecskemét. As we can see 72% of the respondents live in Bács-Kiskun county and the second biggest segment is Pest county, where I also have some acquaintances.

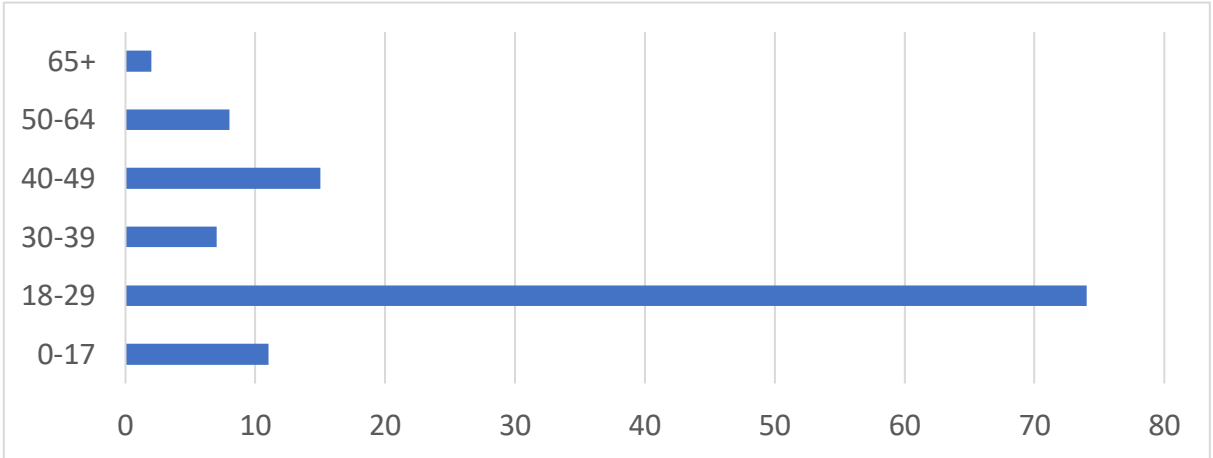
17. Figure: Distribution of the respondents by gender



Source: Own editing based on my own questionnaire

During my research, I was trying to make sure, that the gender distribution was kind of proportional. Just by a small amount, there are more males, than females. 54% males and 46% females contributed to help me in my study.

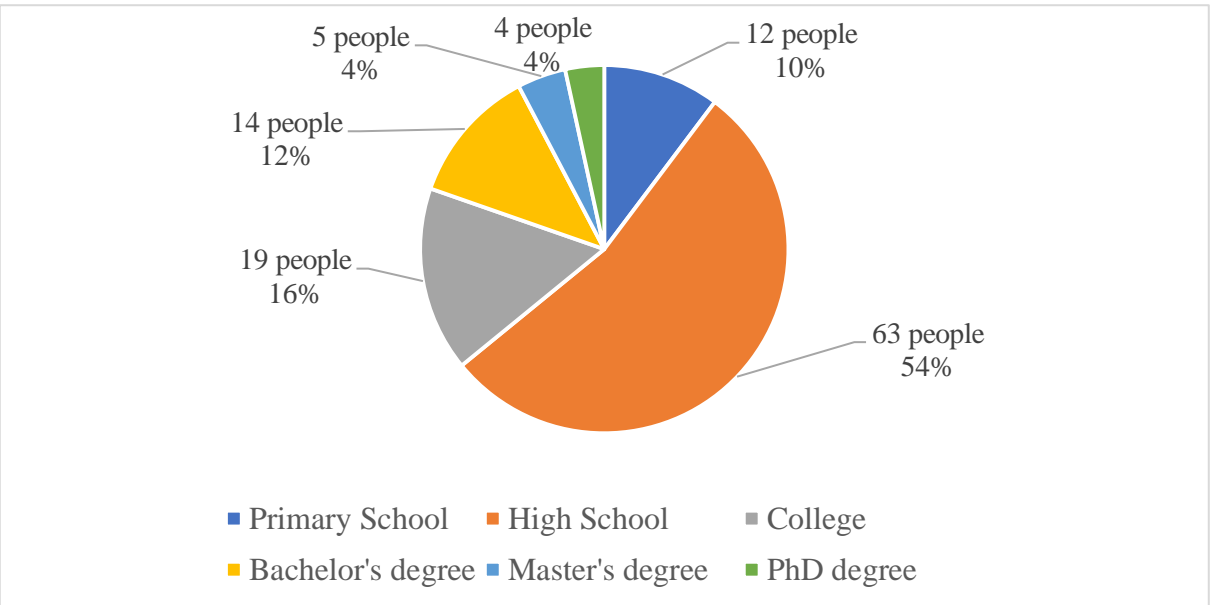
18. Figure: Distribution of the respondents by age



Source: Own editing based on my own questionnaire

The age of the respondents is mostly between the age of 18 and 29, which is 63% of the total fillers. 9% of them are at the age of 0-17, 6% are 30-39 years old, 13% are 40-49 years old, 7% are 50-64 years old, and the rest 2% are above the age of 65. Even though there are fewer elderly people, but study mostly targets the younger generation anyway, but it is better to have an insight into this one as well.

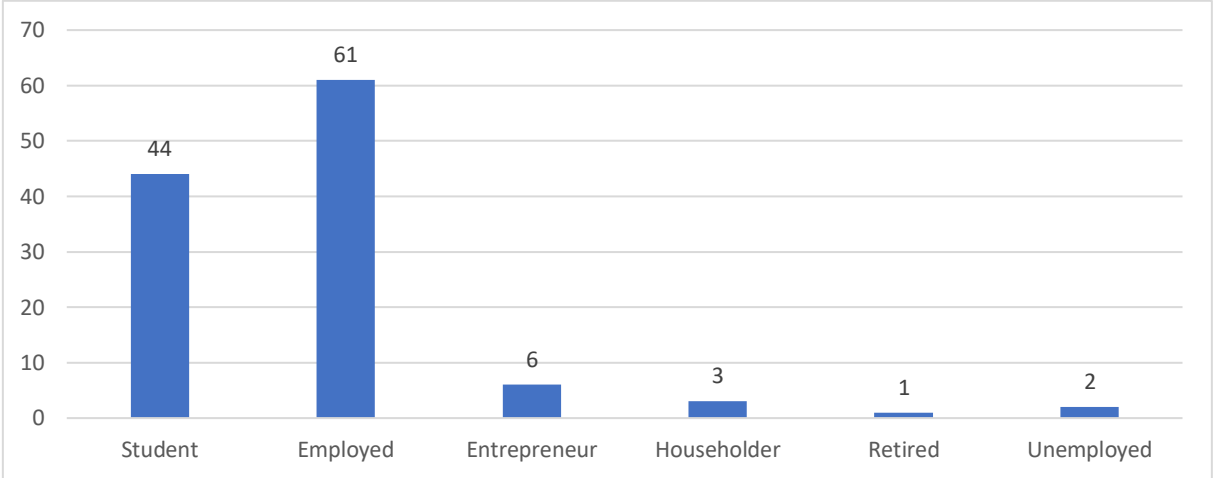
19. Figure: Distribution of the respondents by education



Source: Own editing based on my own questionnaire

As it can be seen in the figure, more than half of the respondents have a high school education, more precisely 54%. 4% have a Master’s degree and another 4% have a PhD degree. 14 people have a Bachelor’s degree, which is 12%, 16% finished College, and 10% have only primary school as the highest educational attainment.

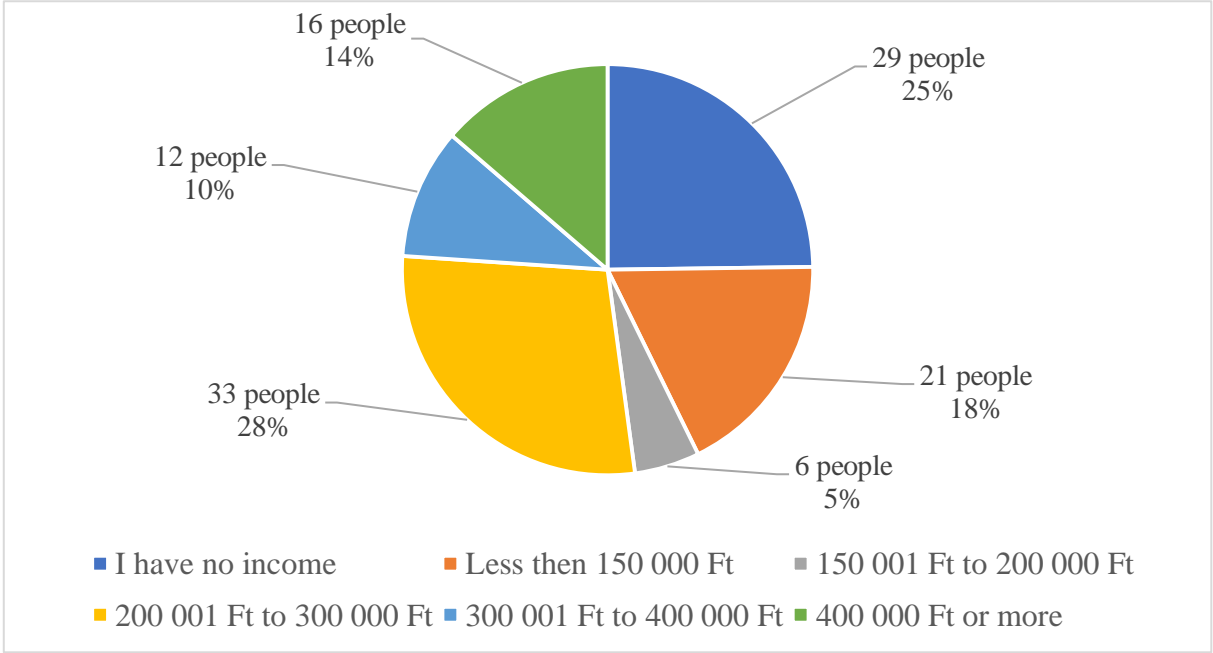
20. Figure: Distribution of the respondents by occupation



Source: Own editing based on my own questionnaire

Out of the 117 respondents, half of them are employees, (52%), and there are also a large number of students with 38%, however, there are only 5% entrepreneur, 3% are householder, 1% of them is retired and 2% of them are unemployed.

21. Figure: Distribution of the respondents by average monthly net income

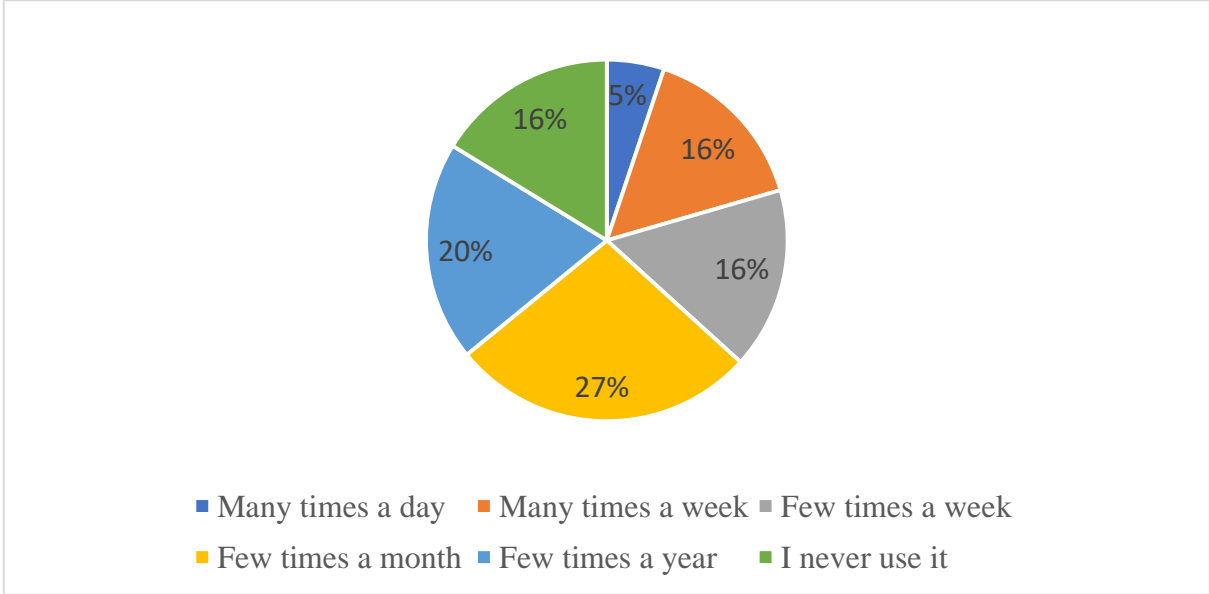


Source: Own editing based on my own questionnaire

A quarter of the respondents do not have any income source, 18% have a net income of less than 150 000 Ft, which is in proportion to the occupation of the respondents considering, that there are many students. Between 150 and 200 thousand of forints, are included only 5% of the respondents, while in 200 and 300 thousand HUF, there are 28%, and 10% between 300 000 Ft to 400 000 Ft, and 16 people (14%) have a net income over 400 000 Ft. The reason why I made that question obligatory, or haven't made a "do not want to answer" option is that, everything is anonymous, and I am not able to search specifically on somebody to find out the respondent's income. It is easier to work with a data where everyone fills out the questions that asked.

**Experiences with the use of alternative payments**

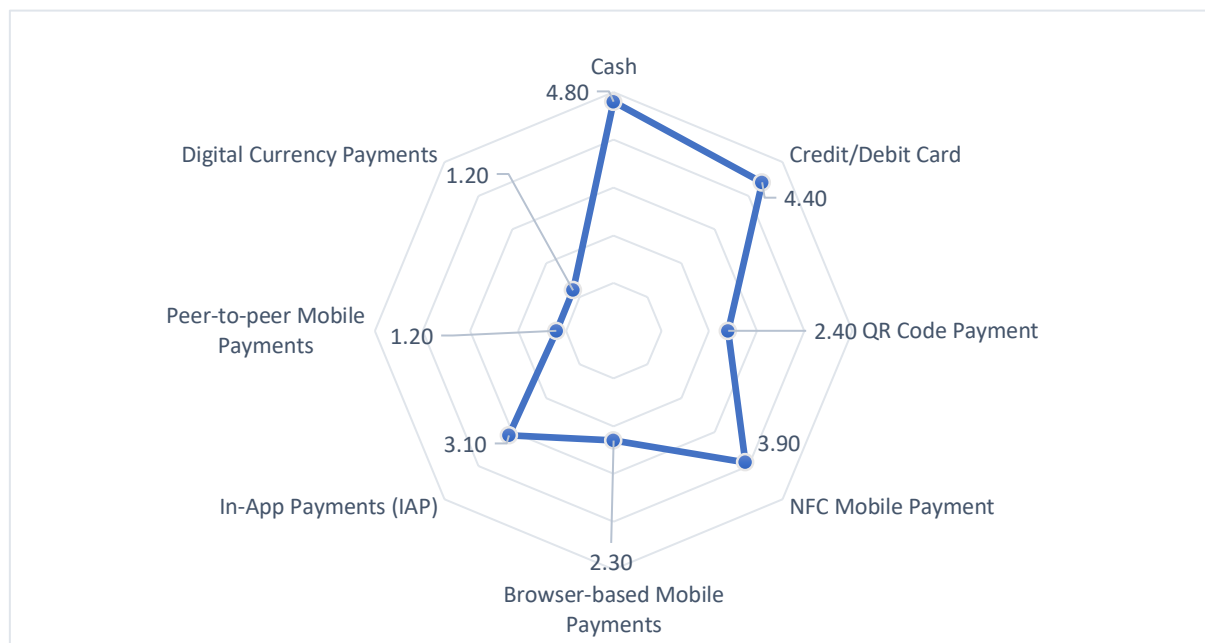
22. Figure: The frequency of using digital payments among respondents



Source: Own editing based on my own questionnaire

The respondents were asked about the frequency of using digital payments. The results surprised me, because I find it interesting, that so many people use electronic payments quite rarely. As it can be seen in the figure the majority uses digital payments a few times a month, and the second one that comes on top is those, who use it a few times a year. For those who use it a few times a year, I assume those are only using the web-based payments, because most webs do not have a c.o.d. (cash on delivery) option, therefore they are forced to pay digitally through a web page.

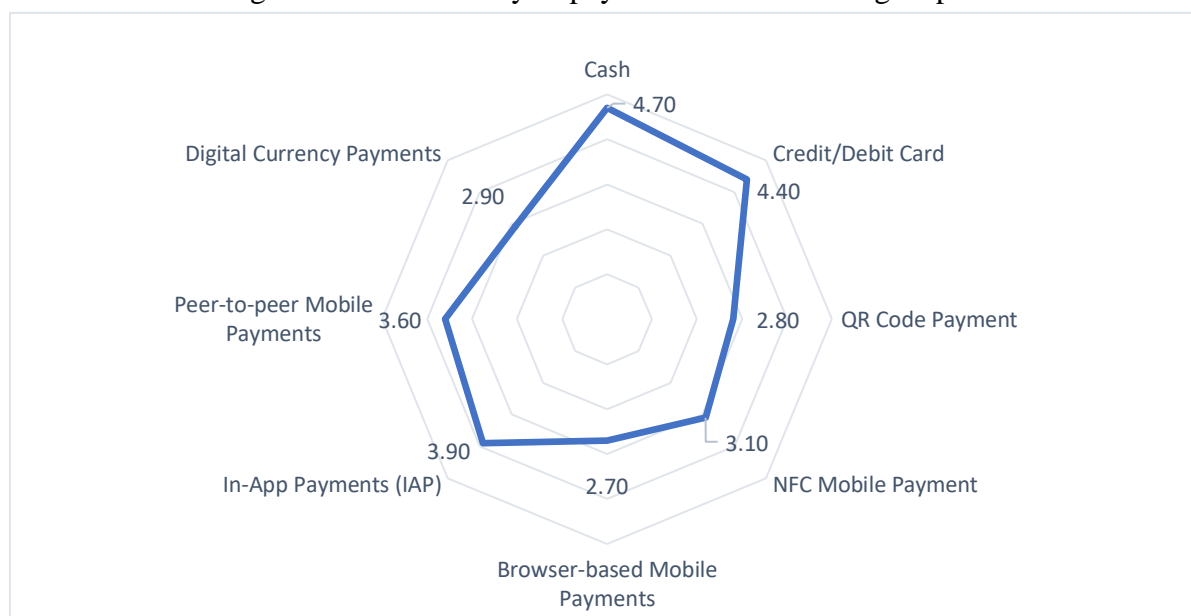
23. Figure: Rate of use of payment methods among respondents



Source: Own editing based on my own questionnaire

According to the respondents' answers, the most used payment method is cash, followed by Credit and Debit cards a little behind, but I don't think that it's that surprising. Digital currency and P2P received the same results, because Hungarians either do not know in what scenario should they use it, or they feel unnecessary to use them. I feel like IAP, NFC, and also the QR code has the chance to compete with cash, but it will be several years later if it happens.

24. Figure: Rate of security of payment methods among respondents

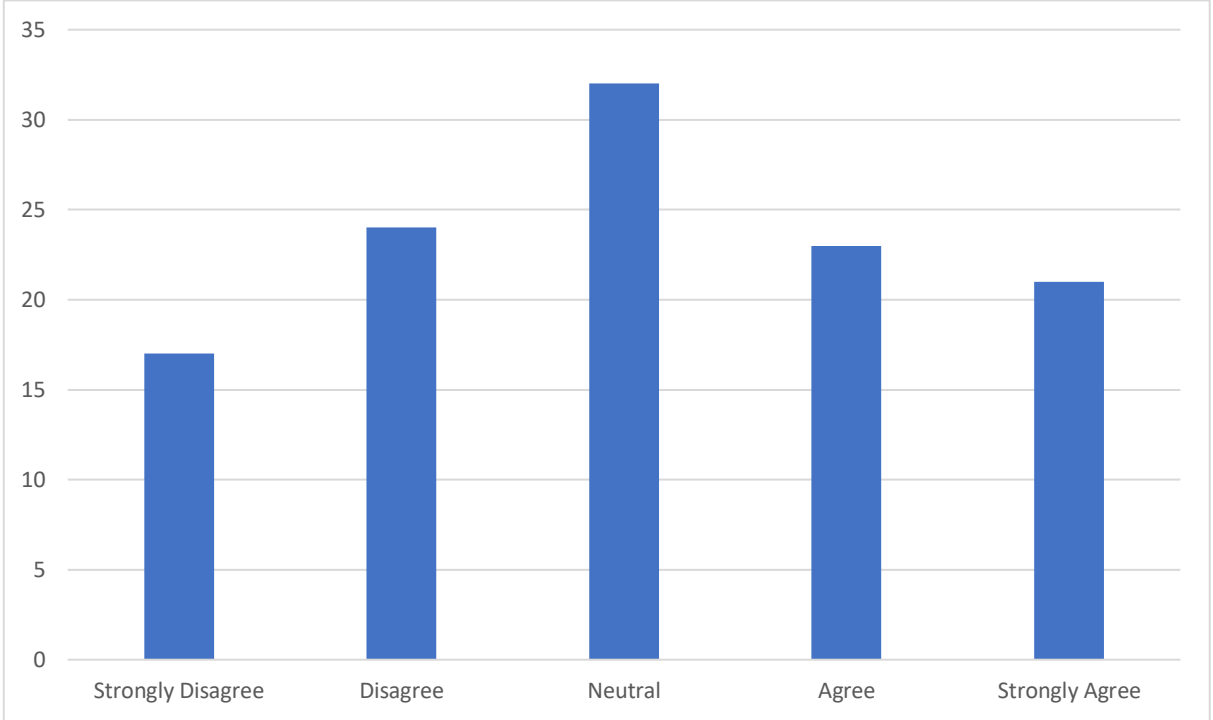


Source: Own editing based on my own questionnaire

In the middle of my survey (3.1.4 Disadvantages of cash), I already wrote about the security of these payments, however, I wanted to confirm that, by asking other people's

opinions. Even though cash can be stolen, it still came out on top, because probably it is not that common to be robbed, and people use cash almost every day, and the habit triggers security. What they fear the most are the Browser-based payments. I assume the reasoning behind it is that some of the web pages are not authenticated, or not that familiar web pages are just risky to give the card information to.

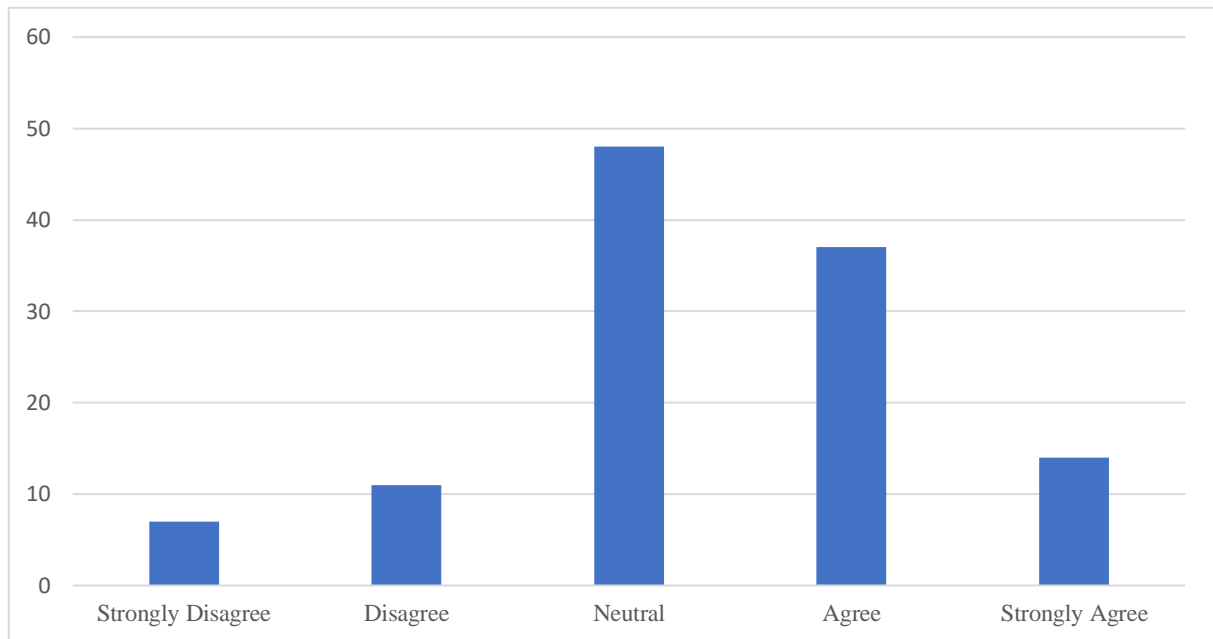
25. Figure: Preference of cash over electronic payments among respondents



Source: Own editing based on my own questionnaire

In my research, I wanted to find out the preference of cash over electronic payments, but the results turned out to be very dispersive. Some of them tend to like the statement of using cash over electronic payments, but some of them would like to despise that allegation. The majority of the respondents are satisfied with both type of payments and for them, it just simply do not matter at all which one of them they use.

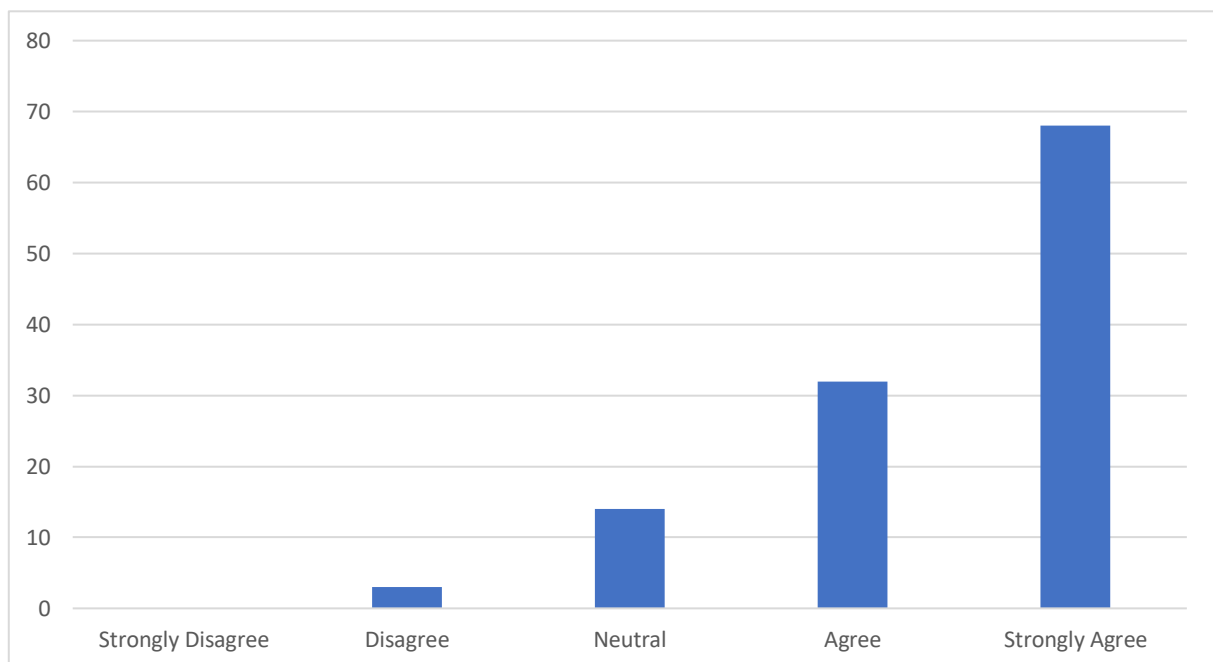
26. Figure: Money management of cash over digital payments among respondents



Source: Own editing based on my own questionnaire

The greater proportion of the respondents is neutral on the fact that they can manage their money better if it is in cash. Apart from this, it still tends to be a bit of an agreement on the statement, because there is more agreement rather than disagreement.

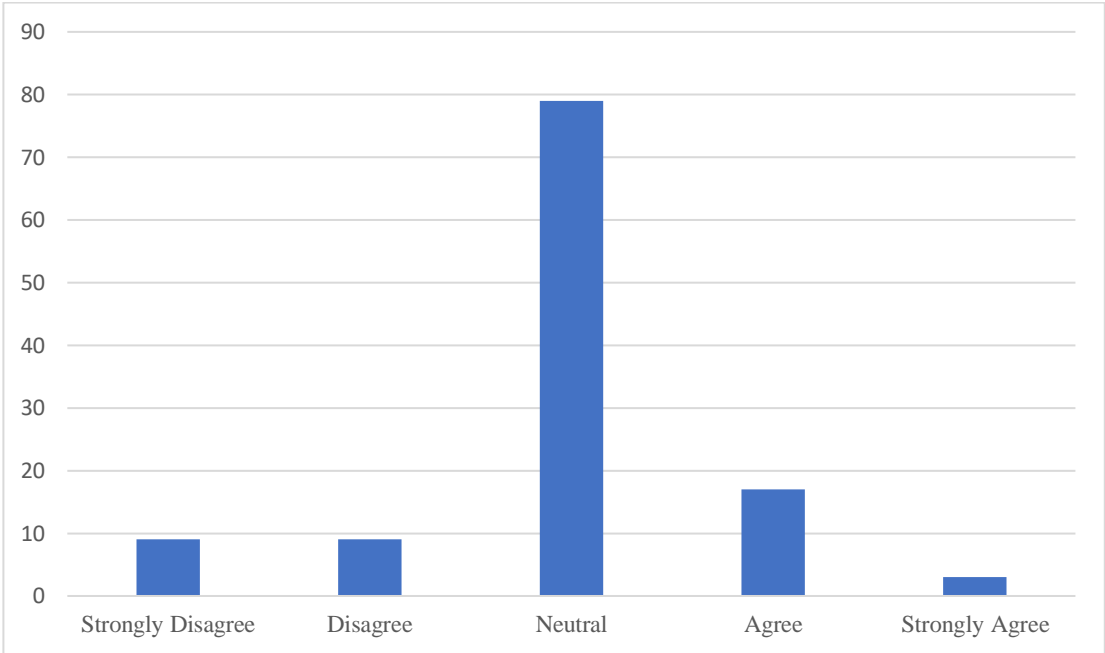
27. Figure: Willingness of paying electronically



Source: Own editing based on my own questionnaire

The results of that question are extremely one-sided. The majority of the respondents would pay electronically if its infrastructure was properly developed. Despite the many advantages of cash, surprisingly literally nobody disagreed strongly with that statement, and only less than 15% have the opinion on either disagreement or on neutral, probably because there are several more advantages to paying electronically, generally more secure than cash, due to encryption, and they can be made from anywhere with an internet connection.

28. Figure: How much does the payment amount affect the payment method among respondents

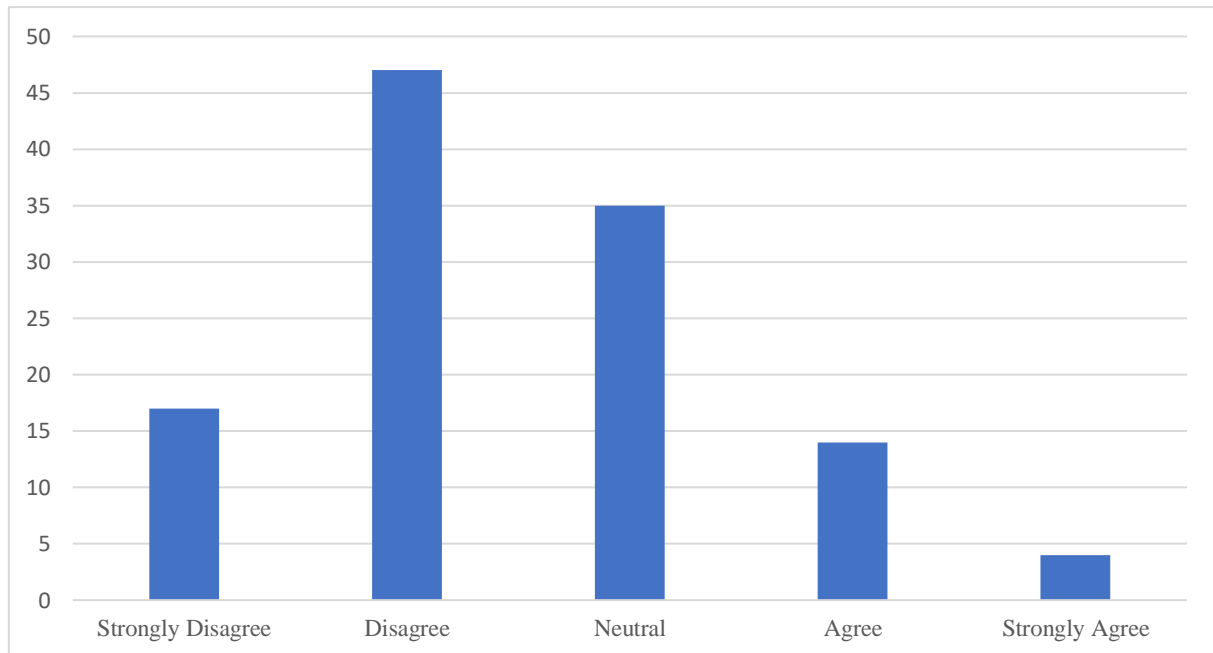


Source: Own editing based on my own questionnaire

As it can be seen in the figure, for the respondents it does not really affect the payment method. The answers are almost equally distributed, but 68% of them voted for the neutral option on that question. Those who agreed on that statement probably meant credit cards, because usually credit cards have a maximum limitation of for example 500 000 Ft, and if the purchase is higher than the limit then other alternative payment should be used in this case. Additionally, some payment methods may have fees associated with them. Typically, credit, debit cards, and P2P payment applications, such as PayPal and wire transfers have fees, but it may vary depending on the amount being paid.



29. Figure: How much does the place of payment affect the payment method among respondents

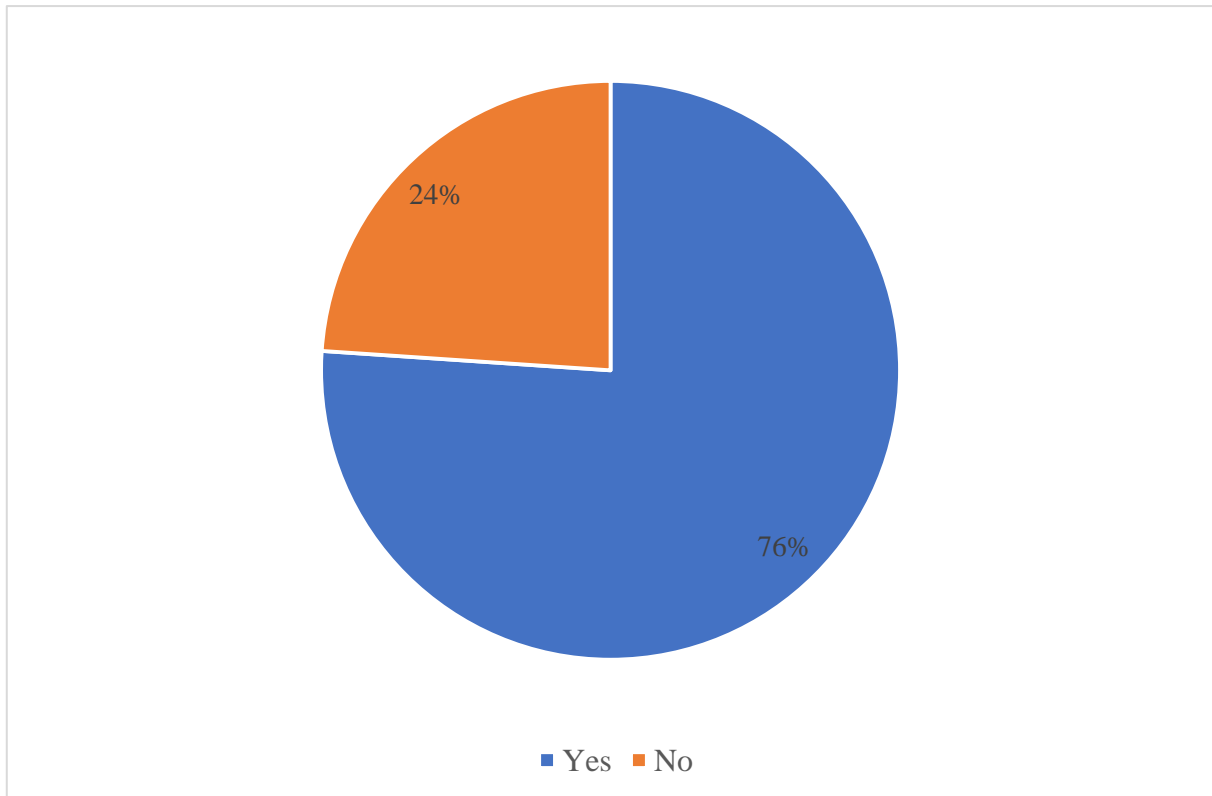


Source: Own editing based on my own questionnaire

However, the payment method does not seem to be affected by the place, probably because in most of the places there is a possibility for both types of payments, it can be either electric or traditional cash. I assume the reason on the agreements is directed towards those places where digital payments are not yet implemented, for example, the market, where only cash can be accepted. As we know that this questionnaire was filled out mostly by younger age groups, but if I have had a lot more elder respondents, then the results may differ. Right now, it seems like, whatever they have in hand, or more convenient for the individuals, they pay with that.

Some of the respondents made comments on this question, because as term of “place” they meant other regions, which is totally understandable, and this way they interpreted the question differently and it was commented that, in some countries or regions, such as PayPal may not be available and forces the individual to pay with another alternative.

30. Figure: Preference of having a cashless society



Source: Own editing based on my own questionnaire

Part of my survey was to find out, whether Hungarians want to live in a cashless society or not. Even though Hungary does not have a goal to become totally cashless within given years, but over the years for the country it was an increasing trend in digital payments, and people seem to like it, because 76% of the respondents would prefer to live in a cashless country.

#### 4. Conclusion

The purpose of my thesis was to find out if the widespread presence of cash can be replaced by other alternative payment methods in the upcoming future. Nowadays, the different types of digital payment methods have reached a certain level, which can compete with cash transactions. I managed to list the electronic payment methods, however, in Hungary, they do not play that much of a big role, unfortunately, because the Hungarian infrastructure is not so developed yet.

The comparison I made between China's famous WeChat Pay, and one of the most popular mobile payment app in Hungary highlighted large discrepancies between the two applications. Hungarians mostly use the Simple app, when it proves to be the most convenient solution, in addition to everything else, for example buying an E-vignette, or paying for parking

through the app. Unfortunately, there is not much of a wide selection of functions in the application, probably that is the reason why not so common among Hungarians.

In contrast, Chinese people literally use them for anything, and as I examined it in my thesis, there are several explanations for it, but the main one is that it is obligatory for them to upload their ID card, thereby they are easily identifiable and even official cases can be arranged as well in the application.

In my thesis, I listed every possible advantage and disadvantage of both cash and digital payments. I looked into what caused the growing popularity of the electronic payments and one of the factors is COVID-19 played a quite large role because it was a necessity to lower the number of cash transactions and to lean towards contactless payments a bit more. The other huge factor is the excessive amount of money in circulation because it is not favorable for the banks either, since it means a lot of expenses for them. Even the government supports it, because with electronic payments it is harder to avoid taxes, and the financial transactions are easily trackable, thereby it lowers criminal activity among crime organizations.

Following this, I made a comparison between the international and domestic situations of current cashless situations. I started with the process leading the Scandinavian countries, which is Sweden, where the traditional physical currency will be completely gone within 1 year, and Denmark, where the government has been very supportive of this process in recent years. I also mentioned a country, where all the technologies are given, and yet the country Germany does not want to reduce cash transactions for some reason. In the Middle East, the government of Israel has taken measures and established all the card infrastructure that is needed in order to increase the number of digital payments in order to lower criminal activity in the country. I found several studies about the current state in Hungary regarding cash exemption, which made me realize, that even though the money circulation is keep increasing year by year, but these are not for transactional purposes. In an analysis of an international study on cashless payments, with Hungary included, it turned out, that our country lagged behind compared to other countries, but seemingly improved a lot over the years.

In order to look into this more deeply to the topic, I made a quantitative survey, to find out the preferred type of payment and in theory how much necessity would there be to completely terminate the physical currency and become a cashless society.

At the beginning of my thesis, I had three hypotheses and based on the results of my questionnaire, which was built up around these I can finally answer them with better insight. From the results of the survey, it can be seen, that 76% of the respondents would like to live in a cashless world, and also a higher proportion of the respondents (~85%) pay electronically

with greater intent. The results of the survey rejected my first hypothesis, which kind of surprised me, but it follows the second one, which had a huge impact on the first one. H2, which examined the perception of gender and age attributes concerning the digital payments. Turns out, that out of the survey results I couldn't find any significant difference considering the gender attributes, while on the age gap there is a remarkable change because as we move up in age, the usage of electronic payments decreases in direct proportion with a small amount. Unfortunately, my survey wasn't filled out by many elderly people, mostly below 40, yet it can be clearly seen that the younger generation tends to use electronic payments a lot more frequently. H3 defines that secureness has a great influence on the use of digital payments. Based on the combined results of the questionnaire it can be rejected. There was no significant relationship between safety and use. As long as the payment can be called kind of safe and not risky, people will use it when they have to. Some of the alternative payment was deemed safe, yet in our country is not widespread, for example, the P2P payment.

The results are only valid for using exclusively to evaluate the hypotheses in my thesis. The authenticity of the internet questionnaires is not always precise, especially not with a such low number of respondents.

After the survey, the results are the following:

H1: Rejected

H2: first part Proven, Second part Rejected

H3: Rejected

As a conclusion of the questionnaire results it made me realize that the respondents who filled it out, they have intentions to reduce cash payments and increase digital ones. However, there are still a few types of payments that are barely used by Hungarians, and considering the results, even though the majority prefer electronic payments over cash, they still have a minor fear of safety using those alternative payments and cash seems to be the most secure one. I feel like people are open towards new technologies in order to become a cashless society, but today's state of Hungary's infrastructure does not allow that, but I am extremely excited about this and looking forward to see the development of our country year by year. Personally, I would prefer a country where cash is still acceptable, but digital payments are more dominant, in this case, the elderly people or any anti-tech people would be satisfied as well.

Ultimately, the decision of whether to pay electronically or with cash will depend on the individual's needs and preferences. Electronic payments offer the advantages of security, convenience, and traceability, while cash payments offer the advantage of anonymity. At last, the best payment method will depend on the individual's needs and preferences.

## 5. Summary

In the first chapter of my thesis, I presented all the alternative digital payment methods starting of with the Credit and Debit Cards, which are the most commonly known and used oldest digital payment methods all over the world. Through the years these cards had an upgrade and have near-field communication function which allows contactless payment for people.

Today's most popular type of payment for convenience is the mobile payment. There are some different kinds of methods within this as well. Mobiles have built-in NFCs into every phone since 2011, which enables the transaction if the phone is in direct close range to the POS terminal.

Browser-based mobile payment has a built-in interface, which facilitates the process quickly and easily by giving the required card information only.

In-app payments have several useful functions. Through the app, consumers can purchase E-vignettes, food, season tickets, order a taxi, and many other things that make the people's life easier.

In order to use Peer-to-peer payment, specific applications need to be downloaded, such as Cash App, or Venmo, for both parties in order to send money, and the transfer is instant.

Another very commonly used payment is QR code. Nowadays every smart phones have a built-in QR code reader. QR code payment processes can happen through an App-to-App payment, where both sides open the proper apps, then the user scans the unique QR code given by the recipient through the app or at some places there is a barcode shown on bills, buses, and after scanning it, the consumer can quickly pay for the product/service. The last version of it, is when the retailer scans the consumer's QR code, where the consumer enters the amount that has to be paid, and the retailer practically "takes away the consumer's money".

Digital currencies are required to have E-wallets, in order to pay with them, and considering the encryption, it counts as the safest type of payment, because it is almost impossible to hack thanks to the blockchain.

In the second chapter, I made a comparison study on the Hungarian Simple application and the famous Chinese app called WeChat Pay. WeChat Pay was released 9 years ago and has already over 1 billion active users. Together with Alipay, jointly took up accounted for 94.2% market share by transaction volume in the Chinese Mobile Payment Market. In China, mobile payment is very common and pays a very important role in their everyday life.

WeChat Pay and Simple by OTP are similar to each other in terms of policy, however,

there is a big significant difference between these two applications. WeChat Pay has access to a copy of the identity document, while on the other hand Simple draws attention not to upload any document, because Simple does not take any responsibility for that.

WeChat Pay is supported by 40 countries around the world, and since 2019 due to the high Chinese tourist numbers, Hungary introduced WeChat Pay, Alipay, and China Union Pay into Budapest Airport and the Heinemann DutyFree.

In terms of functions, the applications are very similar, but Simple is like a budget version of WeChat Pay, because everything that Simple has, it can be found in the other as well along with several other useful features.

In the third chapter, I made a research about the possibility of Hungary going cashless. According to some data, COVID-19 had a positive influence concerning digital payments, because the cashless payments exponentially increased. Hungary has a goal and will be trying to decrease the cash payments down to 50% by 2030, which seems reasonable because in the past 10 years digital payments increased by 22%. More than 75% of the people receive their salary electronically. The number one reason for such aspiration is to lower the percentage of the shadow economy because compared to other EU countries, Hungary is seemingly above average.

The country, that is just one step away from being completely cashless, and will not accept a single penny, is Sweden. According to predictions in 2023, Sweden will go 100% digital and will become the first cashless society nation in the world. In 1967 Sweden was also one of the first among the countries that installed automatic cash machines. As it should be, Swedes were the first country in Europe to introduce banknotes in 1661 and 362 years later, predictably they will be the first ones to exclude them. Nordic countries are way ahead of any other country in Europe, they have the highest number of card payments per inhabitant. Since 2016, the government of Denmark gave the option to refuse to accept cash at petrol stations, bars, restaurants, buses, and trains to become totally cashless in order to mitigate crime incidents. Denmark's plan to become completely cashless by the year 2030. Germany on the other hand, where all the high technology is given still prefers cash over any digital payments. While the Israeli government also tries to eliminate cash, in order to lower criminal activity, because the black market is approximately 25% of the Israeli GDP, therefore the government made some restrictions on the maximum cash transaction limit.

In order to have a complete view of these payments, I listed all the advantages and disadvantages for both digital payments and cash.

There is no doubt, that the greatest advantage of cash is that it is accepted literally everywhere. There is no possibility of risk of personal data theft since there is no personal data involved during the transaction, therefore personal information remains safe. Cash is just easily accessible, can be given to the other party, the transaction immediately goes through, and no need for a third-party intermediary, and there is no transaction fee at all.

However, the disadvantage of cash is, that it costs hundreds of billions of forints to maintain that, and it is all paid by the taxes of citizens. There are no records of transactions after any transaction, thereby it favors the operation of the black market, since it is untraceable when paying with cash. Cash can be stolen, destroyed, and even lost, and cannot be refunded, nor cannot be exchanged by banks.

The advantages of digital payments are that, they are convenient and give immediate access to their money. The chances are less, that thieves will attempt a crime, and try to steal because it is also trackable and can be easily proven whose money was it in beforehand. In case it did succeed, the card can be blocked in less than a minute, and there is a high chance for a refund by the company. Expenses can be easily trackable, and their use abroad is a lot better than cash, since there is no need to withdraw money to be able to pay with the local currency. In contrast to paying with cash, since there is no verification during the online transaction, it is hard to tell if the person who made the payment is really the card's owner. Cybercriminals frequently try to deceive individuals or hack them in order to acquire their data and exploit them, and they have a good possibility of escaping detection at all times. An enormous obstacle to moving toward a cashless society is that the older generation lacks the expertise necessary to use smartphones efficiently, so they avoid it and stick with traditional cash payments. Online payments depend on software, therefore system failures can always occur and at important times can be quite annoying.

In the last chapter, I made a questionnaire, about which I expressed my conclusion in the previous chapter. The main result of the survey is that Hungarians would lean towards cashlessness with a well-developed infrastructure.

## References

Adam Marget, (n.d.) Data Encryption: How it Works & Methods used [Online] Available at:

<https://www.unitrends.com/blog/data-encryption> (Accessed 2022.09.29.)

AdChina, 2020 How to set up WeChat Pay as a foreign Business [Online] Available at:

<https://www.adchina.io/how-to-set-up-wechat-pay-business-outside-china/#:~:text=Medical%20care-.From%20which%20countries%20can%20you%20implement%20WeChat%20Pay%3F,in%2025%20countries%20and%20regions> (Accessed: 2022.10.19.)

Adi Koplewitz, 2022 Israel bans use of cash for purchases larger than NIS 6000 [Online]

Available at: <https://www.jpost.com/business-and-innovation/banking-and-finance/article-713354> (Accessed: 2022.11.09.)

Andrew Saks-Mcleod, 2019 Israel, where the black market is approximately 25% of GDP and

Binary Options brings in at least \$5 billion in revenue per [Online] Available at:

<https://financefeeds.com/israel-where-the-black-market-is-approximately-25-of-gdp-and-binary-options-brings-in-at-least-5-billion-in-revenues-per-year/> (Accessed: 2022.11.09.)

Emily Sorensen, 2021 QR code payments – What is it and how does it work? [Online]

Available at: <https://www.mobiletransaction.org/qr-code-payment-works/> (Accessed: 2022.09.27)

Euromoney Learning, (n.d.) What is blockchain? [Online] Available at:

<https://www.euromoney.com/learning/blockchain-explained/what-is-blockchain> (Accessed 2022.09.29.)

Future Travel Experience, 2019 Budapest Airport rolls out WeChat Pay for Chinese passengers [Online] Available at:

<https://www.futuretravelexperience.com/2019/10/budapest-airport-rolls-out-wechat->



[pay-for-chinese-passengers/](#) (Accessed: 2022.10.19)

Ivy Wigmore, (n.d.) Digital currency [Online] Available at:

<https://www.techtarget.com/whatis/definition/digital-currency> (Accessed: 2022.09.29.)

Jianfeng Wang, 2017 Why is WeChat Pay so popular (1, 3) Available at:

[https://iacis.org/iis/2017/4\\_iis\\_2017\\_1-8.pdf](https://iacis.org/iis/2017/4_iis_2017_1-8.pdf) (Accessed: 2022.10.17)

Katie Coy, 2020 WeChat vs Alipay, Which one is better [Online] Available at: <https://itl->

[beijing.com/wechat-pay-vs-alipay/#chapter-2](https://itl-beijing.com/wechat-pay-vs-alipay/#chapter-2) (Accessed: 2022.10.24.)

Magyar Nemzet, 2022 Megfordítanak a készpénzes és az elektronikus fizetés arányát. [ They would change the ratio between cash and electronic payments] [Online] Available at:

<https://magyarnemzet.hu/gazdasag/2022/06/megforditanak-a-keszpenzes-es-az-elektronikus-fizetes-aranyat> (Accessed: 2022.11.11)

Mike Dang, 2013 Giving the Homeless Credit Card Readers In Sweden To Earn Income

[Online] Available at: <https://medium.com/the-billfold/giving-the-homeless-credit-card-readers-in-sweden-to-earn-income-b182683247ef> (Accessed: 2022. 11.07)

MNB, Deák Vivien, Nemeckó István, Végső Tamás, 2022 A bankszámla-lefedettség már nem akadály a az elektronikus fizetés terjedésének [Bank account coverage is no

longer an obstacle to the spread of electronic payments] [Online] Available at: <https://www.vg.hu/mnb/2022/01/a-bankszamla-lefedettseg-mar-nem-akadalya-az-elektronikus-fizetes-terjedesenek> (Accessed: 2022.11.14.)

Nick Galov, (n.d.) How and where to pay using bitcoin in 3 easy steps [Online] Available at:

<https://www.commpro.biz/how-and-where-to-pay-using-bitcoin-in-3-easy-steps/>  
(Accessed 2022.09.30.)

Origo, 2022 Soha nem volt még ennyi készpénz a magyaroknál [Hungarians have never had so much cash] [Online] Available at: [https://www.origo.hu/gazdasag/20220414-](https://www.origo.hu/gazdasag/20220414-irtozatos-mennyisege-keszpenzen-ulnek-a-magyarok-vg.html)

[irtozatos-mennyisege-keszpenzen-ulnek-a-magyarok-vg.html](https://www.origo.hu/gazdasag/20220414-irtozatos-mennyisege-keszpenzen-ulnek-a-magyarok-vg.html) (Accessed: 2022.11.03.)

Santander, 2022 Digital payment methods: What are they and which ones are most common

- [Online] Available at: <https://www.santander.com/en/stories/digital-payment-methods-what-are-they-and-which-ones-are-most-common> (Accessed: 2022.09.15.)
- Simple Privacy Notice (2022.09.19) Available at:  
[https://simple.hu/simplecore/uploads/2022/09/Simple\\_adatkezelesi\\_eng\\_20220919.pdf](https://simple.hu/simplecore/uploads/2022/09/Simple_adatkezelesi_eng_20220919.pdf)  
(Accessed: 2022.10.18)
- Statista, 2022 Share of cash estimate at point of sale (POS) in Denmark from 2016 to 2021  
Available at: <https://www.statista.com/statistics/1094818/cash-use-in-denmark/>  
(Accessed: 2022.11.08.)
- Stephen Katte, 2022 Israel puts the brakes on the cash spur digital payments [Online]  
Available at: <https://cointelegraph.com/news/israel-puts-the-brakes-on-cash-to-spur-digital-payments> (Accessed: 2022.11.09.)
- Susan Fourtané, 2020 Sweden: How to live in the World's First Cashless Society [Online]  
Available at: <https://interestingengineering.com/innovation/sweden-how-to-live-in-the-worlds-first-cashless-society> (Accessed: 2022.11.07.)
- The Global Economy, 2018 Shadow economy - Country rankings [Online] Available at:  
[https://www.theglobaleconomy.com/rankings/shadow\\_economy/Europe/](https://www.theglobaleconomy.com/rankings/shadow_economy/Europe/) (Accessed: 2022.11.14.)
- The Local DK, 2019 Danish government wants to allow petrol stations, stores to refuse cash  
[Online] Available at: <https://www.thelocal.dk/20190227/danish-government-wants-to-allow-petrol-stations-stores-to-refuse-cash/> (Accessed: 2022.11.08.)
- Turzó Ádám Pál, 2016 A készpénz az új Németországban – De mégis mi a jó fenéért? [Cash is the king in Germany – But why the hell?] [Online] Available at:  
<https://www.portfolio.hu/uzlet/20161027/a-keszpenz-az-ur-nemetorszagban-de-megis-mi-a-jo-feneert-239287> (Accessed: 2022.11.08.)
- Végső Tamás, 2020 A magyarországi készpénzkereslet változásának összehasonlító elemzése (23) [The demand for cash in Hungary and comparative analysis of change] Available at:

<https://www.mnb.hu/letoltes/hsz-19-1-t4-vegso-1.pdf> (Accessed: 2022.11.14.)

Vivian Tejada, 2022 Payments and Checkout [Online] Available at:

<https://www.shopify.com/retail/mobile-payments> (Accessed: 2022.09.20.)

WeChat Pay Privacy Policy (2018.08.27.) Available at:

<https://payapp.weixin.qq.com/summeract/gdpr/home?lang=en&nobutton=1>

(Accessed: 2022.10.18)

Wei-Chuan Chen, 2019 Drivers of Mobile Payment Acceptance in China: An Empirical

Investigation (1, 9, 10, 11,) Available at: <https://www.mdpi.com/2078->

[2489/10/12/384/htm](https://www.mdpi.com/2078-2489/10/12/384/htm) (Accessed: 2022.10.17.)

Worldline, Why the Nordics are going cashless [Online] Available at:

<https://www.bambora.com/articles/why-the-nordics-are-going-cashless/> (Accessed:

2022.11.08.)

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## Attachments

### I. Questionnaire used for quantitative survey

1. Which county you live in? (Short answer)

\_\_\_\_\_

2. What is your gender?

- Male
- Female

3. What is your age?

- 0-17
- 18-29
- 30-39
- 40-49
- 50-64
- 65+

4. What is your highest educational attainment?

- Primary School
- High School
- College
- Bachelor's degree

- Master's degree
  - PhD degree
5. What is your current occupation?
- Student
  - Employed
  - Entrepreneur
  - Householder
  - Retired
  - Unemployed
6. What is your monthly net income?
- I have no income
  - Less than 150 000 Ft
  - 150 001 Ft to 200 000 Ft
  - 200 001 Ft to 300 000 Ft
  - 300 001 Ft to 400 000 Ft
  - 400 000 Ft or more
7. How often do you use digital payments?
- Many times a day
  - Many times a week
  - Few times a week
  - Few times a month
  - Few times a year
  - I never use it
8. To what extent you use these payment methods?

	<b>Not at all</b>	<b>Little</b>	<b>Somewhat</b>	<b>To a large extent</b>	<b>To a great extent</b>
<b>Cash</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Credit/Debit card</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>QR Code Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>NFC Mobile Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Browser-based Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Peer-to-peer Mobile Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Digital Currency Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. How safe do you consider these payment methods?

	<b>Not at all</b>	<b>Little</b>	<b>Somewhat</b>	<b>To a large extent</b>	<b>To a great extent</b>
<b>Cash</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Credit/Debit card</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>QR Code Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>NFC Mobile Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Browser-based Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Peer-to-peer Mobile Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Digital Currency Payment</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. "I prefer cash over electronic payments"

1            2            3            4            5

Strongly Disagree                  Strongly Agree

11. "I can manage my money better, if I pay with cash"

1   2   3   4   5  
Strongly Disagree                  Strongly Agree

12. "If I could I would always pay electronically"

1   2   3   4   5  
Strongly Disagree                  Strongly Agree

13. The amount to be paid affects the payment method

1   2   3   4   5  
Strongly Disagree                  Strongly Agree







14. The place of payment affects the payment method

1   2   3   4   5  
Strongly Disagree                  Strongly Agree




15. Would you prefer a cashless society?





- Yes
- No

II. Table containing survey results

Summary Table		
1. Which county you live in?		
		%
Bács-Kiskun county	84	72%
Baranya county	3	3%
Békés county	2	2%
Csongrád-Csanád county	3	3%
Hajdú-Bihar County	4	3%
Pest county	18	15%
Veszprém County	2	2%
Zala megye	1	1%
2. What is your gender?		
		%
Male	63	54%
Female	54	46%
3. What is your age?		
		%
0-17	11	9%
18-29	74	63%
30-39	7	6%
40-49	15	13%
50-64	8	7%
65+	2	2%
4. What is your highest educational attainment?		
		%
Primary School	12	10%
High School	63	54%
College	19	16%
Bachelor's degree	14	12%
Master's degree	5	4%
PhD degree	4	3%
5. What is your current occupation?		
		%
Student	44	38%
Employed	61	52%
Entrepreneur	6	5%
Householder	3	3%
Retired	1	1%
Unemployed	2	2%
6. What is your monthly net income?		
		%



I have no income	29	25%
Less than 150 000 Ft	21	18%
150 001 Ft to 200 000 Ft	6	5%
200 001 Ft to 300 000 Ft	33	28%
300 001 Ft to 400 000 Ft	12	10%
400 000 Ft or more	16	14%
7. How often do you use digital payments?		
		%
Many times a day	6	5%
Many times a week	18	15%
Few times a week	19	16%
Few times a month	32	27%
Few times a year	23	20%
I never use it	19	16%
8. To what extent you use these payment methods?		
Cash	4,8	
Credit/Debit Card	4,6	
QR Code Payment	2,4	
NFC Mobile Payment	4,2	
Browser-based Mobile Payments	3,3	
In-App Payments (IAP)	3,9	
Peer-to-peer Mobile Payments	1,3	
Digital Currency Payments	1,4	
9. How safe do you consider these payment methods?		
Cash	4,7	
Credit/Debit Card	4,4	
QR Code Payment	2,8	
NFC Mobile Payment	3,1	
Browser-based Mobile Payments	2,7	
In-App Payments (IAP)	3,9	
Peer-to-peer Mobile Payments	3,6	
Digital Currency Payments	2,9	
10. "I prefer cash over electronic payments"		
		%
Strongly Disagree	17	15%
Disagree	24	21%
Neutral	32	27%
Agree	23	20%
Strongly Agree	21	18%
11. "I can manage my money better, if I pay with cash"		
		%
Strongly Disagree	7	6%
Disagree	11	9%
Neutral	48	41%

Agree	37	32%
Strongly Agree	14	12%
12. " If I could I would always pay electronically"		
		%
Strongly Disagree	0	0%
Disagree	3	3%
Neutral	14	12%
Agree	32	27%
Strongly Agree	68	58%
13. The amount to be paid affects the payment method		
		%
Strongly Disagree	9	8%
Disagree	9	8%
Neutral	79	68%
Agree	17	15%
Strongly Agree	3	3%
14. The place of payment affects the payment method		
		%
Strongly Disagree	17	15%
Disagree	47	40%
Neutral	35	30%
Agree	14	12%
Strongly Agree	4	3%
15. Would you prefer a cashless society?		
		%
Yes	89	76%
No	28	24%

