THE MİNİSTRY OF EDUCATİON OF THE REPUBLİC OF AZERBAİJAN

AZERBAIJAN STATE UNIVERCITY of ECONOMICS

INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

"Electronic Money: Is there any possibility of a cashless society?"

Huseynova Narmin Jeyhun

BAKU – 2019

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XÜLASƏ

Tədqiqatın aktuallığı. Cəmiyyətin nağsız ödənişlərə keçidi zamanı elektron pullardan istifadə edilməsi qaçınılmazdır. Hal- hazırda müassir dövrdə cəmiyyət nağd pullardan nağdsız hesablaşmalara doğru inkişaf etmişdir. Mövzunun aktuallığı həmin sahə üzrə araşdırılmışdır.

Tədqiqatın məqsəd və vəzifələri: Tədqiqatın əsas məqsədi texnologiyanın inkişafı ilə əlaqədar cəmiyyətin nağdsız ödənişlərə keçidinin sürətləndirilməsi meyyarlarını müəyyən etməkdir.

İstifadə olunmuş tədqiqat metodları: Tədqiqatda kəmiyyət metodu vasitəsilə reqressiya modeli qurulmuşdur. Hipotezanın nəticəsi ekonometrik model əsasında göstəriləcəkdir.

Tədqiqatın informasiya bazası: Tədqiqat ikincili məlumatlar əsasında yığılmışdır. Burada bütün kontinentləri əhatə edən 47 ölkənin nəticələri əsasında tədqiqat aparılmışdır. İqtisadi indiqator göstəriciləri Beynəlxalq Monetar Fond bazasından, e- ödəniş məlumatları VİSA və MasterCard reportlarından və digər göstəricilər rəsmi statistik mənbələrdən toplanmışdır.

Tədqiqatın məhdudiyyətləri: Günümüzdə nağd ödənişlər hələ də dominant vəzifəni icra etməkdədir. Hələ də bir çox ölkədə hesablaşmaların 50%- dən çoxunu nağd hesablaşmalar təşkil etməkdədir. Bu səbəbdən nağdsız hesablaşmaların inkişafı dünyada tam adət halında deyildir.

Tədqiqatın nəticələri: Tədqiqatda göstərildiyi kimi bir sıra inkişaf etməkdə olan ölkələr nağdsız ödənişlər çox az inteqrə etmişdir. Buna görə də inkişaf etmiş ölkələrin praktikasına əsaslanaraq həmin inkişaf etməkdə olan ölkələrdə bu prossesi sürətləndirmək mümkündür.

Nəticələrin elmi- praktiki əhəmiyyəti: Texnologiyanın inkişafı nəticəsində nağdsız ödənişlərin inkişafı sürətlənməkdədir. Həmin ödənişlərin artması nəticəsində tranzaksiyaların daha şəffaf, asan və tez edilməsinə vəsilə olunacaqdır. Dünyada inkişaf etmiş ölkələrin praktikasına dayanaraq inkişaf etməkdə olan ölkələrdə də nağdsız ödənişlərin həyata keçirilməsi ilə cinayət və ödənişlərin gecikməsi kimi problemləri aradan qaldırmaq mümkündür.

Açar sözlər: nağdsız hesablaşmalar, elektron pul, nağdsız cəmiyyət

LİST OF ACRONOMS.

ATM- Automated Teller Machine

CBDC- Central Bank Digital Currency

CHAPS- Clearing House Automated Payments System

DLT- Distributed Ledger Technology

EFT- Electronic Funds Transfer

EMV- EuroPay MasterCard Visa

EU- European Union

GDP- Gross Domestic Product

ICT- Information and Communication Technologies

NFC- Near- Field Communication

PC- Personal Computer

PIN- Personal Identification Number

QR- Quick Response

SEPA- The Single Euro Payment Area

SWIFT- Society for Worldwide Interbank Financial Telecommunication

USA- United States of America

Contents

INTRODUCTION.

Actuality of the thesis. In the case of complete substitution of base money, e-money represents a threat to the way monetary policy is implemented, to the ability of the central bank to carry out its monetary policy, and to the standard effect of monetary policy on output and prices. With extensive use of a e- money the monetary authority might not expect to have the same sort of command over changes in interest rate as it has otherwise, depending on different circumstances. E-money and currency are not perfect substitutes, so there will be positive demand for both. We could consider the extreme case of the disappearance of currency.

Problem statement to be addressed and learning level based on problem- solving: Electronic money is introduced as a cost effective alternative to cash for small value transactions and as a convenient medium to pay over the internet. Store value cards equipped with contactless technology is cheaper than debit and credit cards (cost pro transaction not including the set up costs), and precharged software provides an efficient and safe payment instrument for use in the internet. The introduction of e-money raised mixed feelings of enthusiasm and concern (Basel I., 2001).

This thesis represents what electronic money is and presents a series of purposes for its failure to evaluate the data on its penetration in various countries ; even if e-money is considered successful, the success story is questioned. The small relevance of e-money in retail payments nowadays raises the possibility of a society with limited use of cash even without e-money.

Purpose and position of the thesis. E-money is the latest payment tool Electronic money or E-money was created more than 20 years previously as a payment tool. The dynamics of e-money use would be much slower than usual in the earliest stages, mainly as a result of the costly introduction, while at a later time the introduction of complex legislation for an electronic money organization played an detrimental role, said Michael Busk-Jepsen, Executive Director of the Danish Bankers Association

Michael Busk-Jepsen said: "*A cashless society is no matter how long an illusion but a vision which can be fulfilled within a reasonable period of time. Nearly 27% of developed countries' society use cashless payments."* (Hernando, 2016: p.265)

E- money has some privileges. With e-money, there is anonymity. It is not the same case with liquid cash or credit and debit cards. E-money transactions mostly happen on the Internet through an online gateway where the identity of the payer is secured and behind the screens (Каштанов, И. В., 2008). E-money is safer than currency in this regard. Every transaction requires you to provide a personal identification number for the payment to be completed. Each and every transaction made with electronic money is recorded in the bank's and the user's online records.

The revolution in information and communication technologies facilitated the expansion of the electronic payment systems and the organization of new types of payment instruments. Communications became not only faster, easier and safer but also considerably cheaper. Much more efficient fund transfers systems emerged and as a result direct debits and credit transfers expanded considerably. Cards payments have been developing by providing added value services to consumers that rely on application of novel network technologies. Electronic money, the latest offspring of the electronic revolution in payment, is introduced for the facilitation of ecommerce and for low value transactions in general. This is considered of great importance for limiting the use of cash and it has been suggested that it could lay the foundations for a cashless society.

Object of thesis. Along with technological developments in the payment system, the role of cash as a means of payment began to be replaced by a more efficient and economical form of non-cash payment such as electronic money. The development of information technology along with the increasing degree of competition between banks has encouraged the banking and nonbank sectors to be more innovative in providing various non-cash payment service alternatives in the form of transfer and

payment systems using electronic card payments which are safe, fast and efficient, and which are of a global nature.

The concept of cashless society, according to Swartz et have stated that cashless society is a change where in addition to using cash, people are also increasingly using debit or credit cards to do payment. People gradually move away from paper payment instruments to electronic payments, i.e., card-based payments. In addition to the method of debit or credit card, the current development of electronic payment card with prepaid method and e-wallet which is worth the money on the company's online account is already based electronic payment (А. Филимонова , 2012). The number of funds put into the account can then be used to pay for purchases on the corporate network without the consumer having to transfer or swipe the card at that time. Automatic money that users have entered before can be used anytime in virtual as long as the balance is still sufficient.

Methods of the thesis. The model of the research used in the study is a cross-sectional data regression model. The dependent and independent variables are integral part of the regression model. I will put forward the following hypothesis:

H1.0: attitudes about the use of electronic money have a positive effect on the cashless society.

H1.0: attitudes about the use of electronic money have not a positive effect on the cashless society.

In order to measure cashless transactions GDP in USD per capita should be used as dependent variable.

Independent variables are access to the bank account, ATMs per 100.000 capita, bank branches per 100.000 capita, cards per capita, e- payment adoption, POS terminals per 100.000 capita. There will be use two types of variables in this study: explanatory variables and response variables. Give scope of this dissertation, access to the bank

account, ATMs per 100.000 capita, bank branches per 100.000 capita are the explanatory variables and cards per capita, e- payment adoption, and POS terminals per 100.000 capita are response variables.

Information base of thesis. Data of the model features cross- sectional data. The secondary data source covers 2018 period and 47 countries from all continents in the world. Data of economic indicators were collect from the International Monetary Fund which are accessible though their official websites and statistical bulletin. Also e- payment adoption indicator data was collected from VISA and MasterCard reports. Other indicators were collected from statistics on payment from different sources.

Restrictions of the research. Most of transactions make with cash and cashless society should be develop in future years. More countries in the world use cash in their transactions and less cashless payment. Cash is easy to use. Everyone can use cash, because it is a very simple, straightforward type of payment. It is low-tech, as it does not require a bank account or a device by either party to complete a transaction.

The Internet plays a vital role in receiving and delivering information among banks and customers, this forms of banking is describes as Internet banking. This problem is faced in our country too. Problems which mention upper one of the reason why there are less sources about cashless transactions and it is more complicated to make a research.

Scientific and practical importance of conclusions: Practically speaking, there is also some noteworthy policy implications resulted from this study. First, to accelerate the level of financial inclusion, the implementation of digital financial services in the world should be continued especially in the remote areas where the availability of formal financial institutions is limited. Second, improving the quality of supporting facilities, especially the ICT infrastructure, is strongly needed for the implementation of cashless system particularly the telecommunication and information technology. Third, as some demographic aspects are important to explain the perceived readiness,

it should be taken into account for policy consideration. More particular, bolstering the level of financial literacy, particularly for relatively less educated people should be done to improve the readiness level of society.

Structure and volume of the thesis: This thesis is concluded Introduction, three chapters and Conclusion. First chapter is about theoretical analysis of e-money and cashless society. This chapter defines what is electronic money, its role in our society and pros and cons of e- money. Second chapter is contains literature review. In this chapter I covered problems and development spheres of cashless society and how to implement e- money transactions in the cashless society. Third chapter is about methodology and data. In this chapter I made a research that how attitudes about the use of electronic money have a positive effect on the cashless society. Empirical result was covered in this chapter. At the last I gave some suggestions in the conclusion.

CHAPTER I: THEORETICAL ANALYSIS.

1.1.Defining Electronic Money.

By the mid- 1960s economists and bankers in the Europe and North America already acquainted with the possibility that the interconnection of computer frameworks could convey a cashless society. At the same time, bankers needed to manage the practical issues of dealing with an expanding number of clients.

A cashless society requires the digitalization of activities inside and outside of financial institutions. Early steps in the digitalization of retail payments relied on collaborate of organizational processes and the developing technologies (Shaw L, 2016).

The tool of physical cash payment is basic and simple to do however often experience few weaknesses in transactions. If the transaction's own committers are harmed from physical cash, the lack of change money or criminal activity in the form of counterfeit currency. Furthermore, physical money also requires a fee for printing and must regularly make replacement of damaged money. Budget regulation in government will also be risky if it continues to depend on physical currency as the main method in daily transactions (В.Чигридов, 2010).

Updated and clear financial controls are a major benefit that can be delighted with pre-cash-paid frameworks. Expenses incurred to manage the physical cash transaction tool can be eliminated from both the government and the private sector sides. But trying to change the behavior of people who have been comfortable with making cash transactions to cashless is not as simple as imagined, though non-cash provides a variety of benefits that have been made a comment about transactions. Public trust culture in a custom specially about finance will generally keep playing securely using the way money transfers were used. The government also understands that it requires

a semi-instant process ; it needs a major movement involving multiple elements of society such as banking institutions, private companies and other interested figures.

Capitals leading to urban centres and has many support services, it is considered to be more able to advance socialisation called socialisation of cashless society or people who operate. To date, many programs have been developed and implemented concerning the cooperation of many sides, but already how much influence this socialisation can affect the culture of public payment trust that requires to be further researched. This takes into account the need for a program analysis that has been run whether it could be efficient or not. The revolution in communication and information technologies has made possible the expansion of online payment systems and the organisation of different types of payment instruments. Communications not just to became faster, safer and easier, but also significantly cheaper. Much more effective transfers of funds have arose and as a result significant debts and credit transfers have enlarged considerably. Card transactions have been developed by providing value-added services to customers that rely on the application of new network methods. Electronic money, the newest offspring of the online payment revolution, is added for ecommerce facilitation and minimal-value transactions in particular. This is considered of great significance to limit any use of cash and has been proposed that it could lay a foundation for a cashless society.

Electronic money is launched as a cost-effective alternative to real money for low-value transactions and as a useful internet payment medium. Store value cards fitted with card payment technological advances are easier than debit and credit cards (charge pro transaction not even including set-up costs), and pre loaded software offers an efficient and secure payment tool for internet usage. The implementation of e-money raised mixed emotions of enthusiasm and interest. Some economists predicted the full replacement of conventional cash by electronic money and the chance of a cashless society. Such responses may seem overstated today, but they

give a good feeling of the widespread presumption about the imminent influence of electronic money in the turn of the century.

The concept of healthy transaction trust with customer decisions when choosing a specific company or brand that is assumed to be the right choice to use it as it has higher expectations on the company. Consumers are not so seriously concerned that the sacrifice made to gain anything will potentially be wasted or deceived. In the practice of transfers, the embodiment of trust is introduced to satisfy expectations or wishes.

Because it is known that a company or policy will not work correctly if it loses the respect of the people that plays as the specific topic. Trust does not generally grow like that, but will have to go through certain procedures. The consistency of the socialization process will decide whether the community's failure or success of trust is growing. The confidence of a person or group in the transaction will keep making a positive message in some other society to form certain value, norm, or transactional behaviors.

Based on that analysis, trust transaction society will be helpful in identifying the influence of socializing cashless society whereas someone for doing the transaction, they have to trust feel to do the transaction on that warehouse or through tool payment. When they have confidence, consumers will be comfortable spend their money on something. It creates every consumer to have their own expectations and desires, so as a company they can accommodate that by looking at the largest proportion of characteristics of consumers depending on culture, geography, lifestyle, etc.

According to Swartz, the concept of cashless society has stated that cashless society is a reset where, in addition to using cash, individuals are also progressively using debit or credit card to make payments. People are gradually moving away from paper transaction instruments to online payments, for example card-based payments In order

to respond to the debit or credit card method, the present development of online payment card with pre paid method and e-wallet that is worth the price on the account of the company is already predicated on electronic payment The number of funds placed in the account could then be used to pay for products on the company network without the customer having to transfer or scroll the card at a certain time. Electronically controlled money that consumers have joined before can be used in digitally at any time especially as the balance is still necessary.

So it can be reached the conclusion that cashless society is a community-based payment system with electronic systems based on the meaning of un-cash payment that can be used for multiple transactions, either payment or expense. Certain companies that are based online or already have a well-structured online payment system certainly know that the transparency of funds will become more optimal to non-cash transactions. Cash at risk, loss or error of judgement is certainly a concern that many businesses have depended on non-cash payments. This is shown in the onslaught of commercial programs when customers pay for their services and products without cash. Some companies also complimented the security system better by working with respectable and trusted antivirus firms in the community to ensure the safety of non-cash transactions. Both on the payment device, the e-commerce web site, and transaction insurance will already be guaranteed to attract customers to secure non-cash transactions. Cashless society is also built by business performers who cooperate with the event organizer at the time of the exhibition or the exhibition.

1.2. Review Of Electronic Money

Electronic money (e-money) is mostly defined as an electronic stock of monetary worth on a technical method that may be broadly used for making payments to individuals other than the e-money problem. There is no need for bank accounts for this instrument. E- money products divide into 2 category: Hardware-based products and software- based products.

Hardware- based product the obtaining power resides in a private physical device with hardware-based security types, for example a chip card. In the case of software-based products employ dedicated software that purposes on common personal expedients such as personal PCs or tablets. Schemes mixing together hardware and software-based types also exist.

The tool of physical cash payment is easy and simple to do but often met some weaknesses in transactions in cash (Zahid Məmmədov, 2012). If the offenders of the transfer itself can be seen from the physical cash damaged or dirty, the lack of change money or crime in the type of counterfeit currency. Furthermore, physical money also involves a printing fee and must frequently repair damaged money. Budget control in business and government will be risky if it persists to rely on physical cash as the main method of daily transactions. Risky in discussion is a flow of funds which is susceptible to abuse, damaged physical money that does not apply, storage that takes place, and prone to crime robbery / fraud.

Trust is a mental state predicated on one's scenario and social context. When a person decides, he / she chooses a decision on the basis on the choice of those whom he / she can trust more than less trust worthy. According to Wolf, and Lunsford, consumers with high confidence are less likely to experience loss or fraud due to increased expectations on the company in relation to financial transactions. Customers have a lot of expectations that the firm will always fulfill their expectations and demands.

From that implication, the concept of stable transaction trust with customer decisions in choosing a different company or product that is believed to become the right decision of using anything that has expectations on the company. Consumers are not so worried that the sacrifices incurred to gain something will potentially be lost or deceived. The embodiment of trust is implemented in the practice of transactions so that the satisfactions of expectation or desires are met.

Money has thus become an institution for a transparent exchange of goods and services based on a convenient transaction unit, which has been universally accepted within a particular social group. As in the past, money is still in part a material commodity, that is to say physical notes and coins are exchanged for various goods and services. However, unlike the days before the 'information age', today not all money is tangible: increasingly, information about money is becoming more important than money itself

For some time now, banks have learned how to effectively manage large amounts of detailed money information, especially since the introduction of electronic funds transfer (EFT). Advanced communication technologies and services have facilitated the transfer of information across borders and extended geographical reach. They had the effect of blurring tradition in this respect. They form the basis for today's commercial activities within these different groups and between them. Merchants, consumers and banks operate mainly through the use of different information and communication technologies (ICT) (Gabriele, 1999).

Cryptocurrencies are emerging almost daily, with Bitcoin as the most well-known example. These currencies attract the general public's attention not necessarily because of their use as a means of payment, but more so as a potentially rewarding investment. The value of Bitcoin has increased (and decreased!) significantly in a very short period of time.

It is exactly this volatility and unpredictability that makes it very unlikely that these cryptocurrencies will replace the sovereign currencies we know today. Although they may be considered as a means of exchange, they do not fulfill any of the key functions assigned to money: store of value, unit of account and requirement of delayed payment

At that same time they have expressed the viability of the fundamental blockchain or distributed ledger technology (DLT) in many countries, particularly in countries

where cash use has dropped significantly. In certain countries, especially in countries where cash use has declined dramatically, central banks have been looking for alternatives to physical cash. In all those countries, issues such as Will continue to be reliable and safe without money are becoming an progressively real concern.

In an effort to mix the best of all worlds, central banks studied the Ability and experimentation with Central Bank Digital Currency (CBDC). CBDC is defined as an digital form of central bank money that can be interchanged in a decentralized manner recognized as peer-to-peer, meaning that orders take place directly between certain payer and the payer without the need of a central intermediary.

Examples are the eKrona project in Sweden (see below) and the Fedcoin concept in the USA, but other countries, such as China, Russia, Canada, and the Netherlands, have been investigating the possibilities of DLT and CBDC, as well.

The Riksbank is currently running a so-called eKrona system to assess whether it should offer digital digital money to the public. The project is taking into consideration different technical answers and is looking at a solution based on a register and a value-based solution or a combination of all these two. With a register-based electronic krona, the balance will be stored in accounts in a database, while a cost-based solution would be more such as cash at present, as the value would be stored centrally in an application or on a card. The Riksbank has not yet made a final decision on issuing an e-krona and has identified a number of areas that need to be addressed before it can make that decision.

Many advocates of electronic payments have long predicted a cashless society. But is that a realistic future and, if so, when? Or is it nothing but an academic concept that will never actually materialise?

In many discussions, it appears to come down to a matter of definition, or better yet: re-definition. One could imagine a future in which cash maintains its current leading

and crucial position in day-to-day transactions. As we've seen, paying with cash is still the norm in the vast majority of countries around the world. And with more than 2 billion people unconnected to the electronic banking infrastructure, cash is, by and large, the only option available to them for participating in the day-to-day economy. For many people around the world, cash provides the lifeline to social and especially financial inclusion.

As we have seen throughout this World Cash Report, cash remains the cornerstone for conducting day-to-day transactions. For many people around the world, cash is the only payment method available to them that allows them to actively participate in our economic society. In that sense, cash is the starting point for financial inclusion. And even if they have a choice, many people still prefer to use cash to complete transactions.

At the same time, many initiatives are being undertaken to further extend and improve non-cash payment infrastructures, for instance via cards or mobile networks. This trend is clearly present in most if not all countries around the world and will Have an influence on the use of cash and its share in the total payment mix.

This, in turn, impacts the way cash cycles are organised. Different models have been identified, all pursuing the shared objective of optimal cost efficiency, availability, and reliability. The various models are related to a country's level of cash dependency, and can, at the same time, be used as an inspiration for future development.

In fact, banks have constantly learned how to manage their information and financial networks more efficiently and have been important ICT users in certain areas. Similarly, consumers and traders learn to exchange goods and services in different ways. Recently, the advent of the Internet and the opportunity for direct electronic ordering and delivery was one of the most important developments in this area. However, electronic commerce still has to overcome the main obstacle to its

proliferation, which is an appropriate and instant payment method (Astuti, P.H., Trinugroho, I., 2016). This paper examines one such innovation in payment systems, i.e. electronic cash, and in particular aspects relating to its generation, dissemination and implementation in the economy.

There are two main electronic cash systems: Mondex and DigiCash. Both systems have been chosen because they are similar in what they try to achieve, but they differ in the ways they choose to achieve it. Mondex was developed in a banking context and is now owned by several banks, while DigiCash is an independent technology supplier. This focus enables comparative analysis of the links between user and producer in the electronic cash industry. The main issue discussed is the extent to which these links lead to a successful commercial design.

Electronic cash is a new technology, but there are already many worldwide pilot schemes. Approximately 63 percent of all consumer payments are in cash and the various systems now emerging are trying to target the market for cash payments (Chen, 2008). Electronic cash can be used for physical transactions, but it is expected to play an important role in facilitating Internet trade, which has not expanded so far as some observers expected. Many observers argue that this is due to a lack of infrastructure for payments (Beck, T., Chen, T., Lin, C., and Song, F.M., 2016). The trade in small information packets that cost very little to transmit is a major element of the Internet business. Current payment methods can be both expensive and cumbersome for very small purchases, making electronic cash an attractive option. This follows a historic trend to reduce costs by introducing new' money' forms.

Electronic cash is not claimed to eventually completely replace notes and coins. Most electronic cash systems, however, aim at universal accessibility. This depends on the widespread public acceptance of electronic cash, which, in turn, requires significant investment from the financial services industry and traders. These costs are expected to eventually be transferred to the end user. This study examines the nature and source

of this investment, as well as the financial services industry's willingness and ability to pave the way for electronic cash deployment.

It should be noted that banks currently incur significant costs in the handling of bills and coins. In this respect, electronic cash, as in the virtual world, promises a reduced cost future, but this will require significant initial investment by the financial services industry. Is investment by banks, in their dual role as users and suppliers, necessary for the diffusion of the technology into the economy? Do banks need to 'lead' the innovation process? There may be other actors on the supply-side who can lead the market and whose participation will be crucial for the development of this technology.

There are many implications of the development of new and sophisticated technology for financial services payments, such as electronic cash. Legal and regulatory implications include effects on bank supervisory authorities, proper fulfillment of contractual payment obligations, confidentiality and data protection issues, as well as control of illegal money flows (i.e. tax evasion and money laundering) (Siang, 2004). Other interesting aspects include the effect of electronic cash on international monetary markets, as well as its effect on money supply and economic growth. This study focuses on the various players in the electronic cash market, their roles and their interrelationships within the context of the innovation process.

The concept of cashless society, the principle of cashless society has stated that cashless society is a reset where, in addition to the use of cash, individuals are also progressively using debit or credit cards to make payments. People are gradually moving away from paper transaction instruments to online payments, i.e. card-based payments.

In order to respond to cashless society, non-cash transaction payment tools always use advanced digital technology including such digital card, digital account, and internet. To create all these tools, of course, it is necessary to follow point by point until people could see how the high technology is, and then in the years ahead it is possible to

come up with modern technology that can not determine now (Milne A. and Parboteeah C., 2016). These innovations offer many features that can make the transaction easier and safer to use to make customers feel comfortable doing the transfer of funds on the recent technology payment. People can not eliminate technology coming into their lives because innovation from different brands will always bring anything really new idea or concept successful to win the market and work cooperatively with another product.

The social system must learn and accept all innovations, even though it reduces human influence in many segments, such as no need for cashier on the gate. t is the challenge for players to adapt a new era based on computer technology, so they need to improve their understanding in the future, not to replace technology, but to benefit technology such as controlling, maintaining, or making new transaction methods in the future. The first step towards innovation in technology devices is knowledge such as open-minded or innovation-conscious, and then how the above tool works to help transactions become more efficient. After that's how they want to agree or disagree with innovation. On this step, separate people can have their own arguments based on their view. But back to sayings before that, technology growth can no longer be avoided, so new digital payment tools are always growing. If there are refusals, they will face a new era late then, in the early part, it will be difficult to compete for coming years occupation opportunities.

So the choice to face the innovation that comes up is the significant thing to look at how much people want in adopting development like new device payment technology. When someone has also made a decision, it suggests that he / she already is preparing for something new for life, such as learning how to operate the tool and affirming that in everyday activities. Based on the professional background, then the issue research is just how the socialization impact that has been heading on for those and its impact on society in creating the non-cash transaction's tradition of trust. Thus

the purpose of the study is to know the impact of socialization that has taken place for them and its impact on society in shaping the culture of believe of the non-cash transaction.

1.3. The role of society in the regulation of cashless systems

Without cash it is harder to hide money from tax obligations. For this reason, governments and their agencies love electronic transactions. The governments like the detectable and traced records that can easily manage with cashless payments. In our country laws limits cash transactions too.

The key participants of the cashless system regulatory include the Central Bank, credit organizations, and other bank industries. Central banks manage risk management and a specific list. Security issues of payment systems. In particular, the Central Bank control of liquidity risk, credit and systemic risk of the payment system, liquidity of the system participants is being lead, operational functions are performed. Lack of accurate risk control can cause serious problems or even systemic crisis of settlement at the regional or state level (Eyers, 2018).

An important role in the development of the cashless market, like any other high-tech standards, defining the parameters and functionality of products, put on the market (card products). To the key standards of the cashless industry include the international standard for chip card transactions - EMV standard. This standard was developed by the largest card payment systems. Gradually, it goes into the category of mandatory for industry participants. In 1993, the international systems MasterCard, Visa and Europay launched an initiative to create international project, the key task of which was the preparation and unification global specifications for credit and debit cards with a chip and serving them hardware and software. The project was focused on enhancing safety payment card transactions. In the future, the project was attracted to various other payment systems, in particular, JCB and American Express (Handbuch, 2008). Now project participants are actively stimulating the transition to

microprocessor cards. Practice has shown that the widespread spread of EMV technology gives opportunity to reduce card fraud (for example, representatives of the European of the central bank in summarizing the analysis of fraudulent activities in 2015 noted that the introduction of EMV caused a shift in crimes of this kind from the SEPA region in the states where cards are more common with magnetic strip.

Payment systems based on electronics have existed since the 1960s and have grown in number and sophistication. The most important development was the use of electronic funds (EFT); banks are still using this method to exchange 'money.' An EFT is essentially a debt transfer from one bank to another. Much of the banks ' money is in the form of debts owed or owed to them. The bank's computerized records contain evidence of this debt. The EFT systems are mainly concerned with information management relating to these monetary debts. They enable rapid and efficient information transmission between banks and the resulting adjustments to their computerized records (Van Hove Leo, 2006). The effect of an EFT is a change in each bank's debt. Bank records are adjusted in accordance with their contractual relationship, which is determined by organizations such as CHAPS and SWIFT, of which they are members.

There are also systems in which the service provider acts as the agent of the customer, such as First Virtual Holdings Inc., which operates an Internet Payment System. First Virtual (FV) gives customers a virtual PIN (an alias for credit card information). Funds can then be debited in favor of First Virtual from that card. Possible buyers send a properly authenticated Internet payment message to First Virtual when making a purchase, which then debits their credit card immediately. The company keeps an account of the amounts received from buyers and regularly deposits these amounts in the bank account of the seller (less charge). Merchants subscribe to First Virtual on the basis that all transactions result in customer collection and payment to the seller. The effect of a First Virtual transaction is that the debt of the buyer to the seller is

converted into a debt owed by the buyer to his credit card provider and a debt owed to the seller by First Virtual. First Virtual therefore acts as a repository for sensitive information by third parties, and replaces the obligation of the buyer to pay the merchant with its own obligation to pay. In a traditional EFTPOS transaction, it essentially plays the same role as the buyer's bank. Systems such as First Virtual do not have physical cash-like characteristics.

There are two main electronic cash types:' prepaid' and' true' electronic cash. The former is based on float and the latter is based on token.

The value claim is held elsewhere in float-based systems, such as in a bank account. The electronic cash issuer is paid by the consumer (payer) and deposited into a float account. The consumer receives a value store for this payment, which can be spent later. In such systems, a third party undertakes to pay the payer's debt to the payee by contract. This new system of payments is similar to the EFTPOS system. For this reason, a design is not as new as electronic systems that imitate the operation of physical notes and coins more closely.

Token-based systems are closer to "true" physical cash than their float-based counterparts, since they have characteristics such as the transfer of ownership of electronic cash transfers, and the transfer of ownership (accepted by the customer) discharges the debt owned by the customer.

This is the case with physical cash. Since the first type of (float-based) system is similar to traditional debt transfer systems or EFT systems, the consequences arising from its deployment are not as significant as in the case of "true" electronic cash, given the potential of the latter to replace notes and coins. Two of the most important systems which exhibit characteristics analogous to physical cash are Mondex and Digicash.

Mondex. Tim Jones and Graham Higgins of the National Westminster Bank (NatWest) in the UK developed Mondex's initial concept in 1990. Mondex International (MI) controls it. Many banks now hold MI shareholders. In July 1996, NatWest made MI a separate company, enabling it to operate independently. This was seen as the most efficient way to launch and market the product on its own. In July 1995, Mondex's first pilot trial began in Swindon (UK) and is still ongoing. International trials, such as a joint venture between the Royal Bank of Canada, the Canadian Imperial Bank of Commerce and Bell Canada in Guelph, Ontario, have also been carried out. Mondex has targeted universities in the United Kingdom as important pilots: Midland introduced the University Card with York University, while NatWest introduced the NatWest University Card with Exeter University. (http://www.bankofcanada.ca, 2017)

Mondex was developed to replicate the main features of physical cash and thus constitute an alternative to notes and coins: Mondex claims that physical cash is not a complete replacement, but a complementary system. The Mondex system is based on intelligent card technology. A smart card is a small device that contains a small chip between plastic layers. Its main advantage is that portability and easy access can be provided. It is programmable and can store frequently changing data, which differs considerably from current magnetic strip cards. Chips with intelligent cards are also more resistant to manipulation than magnetic strips. Merchants do not need to access centralized databases online with smart cards. They use personal identification numbers to verify the card's ownership. Value is stored on intelligent cards until it is used as a goods or services payment. Value can also be transferred to the card of another consumer. Smart cards can be recharged with value, which distinguishes them from existing services such as prepaid phone cards. As with traditional non-cash payment systems, transactions are not centrally recorded. Data on the last ten transactions are stored on each card's chip.

Mondex differs from other systems by claiming that it has no clearing requirement. To settle and clear transactions between its users, it does not need a third party. This increases the speed and adds to the simplicity of the transaction. Mondex is making its smart card technology suitable for Internet use in order to keep up with other emerging technologies. Mondex can currently be operated over the telephone network. The Swindon pilot allows users to load value on their Mondex chip card using the public telephone network in conjunction with British Telecom. Mondex also envisaged an intelligent card reader attached to a personal computer that would allow a customer to download electronic cash from the Internet. It has not yet piloted a system that allows purchases on the Internet, where cash can be downloaded and transmitted over the network. In March 1997, Mondex and AT&T announced that they were planning to launch a solution to make micro-payments commercially viable on the Internet using the electronic cash platform of Mondex. Mondex's strategy was to focus on the off-line market first because of the currently perceived limited scope of Internet trade.

Digicash. Digicash is a private company founded by Dr David Chaum in 1989 and based in the Netherlands in Amsterdam. It created a now patented Internet money product called 'e- cash' and also had experience in the development of intelligent card technology. 'E- cash' is designed to make secure payments via e-mail or the Internet from any personal computer (PC) to another workstation. The coins ' value is then stored digitally on the customer's PC's hard disk. Each coin is encrypted by the issuing bank's identity, a unique serial number and its value. The customer who selects the value of the payment initiates payments for goods and services. This payment value is transmitted over a network to the workstation of the recipient merchant. The beneficiary then checks the validity of the coins used to pay the issuing bank and deposits them in his bank. Each coin deposited with its own digital signature is validated by the bank receiving the "e- cash."

Once validated, the bank will store the serial numbers in a database containing the serial numbers of the already spent coins. It uses the database to verify the fraudulent use of coins (Rafiq Bəşirov, 2016; E.Balayeva, Ş.Həmişəyeva, M. Sadıqov, 2003). There is a requirement for some clearance of funds in this system. Although the issuing bank knows the value of each coin issued to the beneficiary, the coins are issued using a "blind signature process." This means that the issuing bank cannot connect the customer to the serial number of the deposited coins, and the transactions of the customer remain private in this respect.

To run their "e- cash" on the Internet, Digicash has developed a complete technological system, including terminals, PIN pads, host computers and all related software. It now configures its current system to be compatible not only with the Internet, but also with off-line trade. Some observers have indicated that this is because Digicash has realized that its focus on Internet trade is limited.

Other visa cash. Another electronic cash initiative is worth mentioning, particularly in the UK, as a major competitor for Mondex and DigiCash. Visa International manages this scheme and is known as Visa Cash. Visa Cash also uses chip card technology and is aimed at payments of small value. In essence, it is a financial institution that is a Visa member and issues Visa Cash cards (which are pre-loaded with value) to consumers who can then make purchases of low value at registered traders. The consumer inserts a Visa Cash card into the merchant's terminal to make a purchase, which reads the information stored on the chip and effects the transaction (Z.Məmmədov, Ə.Abbasov, R.Rzayev. Ş.Həmişəyevə, 2003). The transactions are collected and sent to Visa, which then clears them and makes the necessary arrangements between the participants. This is similar to how Visa's credit and debit cards are operated. The main difference is the increased transaction speed and the use of chip technology that enables disposable or rechargeable cards (Zahid Məmmədov, 2010; Dünyamalı Vəliyev, 2000). This payment system, however, differs significantly

from Mondex in that it involves a centralized settlement and clearing procedure and is based on credit and debit card operations. It is closer than Mondex or Digicash to EFTPOS-type systems and is not physical cash. At the 1994 Olympic Games in Atlanta, a Visa Cash trial was conducted.

There are three main kinds of players in the electronic money market: independent issuers of electronic cash, banks and credit card schemes. These can not necessarily and definitely be placed on the market's supply or demand side. Indeed, most players can play both the role of technology suppliers and users. Issuers like Digicash and Mondex are suppliers, but also technology producers. They are the generators of innovative technology, but they also provide different users with innovation (electronic cash systems). These users may be either end-users of the technology, such as individual consumers, or "intermediate users," who need the technology to improve their services to their own customers. However, when they themselves are innovation generators, these intermediaries can also be technology suppliers; this was the case with the Mondex initiative, which was first invented by the National Westminster Bank in 1990.

Electronic cash systems are based on smart card technology, such as Mondex and Visa Cash. However, payment systems such as DigiCash's Internet segment are software-only solutions. It is interesting to note that Mondex and Visa Cash are in this respect service innovations based on manufacturing innovation (chip technology), while DigiCash is primarily a service innovation. But the service side of innovation is dominant in all three systems. These payment systems seem to fall within a "user-dominated" third stage. The initial investment in new technology to improve delivery efficiency (the first phase) is represented by the need for information technology and its use in the early development of computerized records. The emphasis on improving the quality of delivery (second stage) led to the possibility of electronic transfer of funds between banks (EFT) and banks and retailers (EFTPOS).

1.4. E- Money Transactions: Pros And Cons.

The banks ' main advantages for the end user are convenience, simplicity and speed of check-out. Interviewees pointed out the need for a more appropriate method of payment for sales environments and remote applications. One interviewee, like a representative from the credit card scheme, referred to transport applications. The main marketing platform for DigiCash is the privacy protection benefits that E-money offers. On the other hand, Mondex does not regard privacy as a major consumer concern. Mondex representatives reported that they had conducted various market surveys in major European countries in which they found that most consumers are not concerned about keeping their transactions private.

While the advantages of electronic money for consumers seem quite obvious to banks and technology providers, organizations outside the banking sector do not. Telecommunications representatives, for example, pointed out the uncertainty and nebulous nature of consumer benefits. In their view, it is difficult for the consumer to understand and perceive the advantages of this new service product. In fact, this is the main obstacle to its acceptance of the market. The views of consultants and academics were not different. The interviewees suggested that the consumer's benefits still remain clear. The market is not ready to introduce electronic cash. The consumer's need or demand for such a product is not distinct and clearly articulated. Instead, technology is ahead of consumer demand. However, it does not follow that user-need does not play a role in the innovation process, or that the traditional "technology-push" model describes the process more accurately. This illustrates the dialog between the demand side and the market's supply side, facilitated by the role of a specific user type.

Generally, cash does not play a role in high-value payouts, so its disappearance would have no impact on the structure of high-value payments and linked factors. The central bank would also provide payment balances (reserves) for participants in a

cashless society's high-value payment system, as is currently the case and has been for years. In certain words, participants would proceed to use risk-free digital money to settle payouts for that purpose. In other words, participants would continue to use central bank money free of risks to settle payments for the purpose. Then the rest of this section concentrates on the implications of a cashless society for retail payments. There are quite a number of areas of concern: the impact on particular candidates, the strength of retail payment systems, and the impact of retail payment options on competitiveness.

Recall that the assumption of this paper is that people and companies choose to give it up cash and rely instead on electronic payment processes such as electronic payments of credit cards and automated transfers of funds. Therefore, these individuals and companies believe that they wouldn't be adversely affected by the disappearance of cash otherwise they would not abandon cash. However, this result could lead to adverse collective results in time such as decreased demand in retail payouts (discussed below) or adverse effects on some workforce cohorts.

For instance, a small section of the population could still use digital payment mechanisms, but prefer money-and whose demand is not sufficient to make a big difference in aggregate. As a result, such a minority of the population and businesses will be worse off, as their choice without cash would be smaller.

Money is defined as a general metal, paper, or non-cash exchange medium. In specific terms, money is regarded as a generally accepted means of making payments for purchasing goods and services and for the repayment of debts. Money, therefore, has a function that we can distinguish: exchange medium, unit of account, share of value, and, more occasionally, a standard of deferred payments.

For decades, money, issued by the National Central Banks (NCBs) in notes or coins, could be freely converted into precious metals (gold standard). The direct convertibility ensured that cash could be trusted. After leaving the gold standard, all

notes and coins became entirely fiduciary. Financial transactions are based on the fiduciary system, whereby the main characteristic of cash is not having intrinsic practical value as a physical good. This means that cash draws its value from the fact that domestic governments designate it as legal tender. The general acceptance of money as a means of payment for goods and services is fundamentally connected to trust in the money-creating government.

In contrast to cash, non-cash money is not tangible. Given that non-cash money is also accepted as a general form of payment, it also can be used to perform the basic functions of money. As soon as trust in money is tainted in some way, the consumer will seek salvation in an alternative form that is trusted. Cash payment transactions consist of banknotes and coins. Both are legal tender.

Digitalisation is an undeniable trend and an important topic on the global agenda. The United Nations addresses this topic in their Information Economy Report 2017: Digitalisation, Trade & Development, while other central governments, such as the European Union14, have their own digitalisation agendas in place.

These agendas focus on advanced robotics, artificial intelligence, and the Internet of Things, but also on topics more directly related to payments, such as the importance of interoperability and digital payment systems.

The world average is 102.7 mobile phone subscriptions per 100 people (age 15+), and it is interesting to reminde that the differences between continents observed in other social and financial inclusion categories are not as prevalent when it comes to the number of mobile phone subscriptions. Overall, the results show that the numbers for access to electronic payment facilities are increasing, which could, in turn, lead to a reduction in the use of cash. At the same time, cash is still indispensable to the full inclusion all citizens in the day-to-day payment infrastructure.

The way we transact is increasingly changing from an offline, face-to-face environment to an online, longer distance environment, from retail to e-tail. This impacts the way we pay. The global ecommerce market is growing significantly throughout the world and is projected to grow to well over 4 trillion USD by 2021. On top of that, the relevance of ecommerce in overall retail is also expected to increase year on year from 7.4% in 2015 to 15.5% in 2018

Indonesia and India are the rapidly growing retail online markets followed by China and Mexico. The development of digital retail in these countries is toughly linked to the constant improvement of digital access, particularly in the first online mobile communities.

Another interesting case is the surge of countries which have long struggled with typical fixed broadband connections due to the financial or infrastructure limitations. With the adoption of cheaper mobile broadband connections, and without the 'hindrance' of an existing infrastructure, they are now experiencing the full benefits of mobile commerce. This directly affects the way we pay, as the mobile phone enables both online (customer not present) and offline (customer present, or face-to-face) transactions. Transactions conducted via mobile phones therefore directly compete with both traditional electronic payment methods (e.g. plastic cards) and cash.

Changing the way we transact from face-to-face to remote also impacts the way we pay for these services. In many instances, the common assumption is that cash is not the ideal payment instrument for these remote purchases. Even though this holds true for some countries and regions across the world, this is not the case in all countries. Cash on Delivery is still a dominant payment method in many countries around the world. In the Arab world for instance, Cash on Delivery continues to be the most popular payment option in the region, with 50% of shoppers preferring this method of payment. This preference is most prevalent in Egypt, where 70% of the shopping

population prefers Cash on Delivery. Privacy and security remain major concerns for shoppers across the region. While there have been dramatic improvements over the last five years, confidence in online shopping is still lower than in more mature markets.

Innovation is one of the cornerstones for our future society. For cash payments this can be translated into innovation in payment products and innovation in the way the cash payment market is organized.

Even though innovation in payment products predominantly takes place in the electronic payment domain, this does have a potential impact on the use of cash as more and more alternatives become available to the general public. Examples of such product innovations are: internet payments, mobile payments, the increased use of Near-Field Communication (NFC) and QR (Quick Response) code technology, virtual currencies, and instant payments.

When it comes to cash as a payment instrument, continuous innovation is also paramount, for instance, when it comes to production of cash (notes and coins): banknotes are printed on various materials, such as paper, cotton, polymer, or a mixture and increasingly innovative security features to prevent counterfeiting, such as: cylinder-mould watermarks, security threads, security foils, secure windows, printed and covert security features, 3D imaging, holograms, and fluorescent ink, withdrawing from ATMs using mobile banking apps. Mobile banking is a latest trend in internet banking. Mobile banks work with a app and allow their users to get money at several ATMs globally without a service fee. For example, Maltese mobile bank Ferratum Bank can also be used to withdraw cash from all ATMs in Spain, while Dutch mobile bank N26 and Spanish App Imaginbank are accessible at all ATMs around Europe.

Additionally, continuous effort and investment is required in cash cycle organisation to maintain or even improve the current cost-efficiency level.

On a global and continental level, Cash in Circulation continues to rise consistently and has done so for almost as long as this statistic has been reported. In absolute terms as well as measured against GDP, the relevance of cash is continuously increasing in our economy. From that point of view, cash will remain of significant importance across society.

Non-cash payments showed incredible growth rates in several countries studied. In particular, card payment volumes have grown considerably in all countries except Kenya, trying to overtake cash as the most widely used payment tool at the point of sale in several countries. Other forms of online payment have also shown strong growth, as has the availability of the necessary infrastructure (cards, POS terminals, online banking, bank access).

All of this includes the fact that, on average globally, volumes of payment transactions are increasing in real terms, yet online payment volumes appear to be increasing at a higher rate. This conclusions in a reduced share of cash in the total volume of transactions. Although it is true of most countries that cash prices seem to increase. Even though it holds true for most countries that cash volumes seem to be increasing in absolute terms, it should be noted that this is clearly not the case in all countries. Most notably, the key indicators for Sweden clearly show an absolute reduction in cash transaction volumes. Other countries report A comparative decline in use of cash (vs. electronic payments). From that point of view, each country has a different position on the horizontal ‘timeline’, creating a different outlook and a different dynamic in each country’s cash cycle organization.

The trend towards electronic payments seems to be fostered by innovations geared towards facilitating the use of electronic payments methods. Examples of these new technologies are NFC (Near Field Communication) and QR codes, which enable contactless payments by card or mobile phone. A primary example of an innovation at

the infrastructure level is the introduction of immediate payments in many countries around the world.

The additional use of cell phones and wallets (especially in Asia) also propels the use of online payments over cash. The mixture of these technologies, characteristics and devices allows more and more people to progress transactions quickly in face-to-face, electronically and instantly in a consumer-to-consumer or retail environment. These types of electronic payments are progressively taking over the valued features of transaction instruments that previously were exclusively the property of cash, such as direct contract, availability, and simplicity / ease of use.

The main gain of cashless transactions is that a good record of all economic transactions is probable to keep. It is fixed to remove black marketplace or underground economies that frequently prove injurious national economies. Since, cash is the main mode of transactions in currency laundering and terrorism supporting, a cashless economy dispirits such activities. Central government also get advantage from such cashless transactions by way of it allows central controller of money supply and this is easier to monitor revenue tax waged by an individual. Cashless transactions are supportive in the context of harmful global inflation and quantifiable easing. Going cashless is also falling the levels of fraud prevalent in the country.

Some more welfares of cashless economy are as bellow:

a) Real estate prices will decrease because of controls on black money as greatest of black money is spent in Real estate.

b) There is a method of issuance of money where government bear costs in contrast to designing, developing, printing, storing, moving and engaging etc. All this can be sidestepped by digitalization of cash dealings.

c) It pave way for worldwide availability of banking facilities to completely as no physical infrastructure is wanted other than digital. Societies can make their expenses and receive globally.

d) There is greater effectiveness in welfare programs as cash is wired straight into the accounts of addressees with great transparency.

e) There are effectiveness gains as transaction charges will also come down by by the methods of digital payments.

f) Notes simply is supposed to be false, which has a huge harmful impact on economy. By going cashless operation, accountability of notes and moneys in circulation will be possible.

g) Filthy or tobacco stained notes filled of germs are an average in India. There are many such events in our life where we significantly or unknowing give and takings germs in the form of notes. This can be escaped.

h) In the recent movements of digitalization will reduce prices of operating ATM's.

i) Impact of digital trades increase in GDP by developing markets resulting progress of country economy.

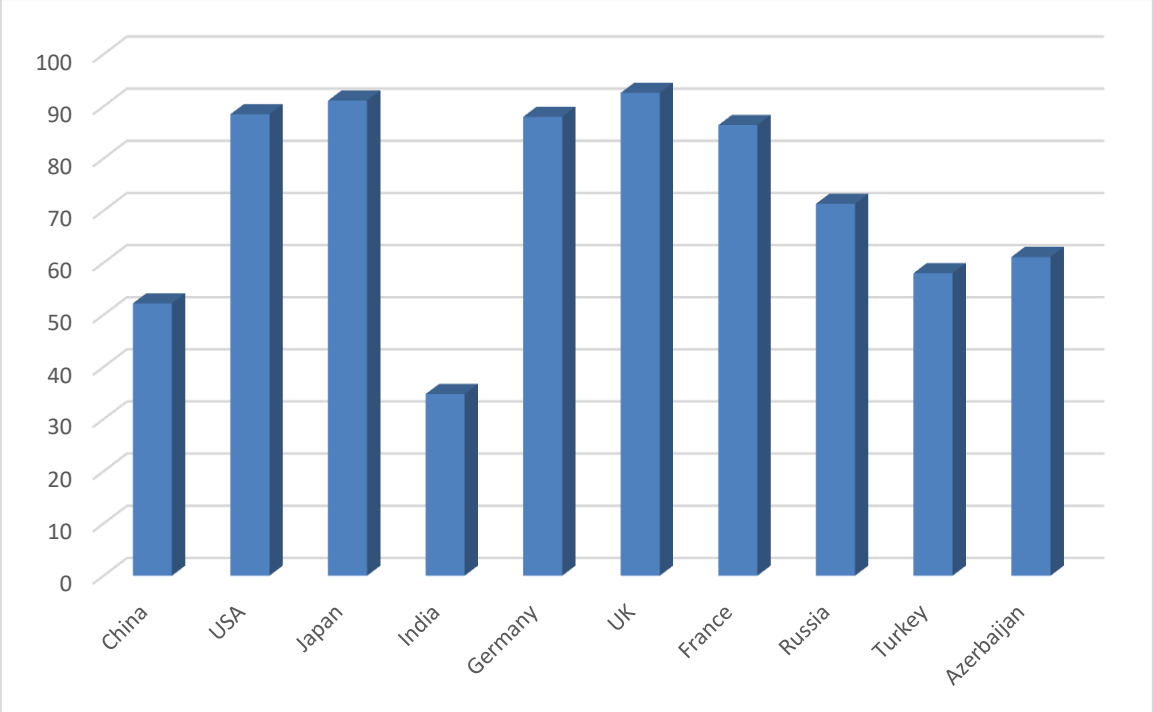
In the process of digitalization of an economy of the country, it is very important to assure that the availability of proper sources to setup require technology and sufficient manpower to provide prompt services in time. A bank account is a primary requirement for digitalization. Hence Banks have a core responsibility to improve and develop them self -first. There are some challenges in the process of cashless economy.

In many countries cash demand has progressively gone down over a sustainable period. As households rely far too much on cash, traders could be expected to refuse to accept cash as payment for products and services, which would further prevent

demand for cash. Further, financial institutions generally are reducing their cash operations to reduce costs. Such developments tend to be mutually reinforcing and, over time, could lead to the emergence of an economy where cash is no longer used at all by individuals and firms, largely as a cumulative result of their own choices.

Internet plays vital role among banks and customers to accept and deliver information, this methods of banking is defines as Internet banking. This issue is faced in our country too. The figures showing up the percentage of Internet users of Azerbaijan in contrast of other countries.

Graph 1: Internet Users in different countries in % of population by 31st of December 2018



Source: Internet world stats, https://www.internetworldstats.com/

Financial literacy is additional big task in Azerbaijan to adopt digital currency structure. Financial literacy basically has founded on the use of technology to effectively use the control of medium like PC, mobile and internet to allow people to have abilities, knowledge or info about financial instruments.

Our country has a varied network of slight retailers in all over nations area and most of they do not have adequate resources to invest in electronic payment organization to receive and make expenditures digitally. There is also vested attention in not moving near cashless economy and most cards. Further, non-users of debit or credit cards are not attentive of the profits of credit cards due to nonexistence of awareness of new skills and financial literacy.

From the point of view of our banks, it is difficult to use payment systems issued by private companies on the respective bank websites. It could be limitations on using savings accounts to refill digital wallets or a increased access to payment entry points. Regulatory bodies will have to take a hard stand against banks ' mortgage-seeking behaviour.

Overall, digital payment economy can be accomplished through the acceptance of reasonable online payment methods. It only requires complete proven new financial policies, centrally controlled administrative control, standard monitoring of bankers, government agencies, or other private services. Safe and secure service providers such as immediate transaction certification, simple account statement, no hidden fees, full money control, shortened transaction system by fulfilling mandatory data. As an overall assessment, most of the world's leading developed countries are move in a very ingenious way of cashless economy.

CHAPTER 2: LITERATURE REVIEW

2.1 Literature Review

Cash is the payment instrument which is most recognized and commonly used in the world. At the same time, electronic payment methods are becoming more widely available and their transaction volumes are increasing rapidly. These electronic payment instruments are compatible with our increasingly digital society, where electronic and mobile commerce are becoming more relevant. Nowadays, electronic payment methods are becoming more widespread and their transaction size are growing rapidly. These electronic payment tools are well-matched with our progressively digital society, where electronic and mobile commerce become more important. Hence there are some questions become: what makes cash so determined and common in our society nowadays? Why is cash key element in the future? What is cashless transactions place in a current digital society? How can we continue creating effective electronic money payments and reachable to all in society?

This study collected data from some countries of six continents from previously years. Additionally to the global and mainly viewpoint, we will also look at specific countries, recognizing the fact that cash use and cash cycle organization vary greatly between countries. This research view let us draw comparisons and analyze why cash status contrasts so significantly from country to country, sometimes even among neighbors.

2.2. Internal and external factors of cashless transactions in the world.

It is very difficult to form the exact number of cash transactions for countries. Instead, I have used the factors to make the position of cash for transactional purposes with an educated assessment.

Additional source of information is diary surveys, which are conducted throughout the world. Even though these surveys are not done consistently and vary widely (e.g. in scope and researched population), making it scientifically incorrect to simply compare the results, it is insightful to present an overview of the outcomes of the most recent Payment Usage Surveys from around the world. (Appendix 1)

Overviewing Table 2 in 17 studied countries out of 24, represents more than 50% of all payment transactions. According to the ECB Diary Study in Europe cash represents 78.8% of all transactions in volume and 53.8% in value.

Changing the way we transact from face-to-face to remote also impacts the way we pay for these services. In many instances, the common assumption is that cash is not the ideal payment instrument for these remote purchases. Even though this holds true for some countries and regions across the world, this is not the case in all countries. Cash on Delivery is still a dominant payment method in many countries around the world. In the Arab world for instance, Cash on Delivery continues to be the most popular payment option in the region, with 50% of shoppers preferring this method of payment. This preference is most prevalent in Egypt, where 70% of the shopping population prefers Cash on Delivery. Privacy and security remain major concerns for shoppers across the region. While there have been dramatic improvements over the last five years, confidence in online shopping is still lower than in more mature markets.

2.2.1. Internal and external factors of cashless transactions in the Africa.

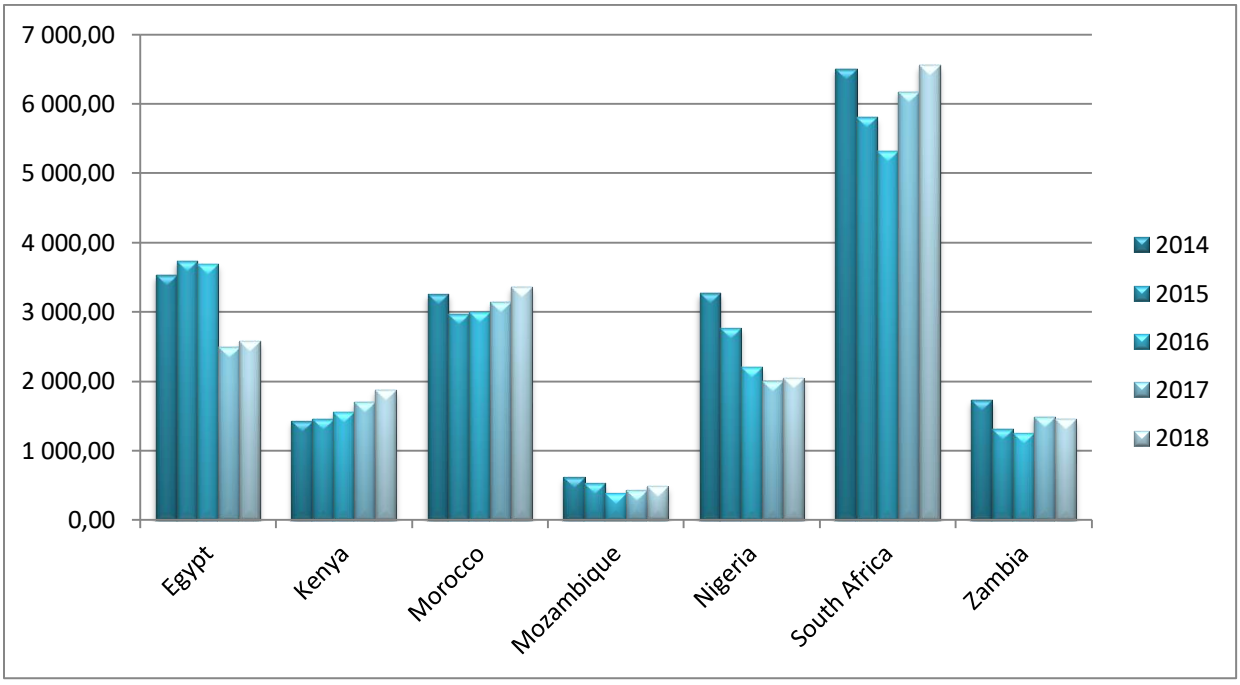
World's second largest continent is Africa. This continent contains 54 sovereign states and 41 types of currency. My survey contains seven countries and their financial indicators. Countries are followings:

- Egypt
- Kenya
- Morocco
- Mozambique

- Nigeria
- Zambia
- South Africa

Non- cash in circulation/ GDP ratio rose an average 8.7% in local currency in the reporting countries during 2017- 2018 period. This ratio is notable dropped by 32% over the 2015- 2018 period in South Africa. Egypt, Morocco, South Africa, and Mozambique showed an upward trend and Kenya, Nigeria and Zambia showed a decrease in the non- cash in circulation when pitched against GDP. Nigeria (2.0% in 2017) and Zambia (3.0% in 2016) are among the lowest ratios in the world.

Graph 2: GDP in USD per Capita for countries in Africa



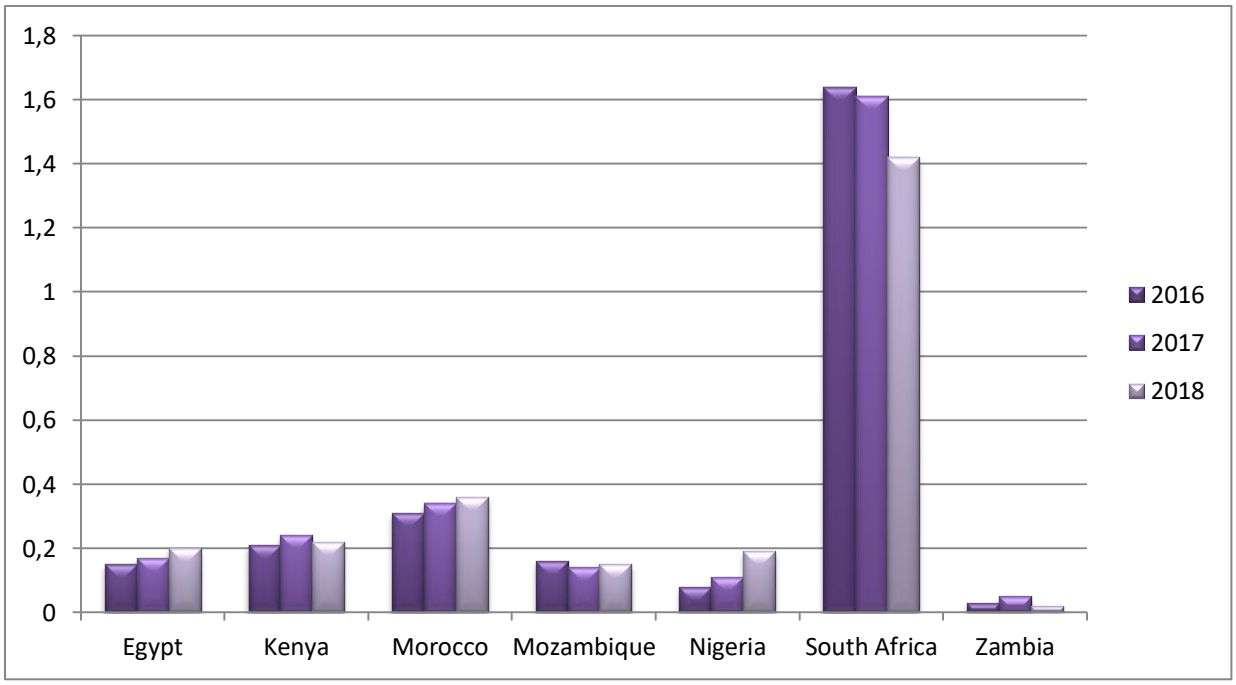
Source: International Monetary Fund, https://www.imf.org

Cash in circulation has risen in most countries in absolute values, yet the GDP's of half of the studied countries has risen faster, resulting in a diminished share of cash in circulation in the country's economy. The value of ATM withdrawals, the most direct measure of the use of cash in day-to-day transactions, is rising in all African countries, while access to cash through bank branches and ATMs is rising with sufficient room for

further growth towards global averages. However the traditional electronic payments infrastructure in a retail environment consists of cards and POS terminals. Throughout the world, card transactions are quickly becoming the most common form of electronic payments. In Africa, however a different picture emerges.

Cards per capita fall short of the global average of 1.8 card per capita for all African countries reporting on this indicator. Most countries showed a positive trend (only Mozambique reported a decline in 2018, against its positive trend from previous years) with significant growth percentages. In absolute terms, cards are not in widespread use across the African continent.

Graph 3: Cards per Capita for countries in Africa



Source: Statistics on payment, clearing and settlement systems in the CPMI countries, December 2018.

The card infrastructure also lags behind at the receiving end, with 40-70 POS terminals for every 100,000 inhabitants in most African countries. South Africa is the notable exception, with well over 700 POS terminals in 2016, which is still far below the global

average of around 1,500 terminals per 100,000 capita. Most countries have reported positive growth over the past five years, with the exception of Nigeria. The low availability of cards on the one hand and POS terminals on the other translates into very low number of debit and credit card transactions per capita, as in the world average is 103 card transactions per capita per annum.

Table 1: Cards transactions per year per capita for countries in Africa

Country	Cards per capita
Egypt	0.5
Kenya	4.4
Morocco	0.9
Mozambique	0.7
Nigeria	0.3
South Africa	50.3
Zambia	0.0

Source: The Organization for Economic Co-operation and Development, http://www.oecd.org

When looking at the latest data for overall access to the (electronic) banking environment Africa is improving but, except for South Africa, still has some ground to cover to reach the average global level of 60.7%.

In general, the conclusion here is that Africa scores below the world averages in the studied categories. The number of cards and the number of POS terminals, as well as access to a bank account, fall far short of other continents around the world. Internet access also leaves much room for improvement throughout Africa. The number of electronic payments conducted by Africans is negligible in African countries reporting these numbers, especially when viewed through the lends of number of card transactions per capita. The single exception to this general trend is the number of mobile phone subscriptions, which is on par with the rest of the world.

2.2.2. Internal and external factors of cashless transactions in the Asia.

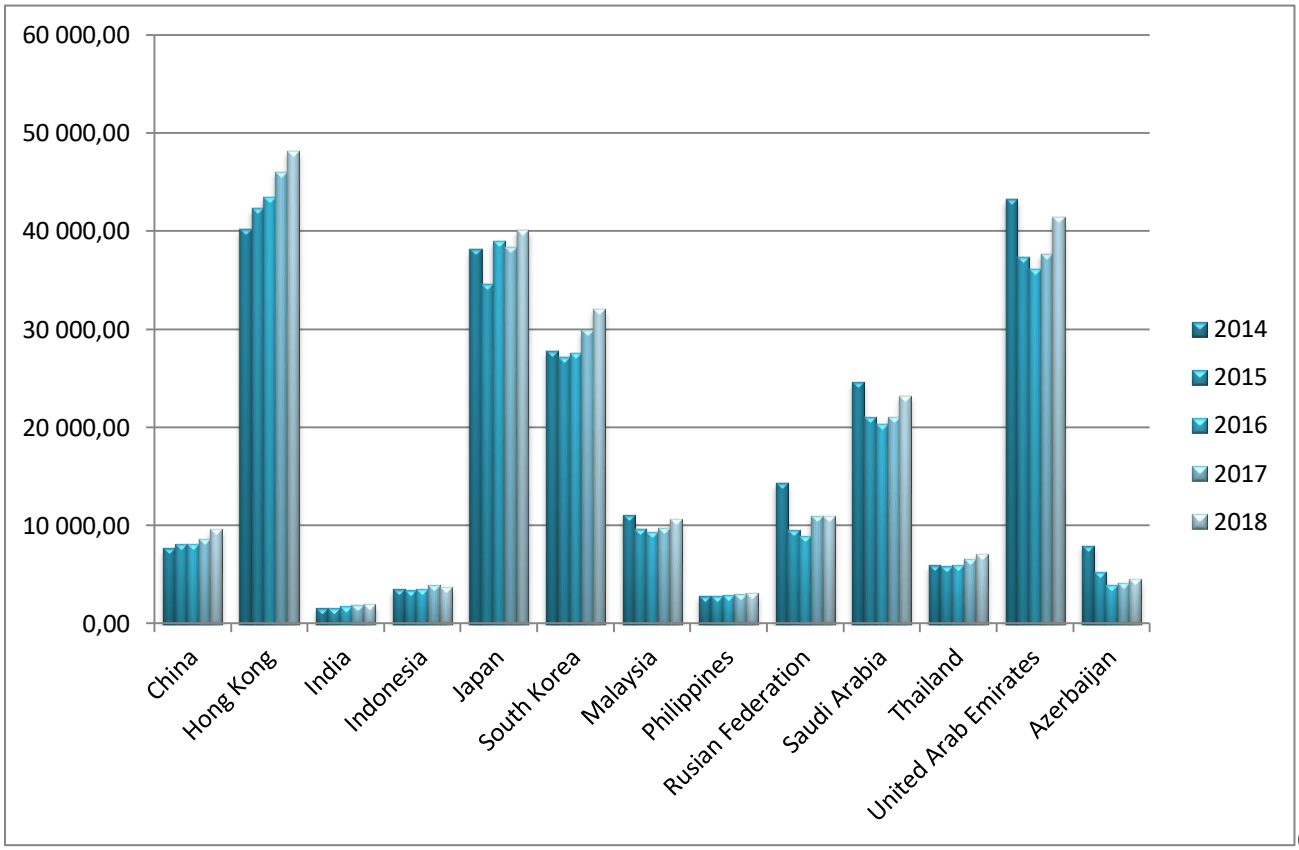
Asia is the world's largest and most populous continent. My survey contains seven countries and their financial indicators. Countries are followings:

- China
- Hong Kong
- India
- Indonesia
- Japan
- South Korea
- Malaysia
- Philippines
- Russian Federation
- Saudi Arabia
- Thailand
- United Arab Emirates
- Azerbaijan

1. The amount of Currency in Circulation (CiC, local currencies) is on the rise in all countries in Asia in absolute terms, with an increase of 32% over the past 5 years, or 6.1% on average per annum. Overall, the ratios are like other regions in the world, mostly ranging between 5 and 10%. Hong Kong, Japan and Thailand show somewhat

higher ratios. (https://www.stat.gov.az/?lang=en, 2018; https://www.cbar.az/, 2018; https://www.centralbanking.com/regions/china, 2017; https://www.rba.gov.au, 2016)

Graph 4: GDP in USD per Capita for countries in AsiaSource: International Monetary Fun

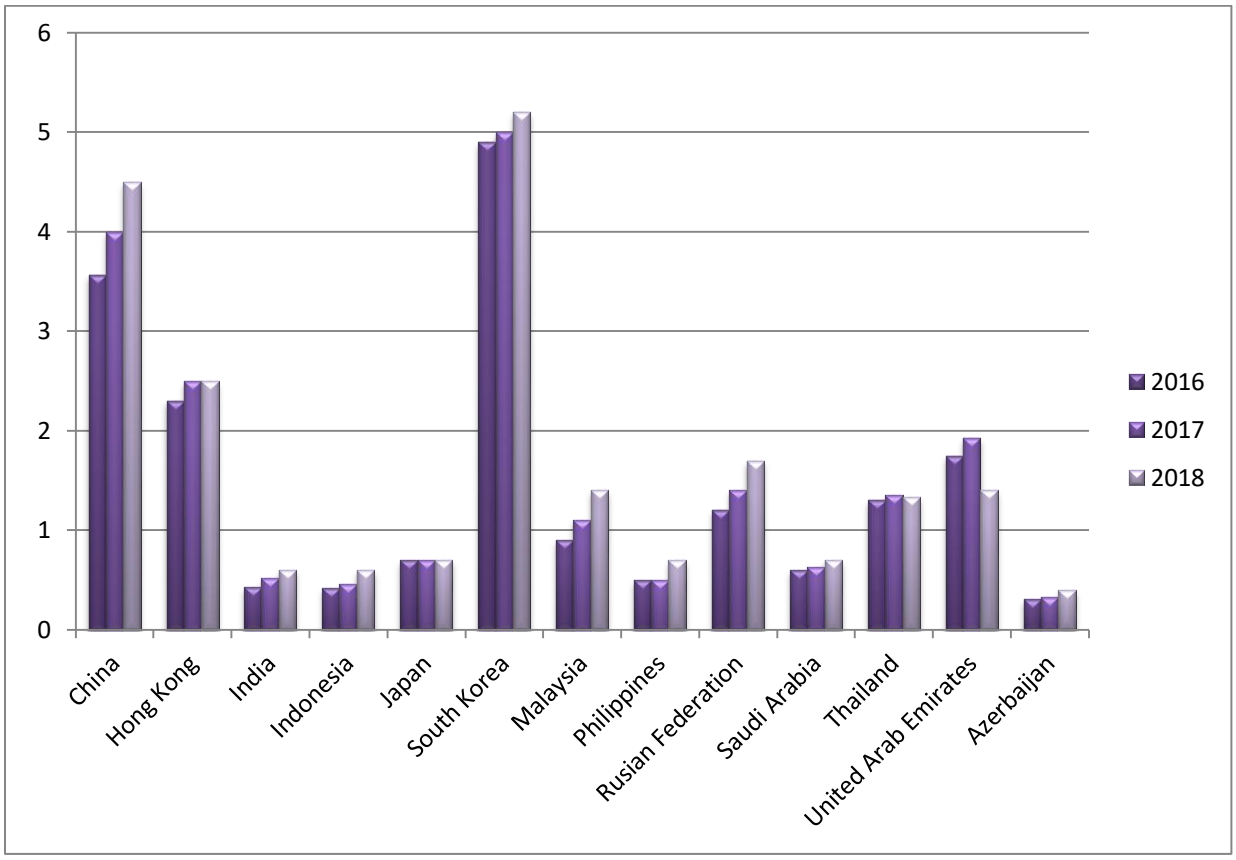


d, https://www.imf.org

Even though cash transaction volumes are unavailable for most countries, the high use of cash in the region is further evidenced by research conducted by a number of payment service providers in the ecommerce industry, such as Adyen and Payfort, which cite remarkably high percentages of online purchases being paid with Cash on Delivery. Payfort compares cash with credit card usage for online purchases. Given that these already high percentages occur in an ecommerce (remote) environment, it is most likely these percentages would be even higher in an offline (face-to-face) environment, where cash payments are generally regarded as more suitable.

With only a few exceptions, card issuance in Asia lags behind when compared to the global average of 1.6 cards per inhabitant. The exceptions are China with 4.5, South Korea with 5.1 and, to a lesser extent, the United Arab Emirates, with 1.9 cards per inhabitant. Cards per inhabitant have been increasing in almost Asian countries at double-digit growth rates over the past 5 years. China (+69.3%), India (136.3%) and Indonesia (56.7%) experienced the strongest growth.

Graph 5: Cards per Capita for countries in Asia



Source: Statistics on payment, clearing and settlement systems in the CPMI countries, December 2018.

Overall the Asian Market is rapidly developing its electronic payment capabilities and, as a consequence, is strongly reducing its dependency on cash. It is expected that this trend will continue with some countries with expanding their electronic payments

infrastructure, through increased roll out of cards, POS terminals and other electronic payment methods, optimizing their electronic payments infrastructure, improving social & financial inclusion rates, including the number of bank accounts, internet access, electronic (internet and or mobile) banking, mobile phone subscriptions, 0ptimizing their cash infrastructure to improve cost efficiency, and starting projects to reduce the use of cash (such as the Coinless project in South Korea, or the Cashless project in India).

Furthermore, it is expected that the development of e- and m-commerce in combination with increased relevance of social media and e-tail platforms will strongly influence the way Asians will pay in future years.

2.2.3. Internal and external factors of cashless transactions in the Europe.

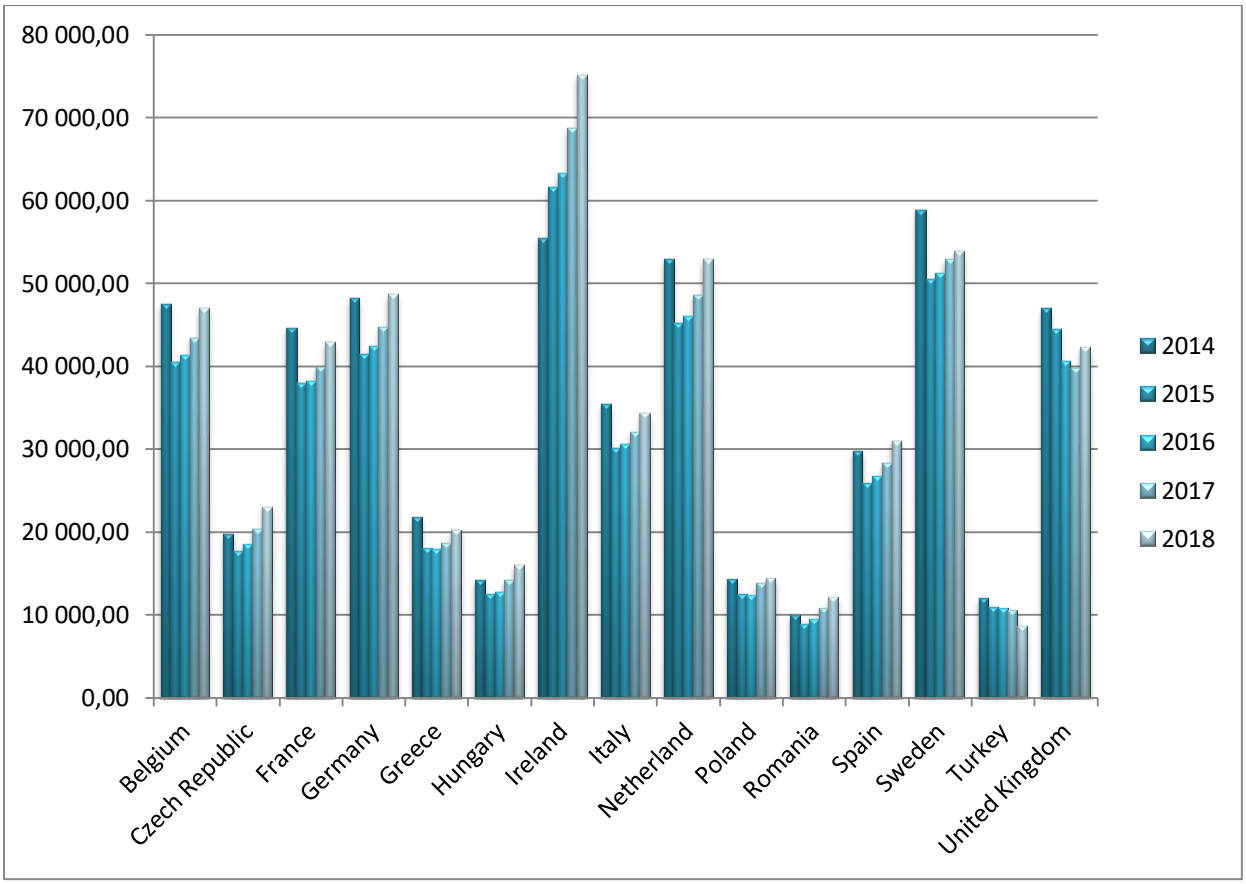
Europe is divided into about fifty sovereign states. There are 28 currencies across Europe, with the Euro being the most commonly used in 19 countries called the Euro area or Eurozone. The following survey contains seven countries and their financial indicators. Countries are followings:

- Belgium
- Czech Republic
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Netherland
- Poland
- Romania
- Spain
- Sweden
- Turkey
- United Kingdom

In Europe countries cashless transaction in Circulation has increased by an average of 29.5% in USD value across selected European countries in recent years (5.9% per

annum). One notable exception is Sweden, which reported a decline in the absolute value of cashless transaction in Circulation of 34.9% over the past five years. Of all countries included in this report, Sweden is the only country to show a consistent five-year annual decline in the value of currency in circulation. When looking at Currency in Circulation against GDP (all local currency) a similar picture emerges and other ratios are mostly between 5% and 10%, Hungary and Greece being the exceptions at the higher end, with 12% and 16%, respectively.

Graph 6: GDP in USD per Capita for countries in Europe



Source: International Monetary Fund, https://www.imf.org

Based on the indicators, we can't conclude that cash volumes are declining across Europe. It therefore continues to be an important payment instrument, even in a well-

developed market such as Europe. A recent study, carried out by the European Central Bank, underlines this conclusion.

Even in this modern age, cash remains important in our economy, "said ECB President Mario Draghi. "A study on cash use, conducted on behalf of the ECB, shows that more than three-quarters of all expenditures at points of sale in the eurozone are in cash. In terms of transaction values, that's slightly more than half.

Use of cash and cards varies by country, place of transaction, payment value and demographic factors of consumers. In terms of number of dealings, cash was most utilized in the southern euro area regions, as well as in Slovenia, Austria, and Germany where 80 percentage or more of POS trades were conducted with physical money. In Europe physical money was minimum used in Finland, Estonia, and the Netherlands where its share in amount of transactions reached from 45% to 54%. Cash is used primarily for low-value payments, while cards are being used for higher-value payouts. Cash was the choice tool for goods for less than € 45. These purchases represent 91 percent of all POS payouts.

Access to card payments does not seem to explain full divergences in the payment attitude, as connectivity to cards is strong on average in all European countries. Moreover, there seems to be a connection between card acceptability (i.e. the perceived accessibility of online payment terminals) and cash use In countries and industry sectors where card acceptability is still low, cash use can be expected to reduce once the card payment network becomes more generally available. As long as consumers cannot fully rely on being able to complete a purchase or transaction via electronic means, they will continue to carry cash.

The total number of electronic payments has increased significantly in Europe, with the EU28 reporting a total number of 126 billion transactions (up from 94.4 billion in 2012). Most products have shown double-digit growth

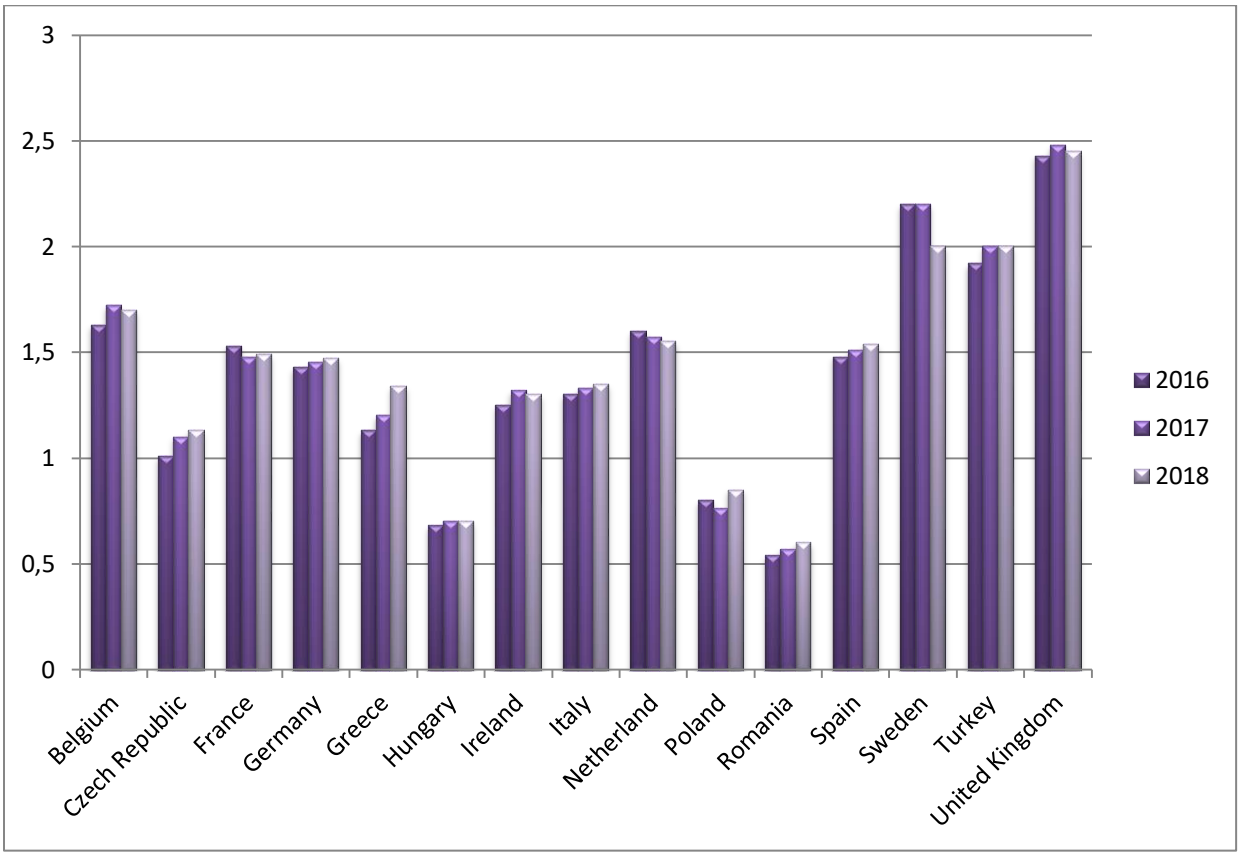
over the reported period, except for direct debits (+3.69%) and cheques (-29.24%). Credit Transfers increased by 13.24% to 29 billion transactions, debit cards by 48.6% to 54.8 billion, and credit cards by 67.6% to 4.8 billion. Since 2016, card transactions have accounted for more than 50% of all electronic payments in

Europe and have overtaken credit transfers and direct debits combined.

Strongest relative growth came from:

- eMoney: +87.6% to 2.8 billion – largely following growth in PayPal transactions located in and reported out of Luxembourg.
- Other payments services49: +177.6% to 1.2 billion.

Graph 7: Cards per Capita for countries in Europe



Source: Statistics on payment, clearing and settlement systems in the CPMI countries, December 2018.

Despite the importance of cash throughout Europe, electronic payment volumes and the underlying infrastructure are experiencing tremendous growth, as well. Cards per capita are growing in all countries except for France, the Netherlands and Sweden. For the Netherlands, this is largely due to a considerable drop in the number of credit cards. The vast majority of cards in the Netherlands are debit cards, and this total number has increased by 7% over the past five years. Cards per capita average 1.6 card per person in Europe, against a global average of 1.8.Only the UK, Turkey and Sweden averagedabove two cards per inhabitant in most recent numbers.

Throughout Europe, the average number of inhabitants (age 15 and above) who have access to a bank account has reached 84%, which is well above the global average of 60.7%. Within the Eurozone, the percentage rose to 94.8% in 2016.

The use of cash is developing at two different speeds across Europe. Certain countries are clearly reducing their use of cash in favor of non-cash (e.g. Sweden, the Netherlands, the UK). Others still or increasingly rely on cash, mostly in South-eastern Europe. As pointed out in the ECB report, it is expected that the adoption of contactless card payments will impact the use of cash, as it increases the speed at which the transaction is completed, significantly improving ease of use.

The further roll-out of electronic infrastructure, especially the number of accepting devices (POS terminals), will most likely also impact the use of cash, as more people can rely on being able to transact electronically. Other relevant developments in the electronic domain are the introduction of the 2nd Payment Services Directive (PSD2), which will allow licensed third parties to access consumers' bank accounts for informational purposes (Account Information Service Provider) or to initiate transactions initiation (Payment Initiation Service Provider). The 2nd Payment Services Directive came into force in January 2018. This is a relevant development, as it is

expected to have an impact on the retail payment experience and thus, at least potentially, on the use of cash.

The introduction/further roll-out of Instant Payments across Europe may very well impact the use of cash, especially if combined with mobile, peer-to-peer solutions and/or in combination with opportunities arising from the 2nd Payment Services Directive regulation. Instant Payment enables electronic payments to be carried out 24/7/365, with the recipient actually receiving – and able to re-use – the funds within seconds, thereby directly competing with cash on one of its unique attributes, direct settlement.

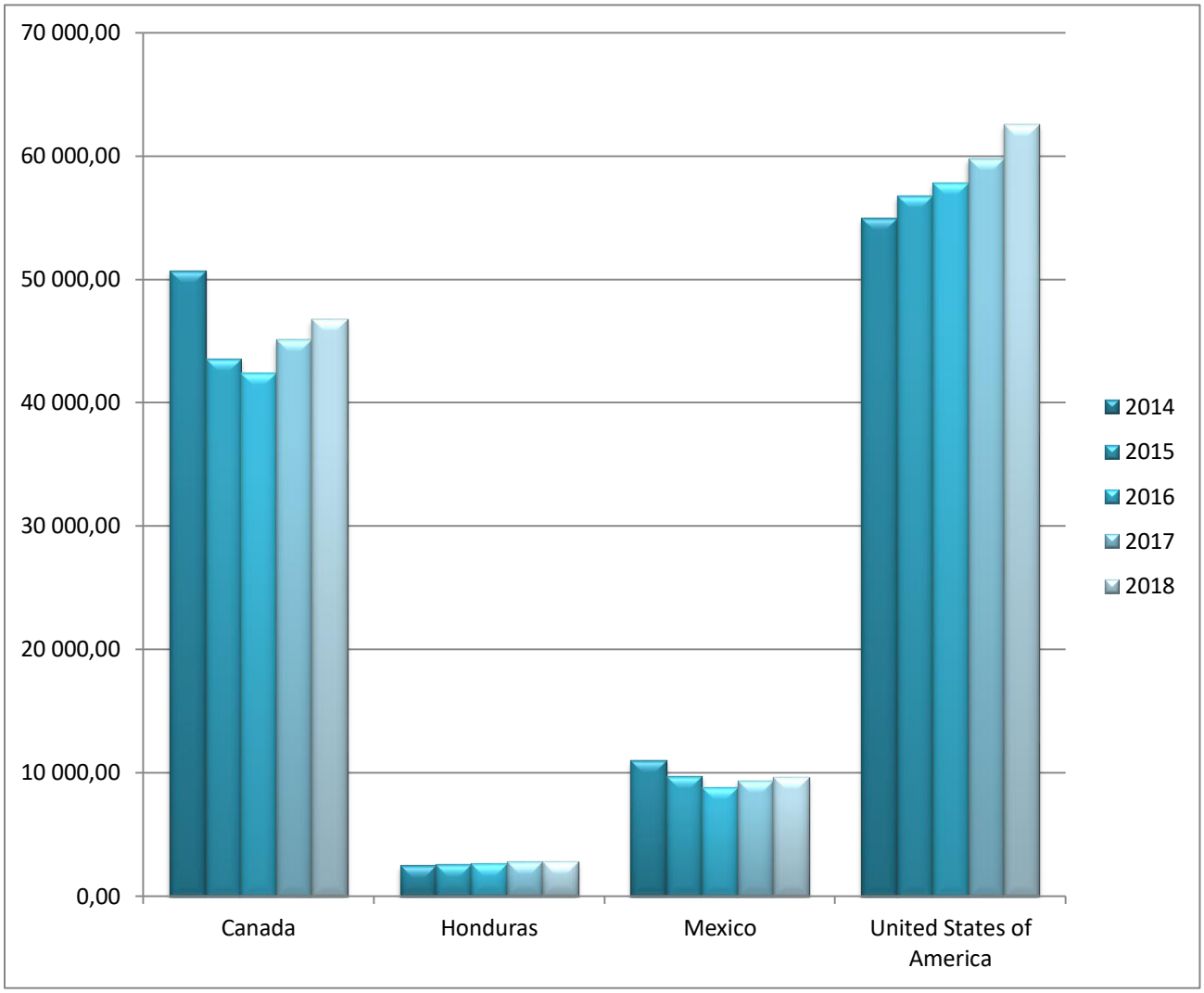
Sweden is regarded by many as the world's leading country in adopting electronic payments over cash. And for good reason, as both the statistics and a recent consumer survey show a declining use of cash in recent years.

2.2.4. Internal and external factors of cashless transactions in the North America.

There are 25 different currencies in official use throughout North America. The US Dollar is the most shared and the world's largest reserve currency. Countries included in this report are followings:

- Canada
- Honduras
- Mexico
- United States of America

Graph 8: GDP in USD per Capita for countries in North America



Source: International Monetary Fund, https://www.imf.org

The United States and Canada are the most prominent countries, and combined they represent 93% of total GDP. Honduras and Mexico are much lower, yet their cost-of-living index is also much lower. (https://www.payments.ca, 2016; http://www.riksbank.se, 2018)

North Americans still have a clear demand for cash, based on Currency in Circulation. Also, the value of ATM withdrawals is increasing. Growth percentages in the US are only marginally, yet consistently, positive. Direct demand for cash in Canada showed

growth for the first time in years in 2015 and since 2015 it is stable. Most U.S. consumers continue to carry cash, the average price of cash holdings has grown. Close to 83 of the diarists kept money by the end of at least one day of the Diary reporting period and 69 kept phisical money at the end of all three days. Consumers prefer to pay electronically with cash as primary backup For non-bill sales, 43 of the diarists quoted debit cards as their standard payment instrument. Credit cards and cash were approximately even at 27 and 26 percent, in both.

In line with the global trend, electronic payment volumes increased significantly in North America, as well. Growth in card volumes was particularly significant, with Mexico reporting 69.7% growth over the past 5 years, and US and Canada also reporting double-digit growth, with 33.3% (2013-2017) and 32.7% (2014-2018), respectively. Mexico's card volumes are still relatively low, which suggests there is even further room for growth in this domain.

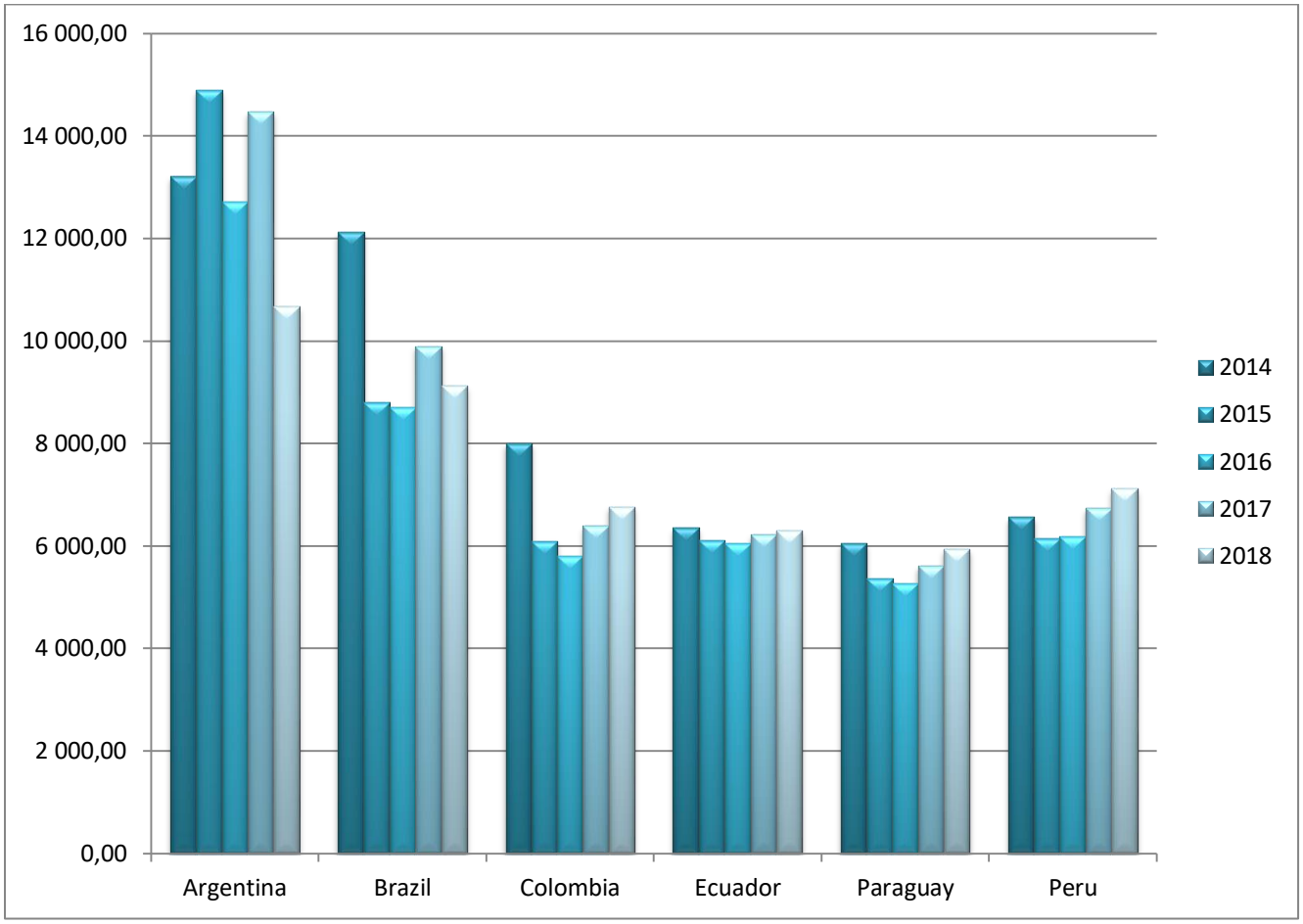
2.2.5. Internal and external factors of cashless transactions in the South America.

Each country in South America uses a different currency and most use their own sovereign currency. Ecuador (US dollar) and French Guiana (Euro) are the exceptions. Countries included in this report are:

- Argentina
- Brazil
- Colombia
- Ecuador
- Paraguay
- Peru

All countries reported double-digit growth of close to or well over 30% in the currency in circulation ratio, with Argentina reporting 150% growth over this period. In relation to each country's GDP, the growth is less significant, as most countries also report strong growth in GDP. However, the growth in the Currency in Circulation ratio versus GDP is positive for most countries.

Graph 9: GDP in USD per Capita for countries in South America



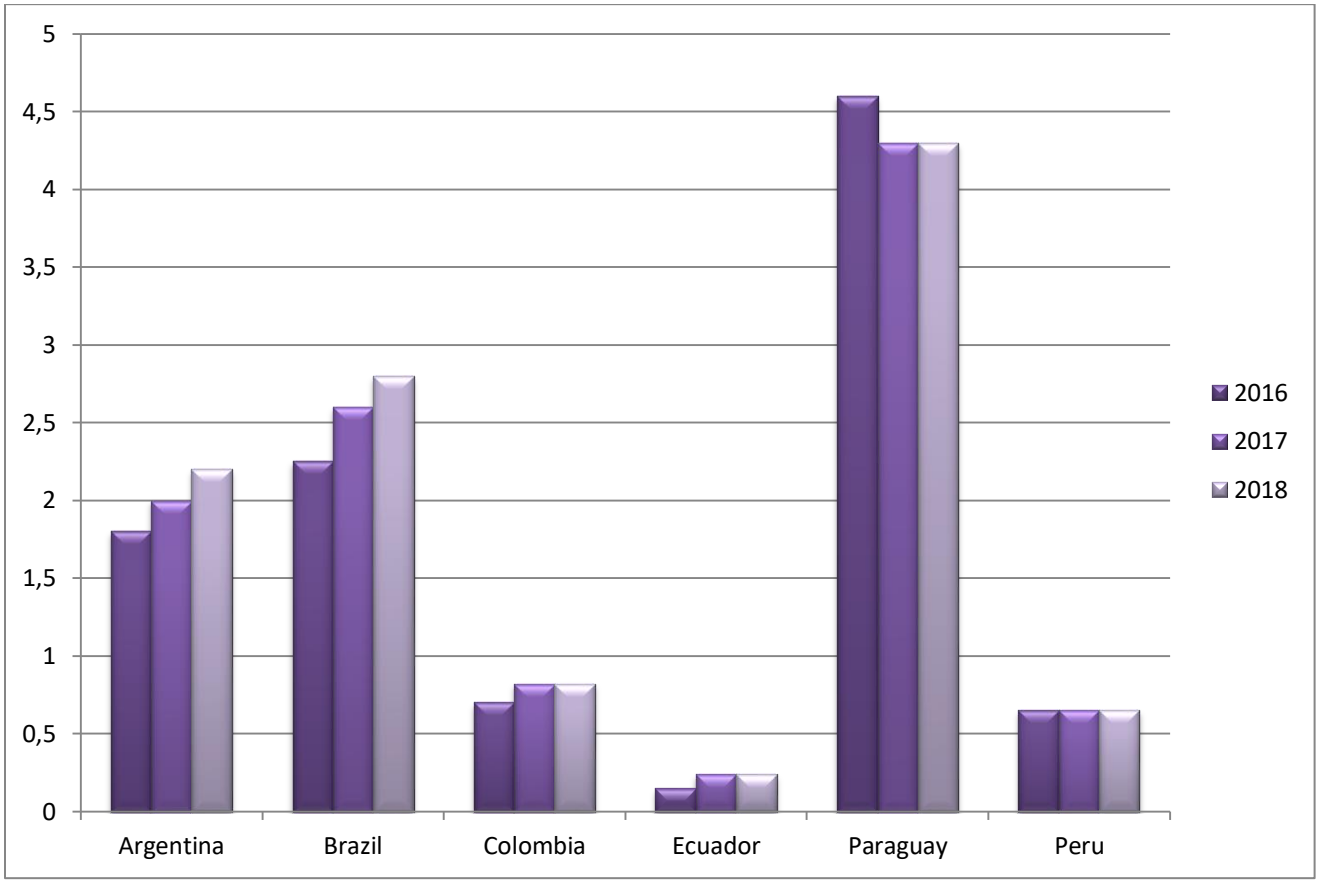
Source: International Monetary Fund, https://www.imf.org

The electronic payments infrastructure in South America shows significant differences between countries, but growth in all countries. The two countries contributing most to the continent's total GDP, Brazil and Argentina, report higher numbers when it comes to cards and POS terminals.

Looking at the number of cards available to South Americans Argentina (2.1) and Brazil (2.7) exceed the global average of 1.8 cards per inhabitant, bringing the continent's average to 1.5. Colombia and Peru both counted 0.7 cards per inhabitant in their last reporting year. All countries have shown consistent growth numbers, resulting

in an average growth percentage of +29% over the past 5 years. Especially in Argentina, the number of cards issued increased by +48%.

Graph 10: Cards per Capita for countries in South America



Source: Statistics on payment, clearing and settlement systems in the CPMI countries, December 2018.

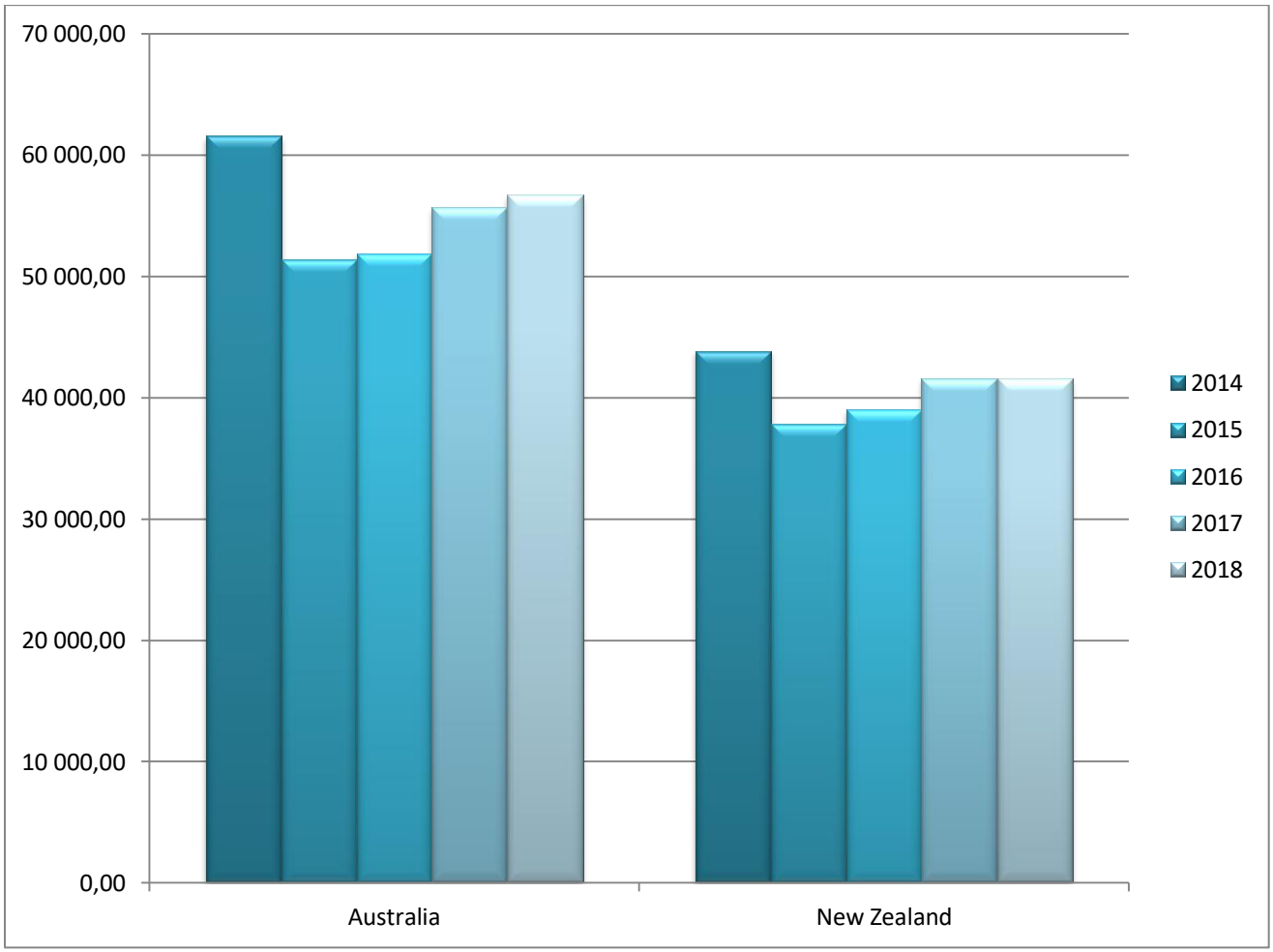
The card infrastructure is reasonably well developed in South America, with more than the global average of POS terminals per inhabitant and only slightly below the number of cards available to the public. However, that does not translate into frequent use of cards for transactional purposes, as all reporting countries remain below the global benchmark in annual card transactions per person. Financial inclusion, measured in the percentage of the population with a bank account, is improving but is still behind the global average. Social inclusion, measured by internet and mobile phone access, is

better developed, as the continent and most of the individual countries included here outperform the global benchmark.

2.2.6. Internal and external factors of cashless transactions in the Oceania.

Oceania is the world's smallest continent and encompasses all of Australia, New Zealand, Papua New Guinea. For the purpose of this report, I have selected the two countries with the highest GDP (in total and per capita) on the continent: Australia and New Zealand.

Graph 11: GDP in USD per Capita for countries in Oceania.



Source: International Monetary Fund, https://www.imf.org

The upward trend for both Australia and New Zealand is common for most economies across the globe, with only a few notable exceptions. Australia's currency-to-GDP ratio is currently broadly similar to that of the United Kingdom and Canada, but noticeably lower than equivalent ratios of economies in the major global reserve currencies, namely the United States, the Euro area and Japan. New Zealand's ratio is remarkably low, comparable to South Africa and Nigeria, which also have ratios of around 2%.

Alternatives to cash are already widely available throughout Oceania, and more and improved alternative payment methods are being developed. Payment cards and POS terminals available to the public show strong growth, in both Australia and New Zealand, and are among the highest in availability in the world. At the same time, other forms of electronic payments like credit transfer and direct debits have also shown positive growth, even though these payments are outperformed by cards in terms of transaction volume. Card payments represent 65.6% and 76.8% of all electronic payment transactions for Australia and New Zealand, respectively.

Electronic payment volumes are consistently increasing throughout Oceania, with the strongest growth in card transactions. With an average annual growth rate of 9.8% in recent years, the growth in electronic payments exceeds the growth in 'currency in circulation' in Australia. Moreover, looking at growth in card transactions, the difference is even more significant; the number of debit card transactions in Australia grew by 63.4% in total and 12.7% per annum.

Australia and New Zealand have very similar numbers of cards issued per capita. New Zealand has a combined total of 2.88 debit and credit cards per capita and Australia has 2.75 cards per capita.

Internet penetration, access to a bank account, mobile phone subscriptions, and electronic banking usage are all high in both Australia and New Zealand. This indicates that the region is very mature when it comes to digitalization and access to electronic

payments infrastructure. Even though some individuals continue to rely extensively on paper-based payment methods, this means that, overall, the continent's dependency on cash for social and financial inclusion is limited (Rochet, 2008). This is a clear indicator that the use of cash for transactional purposes is likely to decrease further, as more and more people become used to an increasing number of electronic alternatives and will use them more frequently in years to come.

CHAPTER 3: METHODOLOGY AND DATA

3.1. Methodology.

The model of the research used in the study is a cross- sectional data regression model. The dependent and independent variables are integral part of the regression model. I will put forward the following hypothesis:

H1.0: attitudes about the use of electronic money have a positive effect on the cashless society.

H1.0: attitudes about the use of electronic money have not a positive effect on the cashless society.

3.1.1. Dependent Variables of the Regression Model.

In order to measure cashless transactions GDP in USD per capita should be used as dependent variable.

3.1.2. Independent Variables of the Regression Model.

As a result of literature review carried out in the chapter 3, independent variables are access to the bank account, ATMs per 100.000 capita, bank branches per 100.000 capita, cards per capita, e- payment adoption, POS terminals per 100.000 capita. There will be use two types of variables in this study: explanatory variables and response variables. Give scope of this dissertation, access to the bank account, ATMs per 100.000 capita, bank branches per 100.000 capita are the explanatory variables and cards per capita, e- payment adoption, and POS terminals per 100.000 capita are response variables.

3.1.3. Model Estimation Process.

Though the Eviews software, the following regression models will be estimated:

$$\text{GDP per capita}_{i,n} = \alpha + \beta 1(\text{access to the bank account})_{i,n} + \beta 2(\text{ATMs})_{i,n+} \beta 3(\text{Bank branches})_{i,n} + \beta 4(\text{Cards per capita})_{i,n} + \beta 5(\text{E- payment adoption})_{i,n} + \beta 6(\text{POS terminals})_{i,n} + \varepsilon$$

(model 1- table 3)

Where,

α: constant

β 1-6 : coefficient of the regression model

ε: Error term.

3.2. Data.

Data features cross- sectional data. The secondary data source covers 2018 period and 47 countries from all continents in the world. Data of economic indicators were collect from the International Monetary Fund which are accessible though their official websites and statistical bulletin. Also e- payment adoption indicator data was collected from VISA and MasterCard reports. Other indicators were collected from statistics on payment from different sources.

3.2.1. Descriptive Statistical Analysis.

Below table present the descriptive statistics of the variables collected. (Appendix 2)

Table 3 shows the statistics of the variables included in the regression model. The average perceived GDP per capita is 21164 The average e- payment adoption rate of countries is 69.911 which means in the interval of 0-100 overall score. The average amount of POS terminal is 1634.9 which mean populations usually use online payment and payment instruction.

3.2.2. Correlation Analysis.

The correlation coefficient is an indicator of liner relationship among two variables. The value of the correlation coefficient range from -1.00 to +1.00. A correlation coefficient of -1.00 means there is negative linear relationship among two variables, while the correlation coefficient of +1.00 means positive linear relationship among two variables. A correlation coefficient of 0.00 means there is not a linear relationship among two variables. If the correlation coefficient ranges from 0.00 to 0.50, this means that there is a positive weak correlation between two variables and vise version. If correlation coefficient ranges from 0.90 to 1.00, it means that there is a positively perfect correlation between two variables. If the coefficient ranges from -1.00 to -0.90, there is a negatively perfect correlation.

In this study, the correlation analysis was made to display relationship between all variables and whether there is multicollinearity problem or not. (Appendix 3)

The table of correlation analysis, which was done in EVIEWS software, shows that all variables have positive correlation relationship. E-payment adoption and other three variables (GDP in USD per capita, Access to the bank account, and ATMs per 100.000 capita) has positive strong correlation.

3.3. Regression Analysis.

First and foremost, I will demonstrate our initial model. The regression model for GDP in USD per capita is estimate and introduced in Table 3. According to this table, most explanatory variables are statistically significant, which are: Access to the bank account, E- payment adoption, and POS terminals per 100.000 capita. Other independent variables are not significant. Coming back to significant variables, it should be noted that half of the variables are significant at the 5% significant level, which means that these variables explain GDP in USD per capita. (Appendix 4)

For testing a model on autocorrelation, the Durbin- Watson stat has been verified and the result showed that here is no problem of autocorrelation. The value of Durbin-Watson stat is very high: 2.46. Furthermore, from the P- Value of F- statistics, the whole model is statistically insignificant. The result of R- squared and Adjusted R-squared also look irrelevant and according to S.E. of regression our model is non-significant.

CONCLUSION.

I made a study among 47 countries across the world. Our world is not ready for cashless society now but some practices from some countries can be apply to the other world countries.

China's cashless society- Even though representatives of both companies are quick to acknowledge that a totally cashless China is unlikely soon, they are promoting the concept through "Cashless week" (first week of August, AliPay), "Cashless Day" (August 8th, WeChat Pay) and "Cashless Month" (August, WeChat Pay). Furthermore, recent research shows (among other key findings) that:

- Only 52% of Chinese use less than 20% cash for of their monthly expenses.
- 74% of people definite that they can live more than one month with only 100 RMB amount of cash.
- 84% people informed that they could take a totally cashless life.

As part of its 'Payment System Policy Roadmap - Vision 2020 and after public consultation, the Bank of Korea (BOK) started a project to decrease the circulation of coins and pursue a "Coinless Society". The key rationale behind the project is to ease the inconvenience of using and carrying coins and to reduce the social costs incurred in their circulation and management. The plan will be carried forward in a way that decreases the circulation of coins by effectively utilizing existing digital payment infrastructure. However, it does not aim to eliminate coins completely, the goal is instead a less-coin society.

In April 2017, a pilot program was started, and based on the results, the project will expand its service territory during 2018-2020 by both attracting more service providers and diversifying the mechanisms for returning change. Four companies were added to the pilot program in September 2017 alone. The four new firms include GS25, a store

chain in South Korea, and three other prepaid debit card operators. The project's existing partners include CU, a major South Korean convenience store chain, Seven Eleven, E-Mart, the country's biggest sales discounter, Lotte Mart, and Lotte Department Store.

By promoting the pilot program, the BOK will raise consumer awareness of its benefits, thereby encouraging them to ask their change value to be deposited to prepaid cards instead of physical coins. In parallel, a business environment will be pursued in collaboration with relevant industries so as to create an incentive for them to develop and provide new types of services for returning change to consumers electronically (such as direct deposit of change to consumers' bank accounts or accrual their mobile or reward points etc.).

Swedish would be the world's first cashless society. What are the main drivers behind Sweden's current position when it comes to the use of cash? First of all Sweden has very low population density. This negatively affects the cost of cash distribution across the vast country and drives the push towards more cost-effective electronic payments. Secondly, the number of (larger) banks is limited, facilitating cooperation between banks. For instance: Swedish banks are cooperating in the joint single ATM network, Bankomat AB, which operates all of the 2,850 remaining ATMs in the country. Other examples are Bankgirot (a central clearinghouse for electronic payment processing) and the newly launched real-time electronic payments methodology, Swish. Thirdly, Swedes are inquisitive and technology friendly by nature. Recently introduced "innovations" are Klarna, which supplies eCommerce payment solutions, and iZettle, which has developed a small card-reader that can easily be connected to a mobile phone. iZettle is even being used by homeless people to accept payment for the magazine Situation Stockholm. A fourth factor may be the high level of trust the Swedes historically have in the government and the financial sector. This trust has been

‘earned’ by the Swedish government and the financial sector by their performance and stability over a long period of time. Intertwined with and perhaps following on from the previous point, Swedes have historically been rather trusting and transparent when it comes to sharing personal information between population and government. Privacy issues are less of a concern, given the established relationship of trust. Consequently, Swedes place less value on the uniquely anonymous character of cash, and subsequently seem to have less difficulty abandoning cash for less anonymous non-cash alternatives.

What can other countries learn from Sweden? Some key elements of Sweden’s leading position are difficult to copy. Geographical factors, such as population density, are obviously different for each country and are hard to influence. To a certain extent, the same goes for the third point: a population’s interest in and willingness to adopt new technologies and innovations. However, the level of cooperation within a country’s financial sector is something that can be influenced. Even if the number of larger players in a country is higher than in Sweden, cooperation may be more complex, but not impossible. Participants just need to be willing to forego short-term individual gain for longer-term collective gain. This obviously requires trust. In turn, the population will reciprocate this trust over time when collaboration within the financial sector starts to pay off for the community at large, positively affecting factors.

In its purest form (no cash at all), the cashless society seems a far off, if not purely theoretical, future. Even Sweden, the country with the lowest dependency on cash in the world, acknowledges that that are many reasons to maintain (a certain amount of) cash and many obstacles to fully getting rid of or replacing cash. An of heard alternative is a “less-cash society”, which is a reality in an increasing number of countries, even though in many countries, as we’ve seen, cash usage is still rising. However, a less-cash society is oftentimes the objective of many policy-makers and stakeholders, especially from central governments and the banking community.

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APPENDİX 1.

Table 2. Payment survey around the world

Country	Continent	% Cash	Source
South Korea	Asia	14%	BOK study
Finland	Europe	54%	ECB Diary Study
Estonia	Europe	48%	ECB Diary Study
Latvia	Europe	71%	ECB Diary Study
Lithuania	Europe	75%	ECB Diary Study
Slovakia	Europe	78%	ECB Diary Study
Austria	Europe	85%	ECB Diary Study
Slovenia	Europe	80%	ECB Diary Study
Greece	Europe	88%	ECB Diary Study
Cyprus	Europe	88%	ECB Diary Study
Malta	Europe	92%	ECB Diary Study
Italy	Europe	86%	ECB Diary Study
Germany	Europe	80%	ECB Diary Study
The Netherlands	Europe	45%	ECB Diary Study
Belgium	Europe	63%	ECB Diary Study

Luxembourg	Europe	64%	ECB Diary Study
France	Europe	68%	ECB Diary Study
Spain	Europe	87%	ECB Diary Study
Portugal	Europe	81%	ECB Diary Study
Ireland	Europe	79%	ECB Diary Study
Sweden	Europe	20%	ECB Diary Study
United Kingdom	Europe	42%	Payments UK Diary Study
Australia	Oceania	37%	RBA Diary Study
United States of America	North America	32%	FedResSys Diary Study

Source: European Central Bank, https://www.ecb.europa.eu, Bank of Korea, Presentation CBPC, June 2017, Payments UK, Diary study, 2017, RBA Bulletin, The Future of Cash, https://www.rba.gov.au, Federal Reserve Board, https://www.federalreserve.gov/

APPENDIX 2.

Table 3. Descriptive Statistics

Variables	Observation	Mean	Std. Dev.	Min.	Max.
GDP in USD per capita	47	21164	19318	426	69331
Access to the bank account (% of population> 15)	47	0.6809	0.2606	0.14	1
ATMs per 100.000 capita	47	61.394	48.835	0.1	230
Bank branches per 100.000 capita	47	23.76	18.763	0.8	78
Cards per capita	47	1.5106	1.266	0.06	5.1
E- payment adoption	47	69.911	14.836	22	89.4
POS terminals per 100.000 capita	47	1724.4	1634.9	15	6800

Source: Calculation of author.

Appendix 3.

Table 4. Correlation Analysis of all variables.

	GDP in USD per capita	Access to the bank account (% of population> 15)	ATMs per 100.000 capita	Bank branches per 100.000 capita	Cards per capita	E- payment adoption	POS terminals per 100.000 capita
GDP in USD per capita	1						
Access to the bank account (% of population> 15)	0.780336	1					
ATMs per 100.000 capita	0.551064	0.663149	1				
Bank branches per 100.000 capita	0.323909	0.41439	0.521404	1			
Cards per capita	0.47827	0.461419	0.66242	0.281236	1		
E- payment adoption	0.696164	0.760665	0.633143	0.480663	0.546409	1	
POS terminals per 100.000 capita	0.56329	0.448761	0.431951	0.27278	0.679444	0.521216	1

Source: Calculation of author.

Appendix 4

Table 5. Regression Analysis.

Variable	Coefficient	t-Statistic	Prob.
Access to the bank account (% of population> 15)	46086.35	3.855957	0.0004
ATMs per 100.000 capita	40.81256	0.626694	0.5343
Bank branches per 100.000 capita	-33.79669	-0.277915	0.7825
Cards per capita	-641.2252	-0.256415	0.7989
E- payment adoption	-239.51	-2.076695	0.0441
POS terminals per 100.000 capita	3.85117	2.377049	0.0222
R-squared			0.62
Adjusted R-squared			0.57
S.E. of regression			12682.61
Sum squared resid			6590000000.00
Log likelihood			-507.54
Durbin-Watson stat			2.46

Mean dependent var	21164.00
S.D. dependent var	19317.52
Akaike info criterion	21.85
Schwarz criterion	22.09
Hannan-Quinn criter.	21.94

Source: Calculation of author.

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