INTERNATIONAL
HELLENIC
UNIVERSITY

Digital Payments

Tzanetou Anthi

SID: 33011500087

SCHOOL OF SCIENCE & TECHNOLOGY

A thesis submitted for the degree of

Master of Science (MSc) in Information and Communication Systems

DECEMBER 2017

THESSALONIKI – GREECE

INTERNATIONAL
HELLENIC
UNIVERSITY

Digital Payments

Tzanetou Anthi

SID: 33011500087

Supervisor: Prof. George Doukidis

SCHOOL OF SCIENCE & TECHNOLOGY

A thesis submitted for the degree of

Master of Science (MSc) in Information and Communication Systems

DECEMBER 2017

THESSALONIKI – GREECE

Abstract

This dissertation was written as a part of the MSc in ICT Systems at the International Hellenic University. Prior research has shown that the worldwide proliferation of digital payments has been increasing steadily over the last few years.

This thesis focuses in the case of Greece and the purpose is to:

- examine the degree of acceptance of digital payments by citizens/individuals (in comparison with the past),
- analyze the extent to which digital payment systems are used by professionals,
- investigate the perspective of citizens and businesses for the substantial changes in legislation and examine possible concerns that raised after the implementation of the new measures,
- find and present some alternative measures/incentives that could be applied to strengthen the use of digital payment systems.

In order to achieve the goals of the project, quantitative research was conducted, with the use of questionnaires. Two questionnaires were prepared, the first one was answered by 155 individuals and the second one by 102 businesses. After the answers' processing, some useful conclusions were drawn, concerning both businesses and individual consumers, which are presented in detail in this thesis.

Acknowledgements

I would like to express my deepest gratitude to my supervisor, Dr. G.Doukidis. His valuable advice and our frequent communication along the research project helped me develop my thesis efficiently and face the problems raised during the dissertation process. His patience and willingness to help me were impressive.

I would also like to thank my friends, who helped me to forward the questionnaires, and the anonymous participants for their valuable feedback. Without their participation and input, the research could not have been successfully conducted.

Finally, I must express my very profound gratitude to my parents, my elder brother, Lazaros and to my fiancé, John, for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you.

Tzanetou Anthi

18/12/2017

Contents

1 Introduction

Due to the continuous evolution and development of technology, we can identify the fact that we move into a digital environment over the years, where all of our activities and transactions are being executed electronically. This digital conversion also occurs in the field of payments both in Greece and internationally. Nowadays, new technologies have been established, which allow consumers to conduct any payment transaction through mobile devices, plastic cards, etc., enabling them to benefit from relevant reward programs in a sense of absolute security. The goal of digital payments is to optimize the transaction process and provide a range of benefits to all parts that are involved (citizens, businesses, financial organizations and governments). As digital payments solutions have become more sophisticated, so too have the expectations of customers. In order to use a system, they want to be provided with ease, multiple possibilities and attractive incentives.

The purpose of this dissertation thesis is to analyze the most important technologies and practices of electronic payments (such as plastic money, e-banking, etc.), highlighting the importance of using digital payment systems not only at a business and consumer level, but also in terms of national economy. Moreover, additional digital services, which are necessary for the integrated management of digital transactions, are being presented (such as e-invoicing). At the same time, the degree of acceptance of digital payment systems is examined, both in terms of citizens and businesses. The research is focused on the country of Greece. Moreover, as plastic money is a vital issue in the country of Greece and its use has grown considerably lately due to the country's economic and political conditions, the research focuses also to the use of plastic money and POS payment systems.

This thesis begins with several chapters on the current state-of-the-art in digital payments. More specifically, in the first part, some elements regarding the use and application of digital payments internationally are presented in detail in order to be able to recognize the range of the electronically available transactions. The use of digital payment

transactions globally is growing exponentially and in some countries, the use of cash money tends to be completely eliminated.

This fact is not true, though, in the case of Greece where, despite the increase of digital payments that we have seen as a result of capital controls and recent tax-free laws, this country is still far from the European average related with the use of digital transactions. The general situation in Greece is examined in the second part of this dissertation thesis, where the degree of use of digital payments is discussed and the relevant legal and regulatory framework is presented. The discussion of the above parts provides the background necessary for an understanding of the quantitative results of the following chapters.

The basic research approach is presented in the third chapter, where the main stages and objectives of the research are analyzed. The project research work is divided in two parts. The first part deals with the way individuals – consumers interact with digital payment systems and the second part includes the corresponding analysis for businesses and professionals.

More specifically, the third chapter of this thesis presents the process of conducting a quantitative research on consumers located in Greece. It offers an analysis of the results of how widely citizens use digital payment services, for what purposes, in which way and what are the incentives that would lead them to eliminate the use of cash. The research was carried out using questionnaires and was more focused on plastic money/ plastic cards.

In the fourth chapter of the thesis, the quantitative results of another research are analyzed. This part of the research deals with the use of digital payment systems and especially of plastic money by businesses and professionals in the Greek market. The purpose of this research is to identify the degree of use of digital payment systems by professionals/businesses in their transactions with consumers/individuals. Having the perspective of the professionals (through questionnaires), it is possible to examine the difficulties they have to face when they use digital payment solutions and in this way, indicate possible incentives that could lead to an increased use of digital payment systems by the businesses.

Last but not least, the final part of the thesis contains a summary of the important conclusions and observations that were made through the research. A discussion about the

results is absolutely useful in order to have the full picture of the current state-of-the-art in digital payments in Greece.

It is a fact that digital payments and their proper use and application can be used as an important public administration tool giving the opportunity to handle black economy, tax evasion and corruption. Through this dissertation thesis, some basic digital payment transactions are presented, the impact that these transactions have is analyzed and the degree of acceptance they have both by individuals and businesses is examined.

2 Literature Review

As a result of the worldwide proliferation of the Internet, e- commerce emerged and evolved rapidly during the past decades. Businesses try to find new ways for conducting their operations and many of their financial needs cannot be fulfilled by the use of the traditional payment systems. That gave birth to the digital payment systems in which population and businesses seem to be willing to engage.

2.1 Definition of Digital Payments

Although the term of electronic payment was known since 1960s[1], the use of the respective payment systems showed a great bloom in the last decades, that great technological developments took place and the population got familiar with them in general. Digital payments have changed a lot since their first appearance in order to meet the needs of both consumers and businesses. It is logical that these changes affect also the definition of digital payments, which is evolving in accordance with the way the transaction is executed.

In a general definition, the concept of digital payments includes payments that are made through digital modes and are executed through telecommunications or electronic networks, using modern technology. By the term "payment", any payment to businesses, bank or public services from citizens or businesses is included. All of the transactions in digital payments are completed from distance, without the physical presence of the payer. Both payer and payee use digital modes to send and receive money and no hard cash is involved in the procedure.

In order to be able to support the concept of digital payments, many technological systems/ instruments have been created, some of which are presented in the following chapters. A digital payment system can be assessed along the following five dimensions: the technological aspect, the economic aspect, the social aspect, the institutional aspect, and the regulatory aspect [1]. When a system covers successfully the above di-

[1] 1960: Execution of the first mass mailing of credit cards- BankAmerica, Fresno, California;
1967: Installation of the first Automated Teller Machine (ATM)- Westminister Bank, Victoria, London

mensions, it can be used not only to offer speed and simplicity, but also as an important public administration tool giving the opportunity to handle black economy, tax evasion and corruption.

2.2 The State of Digital Payments Internationally

The global payments landscape is evolving rapidly. The digital and technology revolution along with the increased use of smartphones and internet on mobile, have led to the extensive use and exploitation of digital payments. This causes also several changes in the regulatory framework. Customers are becoming more and more demanding and expect solutions that offer efficiency, speed and security.

2.2.1 Current Types of Digital Payment Systems

The evolution of e- commerce, the extended use of technology from the final receiver and also the increased interest on internet shopping has led to the extended popularity of digital payment systems. The range of devices and processes used to transact electronically continues to increase while the use of cash and check transactions is decreasing. Some of the digital payment systems simply "translate" the existing payment systems into an electronic world, such as credit cards and cheques, while, others introduce new concepts in finance, such as digital currency technology, with the potential of contributing to great change in the monetary system.

In the following sections, some of the basic and most popular digital payment systems will be presented in order to be able to identify the range of the available digital payments' options.

Banking Cards – Point of Sales

Banking cards and "plastic money" are the most popular form of digital payments nowadays as they can be used almost anywhere, for almost any kind of purchase and they help us to avoid to have cash on hand. They are made of plastic and they have a magnetic stripe on them. When a customer visits a shop and wants to fulfill a purchase, he/she gives the card to the merchant, the second swipes the card through a PoS terminal or fills in the relevant information into a database. This information is delivered to the corresponding Bank, who relays a confirmation message back to the merchant that the purchase was completed successfully. The whole process typically takes only a few seconds to complete. There are three types of cards in general: Credit, Debit and Prepaid

cards. Every type of card is accompanied with different operations and processes according to the customer's needs. Due to the advancements in technology, the number of PoS terminals has grown significantly in recent years. The main categories of the PoS systems are: the physical PoS, the mobile PoS (mPoS) and the virtual PoS (vPoS).

USSD Banking /Payment

The USSD[2] banking or USSD Payment is an opportunity for those who do not have any smartphone as it has to do with any mobile phone on GSM network. The USSD technology can be used as a tool in mobile banking and can be used to handle some basic transactions such as fund transfer, mini statement generation and account balance checking. The connection with the telecom operator's server is accomplished with the use of a USSD and the connection to the server of the respective bank is achieved through the servers of telecom companies. Through the USSD code, the system gives access to the respective bank account and allows some basic transactions.

UPI

UPI[3] is a payment system launched by National Payments Corporation of India and regulated by the Reserve Bank of India which facilitates the instant fund transfer between two bank accounts on the mobile platform [2]. This system is built over IMPS[4] for transferring funds using a range of relevant identification numbers to confirm each payment. We could say that the UPI system is a subcategory of the USSD systems as it offers basically the same service but only for those individuals who use smartphones.

AEPS

AEPS[5] is a new payment service offered by the National Payments Corporation of India to banks, financial institutions using Aadhaar number[6] and online UIDAI[7] authentication through their respective Business correspondent service centers [3]. With the help of this system, a customer may conduct any purchase only with the use of the Aadhaar number. The only procedure that is needed is the connection of the Aadhaar number with the respective bank account. Unlike cards and USSD, AEPS does not have any charges on transactions [4]. It can be used with the help of PoS machines. No signa-

[2] Unstructured Supplementary Service Data
[3] Unified Payments Interface
[4] Immediate Payment Service
[5] Aadhaar Enabled Payment Service
[6] Aadhaar is a 12digit unique- identity number issued to all Indian residents based on their biometric and demographic data
[7] Unique Identification Authority of India

ture, bank account details or any password is required. Fingerprint is used as password as it is identified to be the most secure digital payment mode. The basic transactions that AEPS supports are cash withdrawal, cash deposit and money transfer to another Aadhar linked account.

Digital Wallets

The digital wallet is an electronic device that allows an individual to make digital transactions. These transactions may include the on-line shopping with the use of a personal computer or the shopping with the use of a smartphone device. Many important documents can be stored on the smarphone (such as the health card, driver's licence) and the most important is that the wallet can be linked with the bank account in order to be able to execute many transactions. In a purchase procedure, all of the information needed, together with the credentials can be passed to a merchant's terminal wirelessly via near field communication (NFC). There are plenty of examples of the electronic wallets such as QIWI, Webmoney, Perfect Money, Paypal, Okpay etc.

Mobile Payments

Mobile phone manufacturers have enabled their devices' software to allow users to access electronic commerce and conduct digital payments. In some countries, mobile service providers allow their customers to have a bank account on their cell phone numbers and can use the funds in their accounts to carry out transactions. Although the number of possible transactions is limited, they still can be used to facilitate some electronic transactions.

Wearables

At first, the wearables were intended to be used for checking the notifications of our smartphone, for tracking our fitness status etc. But as wearable technology becomes more popular, payment companies are trying to take advantage of this popularity and become more competitive. The result of this is that many wearable products are gaining payments functionality. From wristbands, fitness trackers and watches to jewellery and clothing, the potential of wearables technology is promising. According to ABI Research [5], global wearable device shipments are set to hit more than 500 million by 2021. Furthermore, analysts estimate that 20% of these devices will be 'connected' with a payment, transport or access control application [6].

Payment with Digital Currencies (Case of Bitcoins)

Bitcoin is a digital currency created in 2009 and it can be used as secure money for the internet as payment is feasible without the need of sharing sensitive financial information. There are no physical bitcoins and they are not issued by any banks or governments. The payment procedure takes into account only balances, kept on a public ledger in the cloud, that are verified by a massive amount of computing power. Bitcoin offers the promise of lower transaction fees than traditional online payments and is operated by a decentralized authority, unlike government-issued currencies. Bitcoin exchanges are available all over the world and allow users to convert any currency into and out of bitcoin. Digital payment with bitcoins charts high on popularity nowadays, a fact that leads to the conclusion that a digital era in payments arises. By the use of bitcoin and other transaction systems money changes its position. It becomes "money without government" and "money without borders". Users can send their money to anywhere in the world just like sending an email. In case of crises and money control, electronic payment system is becoming much more popular. Commonly people started to use Bitcoin in this way [7]. During the spring of 2013, when the Cypriot banking crisis hit the money markets, a fear of capital controls surrounded the Southern Europe and the bitcoin price rose from about $15 to north of $200. In the third quarter of 2013, the price started to rise again, increased from about $130 to over $1,000 due to Chinese interest. The reason of this increase was materialized due to the speculative attacks and money but a part of the increase occurred due to money fleeing [8].

2.2.2 Additional Digital Services

Apart from digital payments, however, some other digital transactions that are complementary to digital payments are equally important. The two most basic digital transactions could be said to be electronic banking and electronic invoicing and they are analyzed in the following sections.

Electronic Invoicing

Traditionally, the procedure that has to do with the invoices' issue is a heavily paper-based process and is prone to human error resulting in increased costs and processing lifecycles for companies. There is a solution to this problem, called electronic invoicing, where the exchange of the invoices is implemented electronically in an integrated electronic format. Electronic invoicing is used by trading partners to present and monitor transactional documents between one another and ensure the terms of their trading

agreements are being met. These documents include invoices, purchase orders, payment terms and instructions etc. With the help of e-invoices, many processes can be automated, mistakes can be eliminated, cost and time will be saved, the business will enhance its "green" identity and last but not least, the level of integration between the trading partners will be increased. Most of the businesses assign the implementation and the support of the e-invoicing processes to a third- party organization, but there are also some companies that prefer to have their own in-house mechanism.

An e-invoice can be defined as structured invoice data issued in Electronic Data Interchange (EDI) or XML formats, possibly using Internet-based web forms [9]. These documents can be exchanged in a number of ways including EDI, XML, or CSV files. They can be uploaded using emails, virtual printers, web applications, or FTP sites.

Electronic Banking

The term "Electronic Banking" refers to a digital payment system that enables customers of a financial institution to conduct a range of financial transactions through the financial institution's website or mobile application. E- banking tends to become a "traditional" and conventional everyday procedure because of its ease and immediacy. There is a range of available transactions that can be fulfilled through the use of e- banking. The types of those transactions are determined by the financial institution. Most of the banks give the opportunity to the customer to obtain account balances, to have a list of the recent transactions, to transfer funds to an other account and to complete electronic bill payments. In some cases, the e-banking system may also enable the customer to order a cheque book, report loss of credit/debit cards, etc.

The use of the e- banking services can bring significant benefits both for banks and customers, some of which are the following:

- Cost reduction
- Time saving
- Permanent access to the financial institution via mobile phone or personal computer, no matter what day or time it is
- Ability to transfer the money immediately, accurately and with high security

E-banking has become very popular nowadays and due to the multiple benefits that it offers we can see that many banks globally are internet- only institutions in order to have lower operating costs. For example, in the United States, many virtual banks are

insured by the Federal Deposit Insurance Corporation (FDIC) and can offer the same level of protection for the customers' funds as traditional banks [10].

2.2.3 Acceptance and Usage of Digital Payments

It is a fact that digital payments play a growing role in the transactions nowadays, and, in many cases of countries, they almost have replaced traditional payment instruments (such as cash). Especially in the last two years we can observe some major changes that lead us to the conclusion that we are moving into an era of digitization.

First of all, the dominant factor that affects the use of digital payment systems is the available technology. Over the last few years there has been a particular development in this area, with technology achievements increasingly simplifying everyday processes and with the use of devices that citizens already use in their everyday life and are already familiar with, such as mobile phones, smartwatches etc. It is observed that different countries prefer the different forms of electronic payment system. In any case, digital payments are spreading globally, giving new opportunities to the market and leaving room for new entrants offering payment services and solutions.

Until now, the only players involved in digital payments were the banks. We can see now also the following players that show also an extended activity:

- Telecom Companies – Vodafone, Orange
- Device Manufacturers – Apple, Samsung
- Tech Companies – Google, eBay, Alibaba
- Retailers – Starbucks, Walmart
- StartUps – Square, TransferWise

More disruption is expected as the number of FinTech startups has doubled to 1,000 in approximately 5 years with funding growing 6X to reach USD 11 billion in 2015. [11]

Moreover, due to the entrance of multiple players in the market, customers have more and more demands for their available services. The consumer of today, and even more so, tomorrow, expects the best experience that companies can deliver, even in financial services. There is a growing need for an intuitive and frictionless user interface and design as provided already by players, along with the optimum use of smartphones and apps to deliver on evolving customer needs, both enhancing and increasing customer interactions and building relationships. [11]

Digital payments have gained notable growth and popularity which has led to attracting attention from variety of researchers and consulting companies globally. As more and more transactions are executed digitally nowadays, the impact that the current systems have on the market becomes an important concern.

In the following sections, more information is presented, for some of the digital payment systems that tend to be established as everyday payment instruments.

Plastic Money – Cards

Nowadays, the market in many countries is being driven by the extended usage of debit/credit cards for in-store purchases and the elimination of cash money. According to a survey conducted by Euromonitor International in 2016, plastic money payments exceeded cash payments worldwide for the first time in 2016, recording $ 23.1 trillion (from $ 21.4 trillion) in consumer spending - plastic money, compared to $ 22.6 trillion dollars (from $ 21.8 trillion) - cash [12]. In a relevant press release, Kendrick Sands[8] said that "This stagnant growth of cash payments signals a shift and is a major victory for card and electronic payments". The same survey shows that the number of debit cards in circulation was increased by 8,1% and credit card circulation was also rose, 5,3%.

"With more consumers gaining access to financial products and services, total debit cards in circulation are expected to register a 7.4 percent global CAGR growth from 2016-2021," Sands said. "*Overall, continued strong momentum is expected in the conversion of consumer payments away from paper to card and electronic alternatives."*

Apart from the convenience of in-store purchases, also the growing trend of consumers for online shopping strengthens the use of plastic money. The use of the card offers ease while giving the user the ability to control his/ her transactions and record his/ her moves.

Mobile payments

It is a fact that more and more people own a smartphone and use this device to access the internet. Internet traffic and smartphone's purchases are now two similar sizes that increase or decrease together. The number of users accessing internet services on mobile is expected to reach 3 billion by 2020, covering 65 percent of the world's adult population as compared to approximately 1.9 billion in 2015 [11]. By then, it is ex-

[8] Senior consumer finance analyst at Euromonitor International

pected that about 80 percent of all internet users will be accessing the internet through mobile handsets and 58 percent of such users will be using smartphones [11]. Today, smartphone devices are equipped with powerful processors, barcode scanning, GPS geocoding, NFC- based technologies and they represent a very important tool for digital payment services.

Even so, the use of mobile payments at the point of sale, which represents a significant portion of retail transaction volumes, is limited. A very small percentage of consumers pay in store with their phones, like last year [13]. The reason why they do not prefer their phones to execute their payments is simple. Cash and plastic cards meet their needs. Moreover, in many cases, although a customer may want to pay by smartphone, he/ she cannot as the merchants do not invest in modern card readers.

However, technology is not the only factor that affects mobile payment services. Porter's [14] competitive factors strategy model, or the five forces model, describes both the key role of a mobile payment service provider, and other market factors. The model applies insights from industrial organization theory to analyze the competitive environment on the level of business units [15], and relates the average profitability of the participants in an industry to competitive forces [16]. The following figure represents the Framework of factors impacting the mobile payment services market.

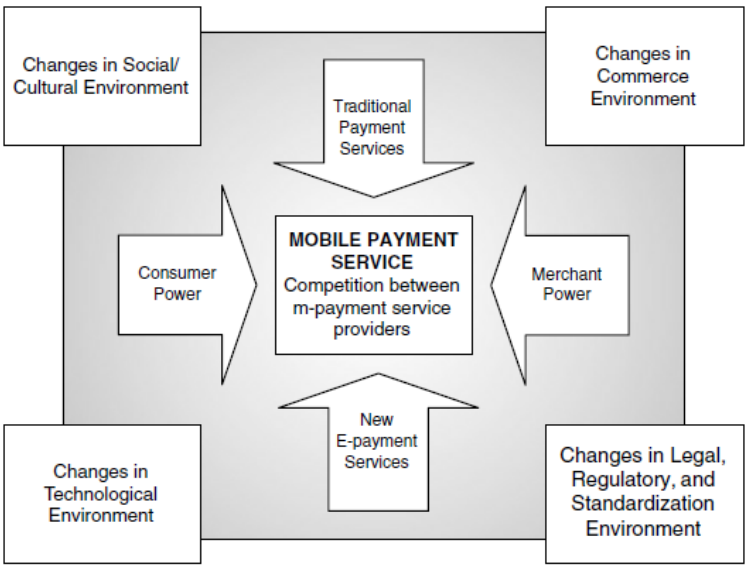


Fig. 1: Framework of factors impacting the mobile payment services market [17]

Contactless/ NFC

Card based contactless payments have grown significantly in recent years. More and more people are getting familiar with these systems, trust their use and benefit from their advantages. According to research that was conducted by Swedish research firm Berg Insight, more than 70 percent of the world's POS terminals will be NFC-ready in 2019, up from 28 percent in 2014 [18].

Contactless cards seem to be convenient for both customers and merchants who appreciate the speed of the system. Especially in cases such as mass transit and fast food, it is required that people move very quickly through the payment experience.

According to a survey conducted at the end of 2016 by "Payments, cards and mobile" in cooperation with Accourt's payment specialists and with the sponsorship of American Express, the payment industry stakeholders from the three major payment markets in the world (America, Europe and Asia Pacific) reported that critical mass adoption, issue and usage is more likely to occur in the 2016 to 2018 timeline. The following charts show the analysis per market.

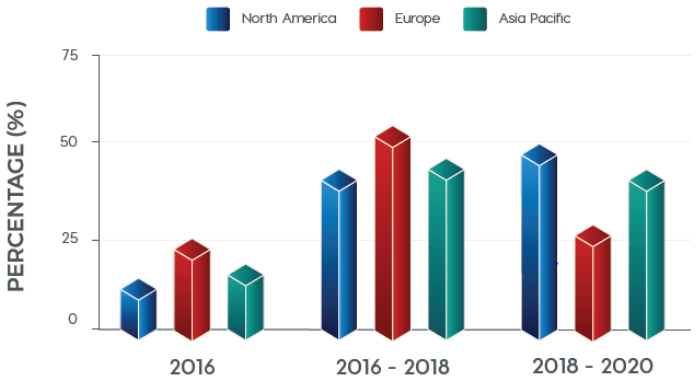


Fig. 2: Critical mass in acceptance of Contactless/ NFC [18]

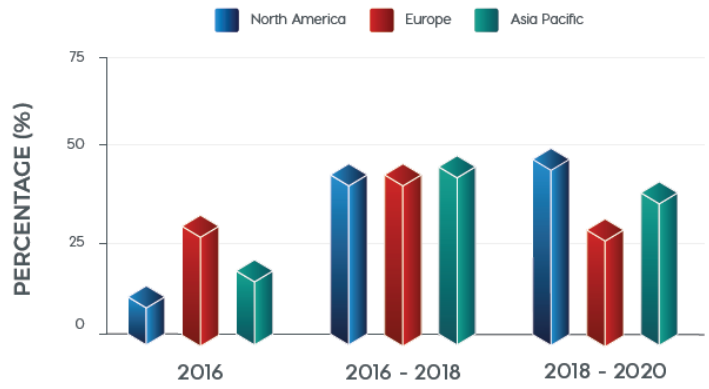


Fig. 3: Critical mass in issuance and usage of Contactless/ NFC [18]

The preferences of traders in different payment systems vary according to the nature of their work. We can see below the results of the usage of contactless/ NFC systems per payment market. As it was already mentioned, the highest rate of usage occurs in sectors where customer service has to be very fast In order to serve a large number of customers in a short period of time.

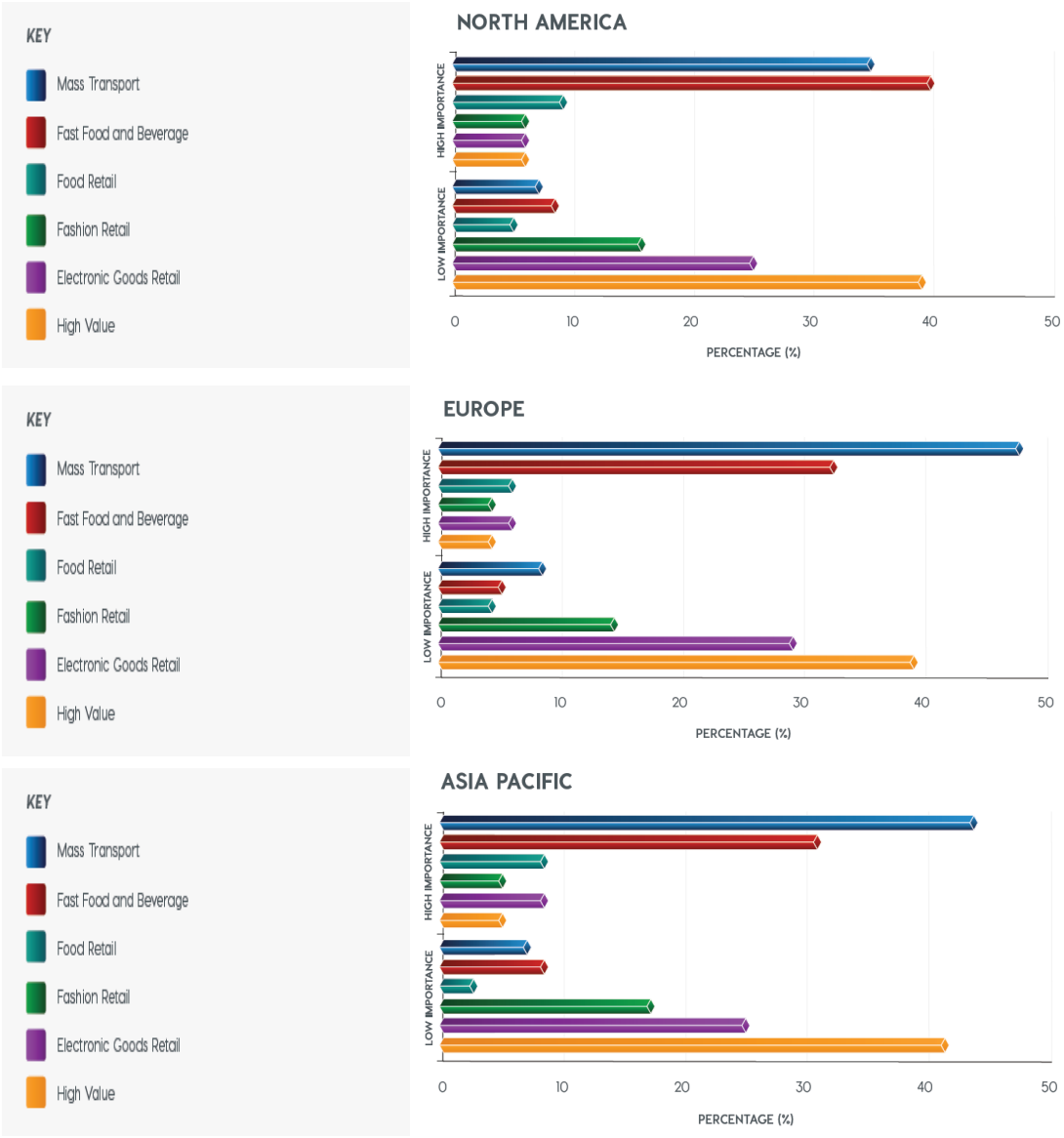


Fig. 4: Contactless/ NFC usage per merchant sector [18]

Wearables

Wearables seem to be gaining more value and a greater market share in the last few years. According to International Data Corporation Worldwide Quarterly Wearable Device Tracker, by 2019, total shipments of wearables are forecast to reach 214 million units, a five-year compound annual growth rate of 28 percent [18]. The FinTech world

is feeling increasingly excited as wearable technology blooms. Financial services are already counting predicted profits and what was once a niche market now seems to be the next global must have consumer trendy investment, business venture, and personal gadget [19].

The use of wearables in cases of payments is respectively increased in the last two years. According to the Juniper Research, in 2018 the mobile and wearable payments will be three times higher than in 2015. The study has found that the global value of mobile and wearable contactless payments is expected to reach $95 billion annually by 2018, up from less than $35 billion in 2015 [20].

The research pointed out that while nearly 9 million Apple Watches had been shipped by the end of 2015, these numbers were dwarfed by NFC-capable iPhones. As a result, it said that wearables as a whole would not account for more than 2% of non-card contactless payments by value in 2018 [20]. So, 2% of the $ 95 billion is still $ 1.9 billion, which the research company estimates we will spend through wearables. This percentage may seem small but may indicate that people feel more comfortable paying for small items with a smartwatch but do not trust wearables for bigger purchases. This may be another element in the evolution of these devices and the further research on wearables.

Digital Wallets

Although the idea of digital wallet exists since 1980's[9], customers and retailers were slow to adopt digital wallets. That changed in October of 2014 when Apple Pay debuted. Now we have digital wallets from several organizations and we could say that they are moving beyond smartphones and payments as they offer the ability not only to transfer funds, but also to monitor accounts in real-time and use blockchain technology to make immediate transfers of money to titles.

In some markets, like India, the digital wallet is quite popular, it tends to be established and the digital wallet market is expected to become a $6.6 billion industry by 2020 [21]. However, the digital wallet revolution has not have lived up to its expectations globally. According to Gallup and a research conducted in 2015, just 13% of U.S. smartphone owners have a digital wallet app, while the majority of those who do have an app (76%), rarely use it [22].

[9] 1983: David Chaum created digital cash
1990's: Paypal is being used as a software solution for eBay users

Furthermore, based on the Digital Payments Report 2016, payment industry stakeholders were questioned about the factors hindering digital wallet usage. Unsurprisingly, low merchant acceptance and poor user experience as well as the large number of digital wallet options were all seen as inhibitors, while regulation and lack of WiFi was seen as the least important factors. Regionally, there is a big disparity in the responses. This may suggest that the development and deployment of digital wallet infrastructure regionally is still in its infancy, so no particular trends have emerged yet [18]. Indicatively, the relevant charts based on the responses are listed below:

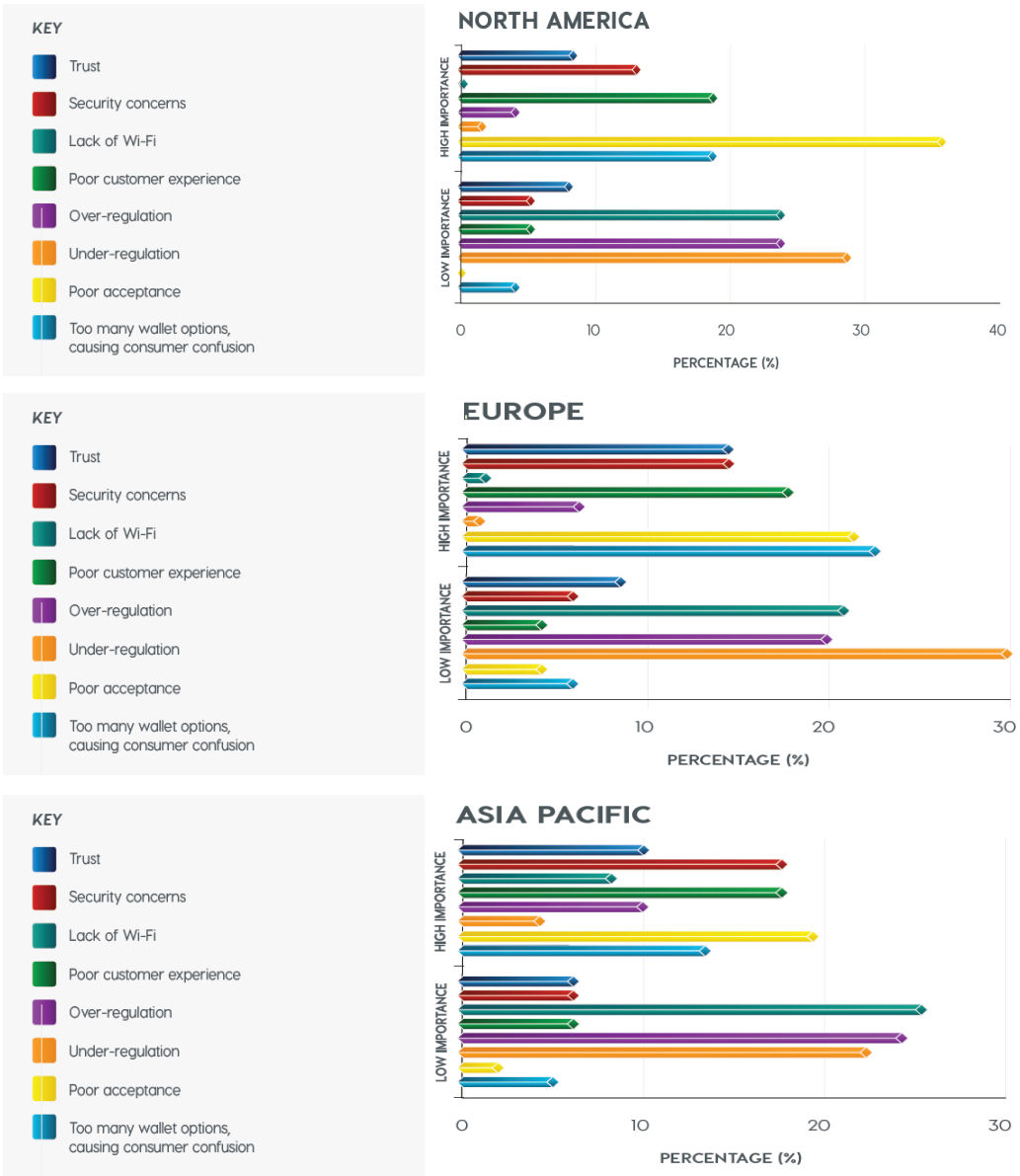


Fig. 5: Factors hindering digital wallet usage [18]

Based in the same report, we can see that Payment Networks, Banks and Handset manufacturers are the players that would most likely drive digital wallet usage in their respective regions [18].

Mobile wallets offer benefits both to merchants and customers. Some of these benefits are the loyalty integration and the enhanced security. The correct evaluation of these benefits and the adoption of digital wallets is just a matter of time.

2.3 Digital Payments – The case of Greece

This chapter gives an overview of the current situation of digital payments in Greece. In particular, this overview includes information about the legal and regulatory framework, the available services and systems and the degree of acceptance and usage of digital payment systems in Greece.

2.3.1 Legal and regulatory framework

The extent to which digital payments are used today does not depend only on the know-how of the general public or the evolution of technology. One of the most important factors affecting digital transactions is the existing legislation. Based on this, the procedures are defined and the relevant limits are set. Digital payment systems need to be harmonized with the laws of the countries in which they operate. The spectacular evolution of the Internet and the ability to make digital payments through it has created a series of legal issues that have been of great concern to both the European Union and individual Member States.

The nature of the Internet is the one that makes it difficult to regulate digital payments. In particular, the nature of the Internet, that removes the national borders of states, is in contradiction with the nature and territoriality of the legislation. In addition, commercial practices adopted on the Internet are on many occasions very different from the traditional ones and this fact leads to the creation of new trading practices, for which special regulation is required. Regulation and industry standards are still a key area of focus for the financial services industry and whilst a great deal of the new legislation is aimed at stimulating competition by lowering barriers to entry, compliance is becoming more time and resource intensive [18].

In Europe, the Payments Services Directive (PSDII) is a major current focus for the payments industry and will impact all aspects of the payment ecosystem. Directive (EU) 2015/2366 on payment services in the internal market (PSD II) came into force on 13

January 2016 and must be transposed by 13 January 2018. PSD II repeals Directive 2007/ 64/EC (PSD) from 13 January 2018 and makes technical amendments to several other directives. It introduces some important changes to the regulatory framework for payment services, including expanding the scope of coverage, clarifying the extent of consumer rights and provider obligations and introducing security and authentication requirements. PSD II is also an example of the much more closely integrated approach to financial services regulation, which emerged in the wake of the financial crisis. PSD II represents the first real attempt by the European Commission to come to terms with the substantial growth in online payment methods and the changing environment in which such payments take place [23].

PSD II comprises six Titles and one Annex. Title I outlines the subject matter, scope and definitions. Title II establishes the authorisation and regulatory framework for payment service providers. Title III addresses transparency of conditions and information requirements. Title IV is concerned with rights and obligations relating to the provision and use of payment services. Title V concerns delegated acts and regulatory technical standards. Title VI outlines final provisions, and includes a review clause, which requires the Commission, by 13 January 2021, to submit a report on the operation of PSD II to the European Parliament; the Council; the ECB and the European Economic and Social Committee [23].

The key points of the Directive include an extension of scope beyond Europe with so-called ‘one leg out’ transactions, where at least one of the account servicing PSPs on either end of the transaction is located within Europe. The definition of ‘payment institution’ is also being extended to two new categories of third-party payment providers: the Payment Initiation Service Provider (PISP), and the Account Information Service Provider (AISP) [18].

The Directive will also introduce a standard way for any licensed third-party to access accounts and initiate payments on behalf of any customer that authorizes them to do so. This will not only change how customers interact with their banks, but also open the market to new entrants to provide value-added services around the customer’s own financial data. PSDII prohibits surcharging. It seeks to standardize the approach to this and complement the work on capping interbank fees for card-based transactions. Perhaps the most significant change is the requirement for all payment institutions to implement ‘strong customer authentication’ for electronic payments and online account

access. This is defined as the use of at least two independent factors as part of the authentication process [18].

Although PSDII covers many aspects of the digital payment environment, there are still some of them that remain outside of the scope. Two gaps in particular may prove to be problematic to the delivery of the Commission's Digital Market Agenda. The first relates to a recent technological development: the proliferation of virtual currencies. The second relates to a long standing problem: vulnerability of pre-paying buyers in the case of trader non-delivery and/or insolvency [23].

Greek legislative acts are in line with those of the EU, incorporating them into Greek national law. They have to do with the regulatory framework for e-commerce specifically in Greece and differ from the corresponding European framework.

For a cross-border e-commerce system, these differences are a critical issue, as in order for a transaction to take place between Greece and another country, it must be ensured that the regulatory frameworks of the two countries do not differ, or the differences do not significantly affect the execution of the transaction. Except from the cross-border transactions, Greek legislation is very important for domestic transactions also.

As an example, some of these key legislative acts are the following:

- *Presidential Decree 33/2000* [24]

  The purpose of this Decree is to adapt the Greek Legislation to the provisions of Directive 97/5 / EC of the European Parliament and of the Council of 27 January 1997 on "Cross-Border Credit Transfers".
- *Ministerial Decision Z1-178/ 2001*

  The purpose of this Decision (OGG 255/9-3-2001) [25] is to align with the provisions of Commission Recommendation 97/489/EC of 30 July 1997 "on transactions by electronic payment instruments". It defines basic terms such as card, publisher, and owner of the card. It records the obligations of the cardholder. It supports that the owner, is not responsible for any damages, from the time he/she informs the issuer for the loss or theft of the card, unless he has acted fraudulently.
- *Monetary Policy Council Act no.50 /31.7.2002 establishing a framework for the oversight of payment systems* [26]

  This Act defines the oversight framework for payment systems and includes definitions of concepts such as "electronic payment", "electronic money", "credit

risk", "payment system operator", "payment order", "liquidity risk", and other key definitions.

- *Commander's Act Number 2501/ 31.10.2002* [27]
  This act refers to the general obligations of credit institutions operating in Greece and the minimum information they have to provide to the traders. Special reference is also made to the banking transactions through the internet and the ways that credit institutions inform traders.

In recent years, an important law has been applied in Greece, concerning digital payments, with particular emphasis on payments through the use of plastic money.
This is *Law 4446/2016 (OGG 240/ 22-12-2016)* [28], where Chapter B analyses some measures that had to be imposed in order to promote e-commerce and combat revenue concealment.
In particular, the chapter that deals with the digital payments is divided into two sections. Section A lists the measures that have been implemented to promote digital transactions. In this section, some of the basic definitions are given, referring to the relevant points of Directive EU2105/751. At the same time, it is defined that traders and professionals have the obligation to accept card payment instruments and there is also an analysis of the obligations of payment service providers to the General Secretariat for Trade and Consumer Protection on pricing data.
Section B concerns taxes and other arrangements, introduces the concepts of tax deduction through digital transactions and lottery and provides additional information in relation to the way a transaction may be secured and controlled.

2.3.2 Available Services

As it was already mentioned in a previous chapter, the use of digital payment instruments globally is growing exponentially and in some countries, the use of cash money tends to be completely eliminated.
Greece though, despite the increase of digital payments that we have seen the last few years, is still far from the European average related with the use of digital transactions. Nevertheless, it appears that even in the case of this country, digital payments are becoming more and more popular.
The technological developments support the diffusion of digital payments. The use of contactless transactions is facilitated by the fact that for purchases below €25, no PIN

code is required. In addition, some banks, in cooperation with mobile network operators, support the use of smartphones for purchases from stores that participate in the contactless transaction network. In addition, smartphone applications can be used in some cities to buy and store e-tickets for transportation (metro, trains, buses, tram) [29]. With innovative applications, the users can hail a taxi and fulfill a payment in a digital way, without using cash.

Recently, with the imposition of capital controls, the use of plastic money and PoS devices became a part of our everyday life. Moreover, due to the recent tax-free laws digital payments have become necessary. Apart from the forced measures that led to the use of the cards, there are also significant benefits for the final consumer, which helps the popularity of the particular payment instrument. The banks operating in Greece offer reward programs to promote the use of credit and debit cards. The reward programs offer bonus points for each transaction and redemption in future transactions in participating stores. Some of the reward plans provide cash returns at the end of a specific period. Finally, all obligations to the public sector (such as income and property taxes) can be paid with the use of credit cards in equal interest-free installments, which is another incentive for the use of payment cards.

An additional feature of the new environment in the payment market of Greece is that people choose technology of contactless payments for their purchases as contactless transanctions were increased by 1,345% in 2016 compared to 2015. This trend is further strengthened by the number of POS devices that support contactless payments, which reached 220,000 terminals in 2015. Highest rates of contactless transactions were recorded in toy and hobby stores (63%), pharmacies (34%), gas stations (25%), grocery stores and supermarkets (20%), and clothing stores (18%).

Moreover, although Greece has delayed the use of mobile phones to make digital payments, it seems that it has now begun to address the issue. The first relevant applications have emerged, with all banks, mobile providers and payment technology companies (MasterCard, Visa Europe) to cooperate.

Last but not least, the digital wallet is gaining more and more users because of the convenience it provides. Greek banks follow the international trends in payments with the evolution of electronic banking, and they shift gradually the emphasis on transactions made through the Internet and the mobile phone. Electronic-digital wallets are the latest developments in e-banking.

In conclusion, it is now a fact that the digital wallet has come into our life, smartphones are now replacing the credit or debit card, contactless payments are increasing daily and banks are launching products that are compatible with the new generation of payments.

2.3.3 Acceptance and usage of Digital Payments in Greece

Although the term of digital payment has been known since the 1960s abroad, in Greece the rate of increase in the use of digital payments is slow. For example, it is noted that Ministerial Decisions[10] to promote e-commerce research in Greece were issued in 2001, a year in which other countries promoted e-commerce in such a way that it increased.

We could say that Greece's course on the issue of digital payments is divided into three periods:

- The first one concerns the period before 2000. In this period digital payments were known in Greece only in a sense of knowledge but were not used in practice.
- The second period could include the years between 2000 and 2015 where the country faced capital controls and this fact led to a change in citizens' attitudes towards their transactions.
- Finally, the third period concerns the years from 2015 to today. In the last period of time, we realize that Greece is moving towards the full acceptance of digital media, citizens adopt digital systems to make their transactions and the government uses digital payments as a tool for improving the general state of the economy.

It is clear that the periods that are worth focusing on are the last two. For this reason, this chapter analyzes data relating to the years from 2000 to present. The following analysis also includes some comparisons with other European countries, in order to fully understand the level of usage of digital payments in Greece.

According to a research carried out by IOBE[11], the use of electronic means of payment has been significantly higher than in 2000. Nevertheless, the negative impact of the crisis on the diffusion of EMP was notable. In particular, the impact of the economic crisis transpired both in a slowdown of the growth rate of the number of transactions and in a reduction of their value (Fig.6).

[10] JMC 3035/B2-42.2001, JMC 7681/B2-255.2001
[11] Foundation for Economic and Industrial Research

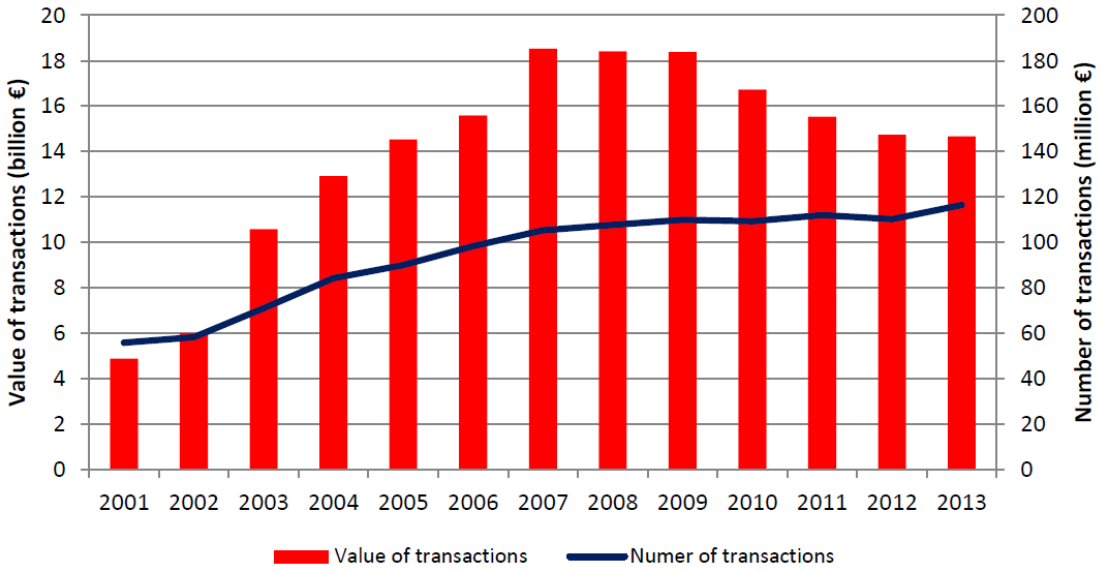


Fig. 6: Number and value of digital payments in Greece (2001-2013) [29]

It is noted that the above figure does not take into account credit transfers, which also include business-to-business transactions and transfers that are not necessarily related to the purchase of goods and services.

As we can see, the impact of the crisis is evident as the number of transactions increased by only 1.6% on average between 2008 and 2013, with the largest growth rate recorded in 2013 (+ 5.5%). At the same time, it is noticeable that the value of transactions dropped during this period. Note that, before the crisis, the value of digital payments was growing at fast pace, almost doubling in 2007 compared to 2001. However, if we look at the overall picture and the data as a whole, we can say that since 2000 the "mobility" in digital payments has increased.

Despite this growth recorded since 2001, Greece continues to occupy very low positions in the use of digital means of payment. Based on the value of transactions with EMP per inhabitant in 2013, Greece ranked higher only compared to Croatia and Bulgaria, while in terms of the number of transactions per inhabitant Greece occupied the last position in the ranking (Fig.7) [29].

In addition, the preferred types of digital payments seem to differ significantly in Greece and in the rest of the Euro area countries. Cheques seem to have great publicity in Greece as they are widely used as a mean of payment and informally offer the possibility of credit. On the contrary, the rest of Europe seems to be using more direct debits.

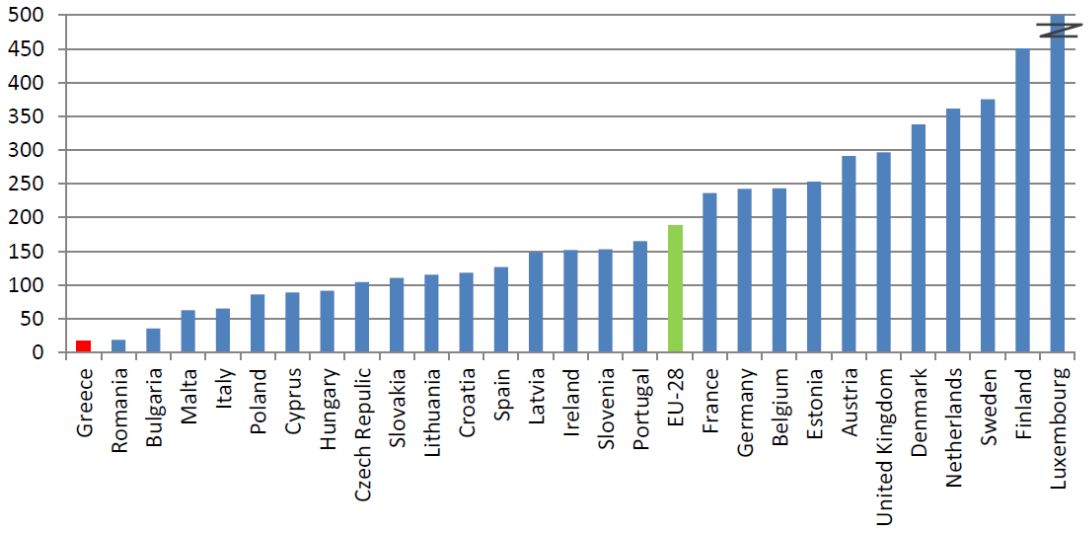


Fig. 7: Number of digital payments per inhabitant (2013) [29]

The most prevalent way of payment in Greece during the period from 2000 to 2013 seems to be the cash. In particular, it is estimated that in 2010 about 97% of the transactions were made with cash (Fig.8). In that ranking, Greece is ranked first among all countries of the European Union (EU) followed by Bulgaria with 95%. The last country in this ranking is Luxembourg, where the cash use does not exceed 30% of the transactions.

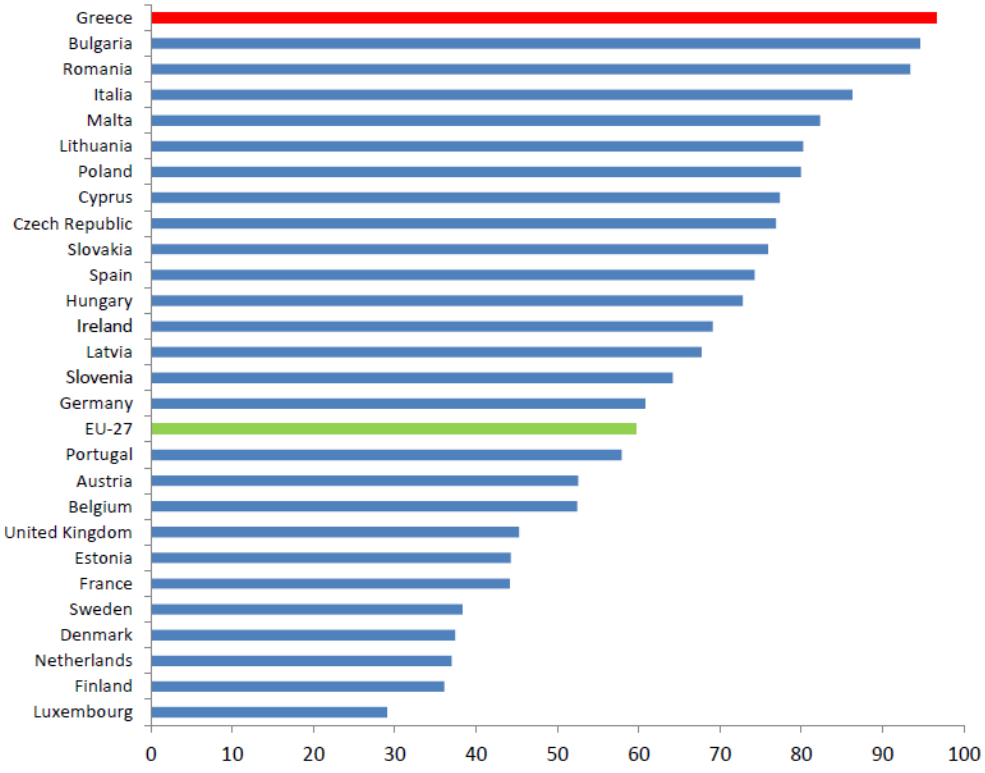


Fig. 8: Percentage of cash use in payments with respect to the volume of transactions in 2010 [29]

One basic tool/instrument of digital payments is the use of plastic money - payment cards. Again, according to the IOBE research, there is a significant difference in the number of transactions per inhabitant in Greece and the Eurozone. While the number of transactions per inhabitant in Greece increased from 5 in 2000 to 8 in 2008-2009, to fall back to 7 transactions thereafter, in the Eurozone, transactions increased from 26 in 2000 to 76 in 2013 (Fig.9). The same happened also with the value of transactions as a percentage of GDP, which in Greece in 2013 was only 2.3% of GDP, compared with 13.2% in the Eurozone.

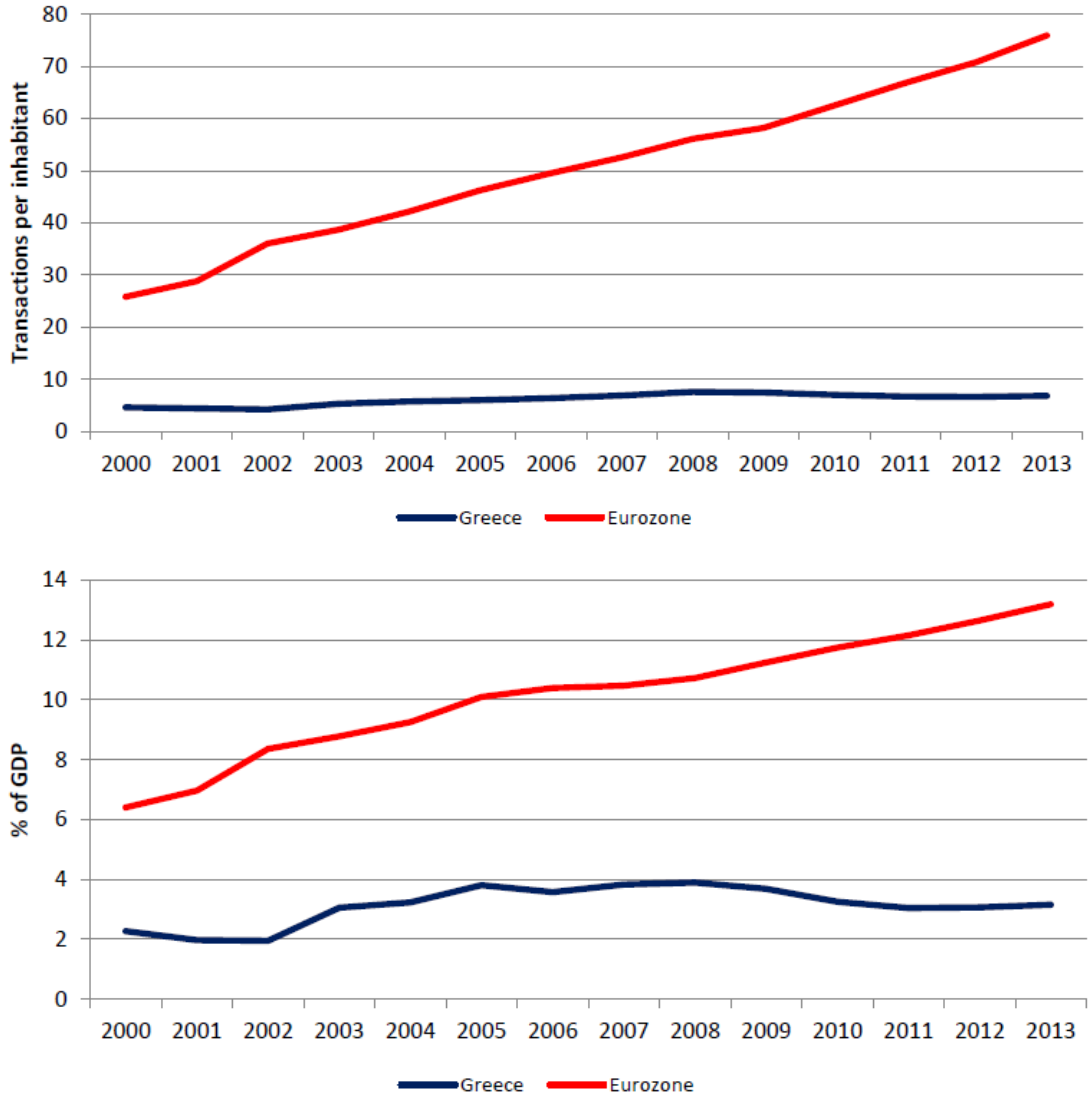


Fig. 9: Number and value of transactions with payment cards in Greece and Eurozone (2000 – 2013) [29]

It is clear that Greece is far behind the rest of Europe in digital payments. However, there has been observed an increased use of debit cards in recent years. At the same

time, though, the use of credit cards has declined significantly during the financial crisis.

During the summer of 2015, the bank holiday, the compulsory acceptance of payment cards and the daily limit on ATM withdrawals gave a significant boost to the diffusion of digital payments. In July, the use of payment cards for purchases through POS terminals had been more than doubled compared with June. At the end of July the use of cards declined, remaining however much higher compared with the period before the imposition of capital controls (Fig.10).

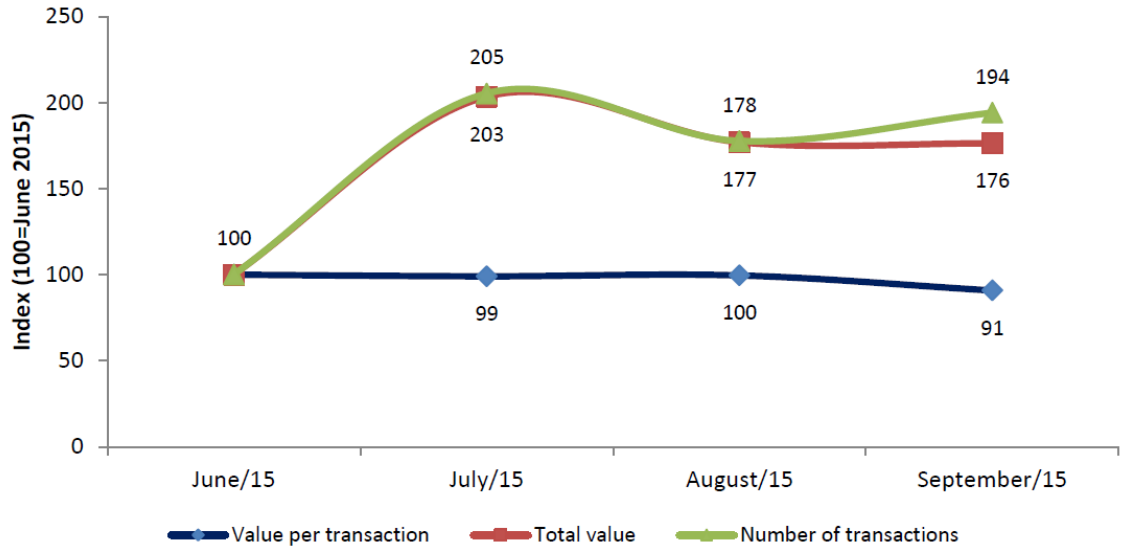


Fig. 10: Domestic transactions with payment cards over the summer of 2015 [29]

Due to the imposition of capital controls, Greek consumers, who used traditionally cash in their payments, have been forced to multiply the frequency and value of card transactions. While it has been debit cards that have primarily profited from this development, credit cards have also seen an increase, after years of decline induced by booming insolvency amidst recession. In January 2016 debit cards had an increase of 100% compared to a year ago. Moreover, in the second half of 2015, debit cards' turnover was already higher from the turnover of credit cards. It is noted that the increase in the debit card turnover "directly strikes" the cash, since it does not abstract from the credit card turnover. Credit cards showed an increase rate of 5% -10%.

Legislated regulation dictating the mandatory use of cards for purchases over €1,500, along with announced measures for the mandatory acceptance of cards by new businesses, freelance professionals and merchants, the deduction of card purchases from consumers' taxable income, and a fast-expanding network of POS terminals around the country further boosted card usage during 2016. At the same time, all debit and credit

cards issued towards the end of 2016 were contactless, and contactless card transactions came to a small, yet sizeable amount for the first time. The launch of the first digital wallet on a commercial level became a reality in May 2016, and smartphone-based transactions initiated in Greece [30].

In order to boost electronic payments, in November 2016 the Greek government proposed to provide tax benefits and other incentives to individuals and businesses for using payment cards. These include additional tax benefits to those who use cards for more than 80% of their total annual spending, and tax discounts on medical expenses paid with payment cards. The ministry has also proposed incentives for businesses by reducing the tax rate on earnings from sales via payment cards. The government also proposes to make it compulsory for businesses to pay their employees through a bank account if their annual salary is above €500 [31]. Lastly, it is worth mentioning that the increase in digital payments in January 2017, compared to the corresponding month of 2016, is around 50%, while turnover growth is about 30%, which means that more and more citizens use plastic money. Moreover, data from banks show that if we compare the turnover today to points that had terminals in 2016, the increase in transactions is 33% and the turnover is 16%, which means that a significant percentage of the increase comes from points that have acquired POS in the last 12 months. The demand for new terminals also reveals that a high percentage comes from freelancers. It is estimated that 23% -25% of the new terminals in January 2017 are freelancers, when for the whole of 2015 and 2016 it was between 12% -13% and before 2015 only 5% -7%.

According to recent data released the European Central Bank, it is estimated that the percentage of payments with cards in Greece in 2016 was increased by 108.8%, recording the highest rate of increase among the countries of the European Union. This trend, which is officially recorded in the data of the European Central Bank for the previous year, continues also in 2017, following the imposition of the new measures for the traders and the new legislation in general. ECB data, which is compiled statistically not only by the Eurozone countries but also by the 28 countries of the European Union, confirms the distance that separates us from the developed markets in terms of electronic transactions. Thus, it is significant that the value of card transactions in our country as a percentage of GDP is only 8.8%, compared to 14.3% in the Eurozone and 19.7% in the European Union.

According to the ECB data, card transactions in Greece represent the percent of 47% of electronic transactions, close to the corresponding European average. Characteristically,

the number of card transactions reached 301.5 million last year, 221.5 million of which were debit card transactions, while the number of credit card transactions amounted to 78.4 million. The value of card transactions amounted to EUR 15.4 billion, up to 73.1% more than in 2015. With an average transaction value of 51.1€, Greece is very close to the corresponding European average, which stands at 46.8€ for the Eurozone countries and 48.9€ for the European Union «28».

As can be seen from the above usage data, Greece has made a great progress in terms of digital payments in recent years. Many factors have helped to make digital payments a part of citizens' everyday lives. Some of these factors were the evolution of technology, the familiarization of users with smartphones and internet, the economic crisis, the imposition of capital controls and others.

Despite the increase of digital payments over the last period, Greece is still far below the average of digital payments in Europe. In particular, it is not only the rate of use of existing technologies that we take into account, but also the rate of adoption of new systems. There are many countries that tend to eliminate the use of cash money, creating more and more alternatives for making their payments in a digital way. Greece still differs a lot from this kind of countries and this kind of perception in general, and there is much room for improvement of the existing procedures to enable the promotion of digital payment technologies.

3 Research Approach

This chapter analyzes the research problem and the main objectives of this dissertation thesis. At the same time, the importance of digital payments in Greece is presented, at a business, consumer and national level. Finally, the initial hypotheses are defined and the main stages of the survey are summarized.

3.1 Project's Definition

As it was discussed in the literature review, the use of digital payments in Greece is not very developed although it has been increased in recent years. This dissertation's aim is to analyze the implementation and usage of digital payments in Greece, focusing slightly more on plastic money.

More specifically, the project examines the degree of acceptance of digital payments by citizens / individuals (in comparison with the past) and the extent to which digital payments' systems are used by professionals / businesses. At the same time, taking into account the substantial change in Greece's legislation related with digital payments, the project investigates the perspective of citizens and businesses, the possible concerns that raised after the implementation of the new measures, and whether there are alternative measures / incentives that could be applied to strengthen the use of digital payments' systems and eliminate tax evasion.

3.2 Importance of Digital Payments

The use of digital payments can totally modify the current state of the Greek economy. The effects of their use do not only affect traders, companies or consumers but also the national economy.

3.2.1 Business Level

Digital payments can totally change the way a trader/company works. It is not only the transaction process that is affected but also the entire business process. By enhancing the use of digital payments, the competitiveness of the business can be increased and its

core operating costs can be reduced. At the same time, it enables the trader to serve customers in a shorter time while minimizing the possibility of error. Finally, through the use of digital payment systems, it is possible to automate many key business processes, saving time, effort and money.

3.2.2 Consumer Level

Citizens - consumers can make their daily lives easier by using digital payments. Indicatively, the use of digital payment systems offers security, convenience and saves time, allowing at the same time to use reward programs in order to save extra money.

3.2.3 National Economy

The most important aspect of digital payments is the fact that they can be used as an important public administration tool giving the opportunity to handle black economy, tax evasion and corruption. Their use will lead to the automation of tax audits and the increase in public revenues, increasing the overall competitiveness of the national economy.

3.3 Main stages and objectives of the research

The basic aim in this thesis was to draw conclusions based on real views of individuals and professionals of Greece. For this reason, the main part of the survey was conducted using questionnaires.

As a first step, a questionnaire was prepared that was addressed to individuals and included questions related with the issues referred in the chapter 3.1.

Then, in order to provide a more complete picture of the Greek market, a second questionnaire was also required. This time, the respondents were the professionals and businesses of the Greek market.

Through the questionnaires, it was possible to carry out quantitative research and draw important conclusions. The answers that were given through the questionnaires were analyzed, grouped and examined for possible correlations.

The basic hypotheses that were originally set, at the very beginning of the survey, were the following:

- Individuals use digital payments nowadays up to 30% more than they did last year, but they are not willing to increase this usage rate

- Professionals/ businesses do not agree with the existing digital payment legislation and are trying to avoid the use of digital payment systems in their transactions with their customers.

4 Contributions: Quantitative Research

This chapter presents the main elements of the research, the methodology used in the process, and the quantitative results obtained from the processing of the individual data.

4.1 Methodology

In this section, it is presented the methodology that was used in order to investigate the views of Greek individuals and professionals on digital payments, with emphasis on payments using plastic money.

In order to achieve the objectives, to investigate and check the assumptions of the present research, it was decided to use the questionnaire's method. The questionnaire was chosen as the data collection technique in the present research as it allows the collection of data in a short period of time, which would be extremely time-consuming and therefore difficult to achieve by other techniques. At the same time, the collected data can be quantified and conclusions can be drawn, that are generic in wider populations, using statistical methods. Moreover, the anonymity of the answers may contribute to the honesty of the answers.

Given that the survey is divided into 2 parts, as it addresses individuals and professionals, 2 questionnaires were prepared with a different sample. The sampling method followed for this survey was simple, random sampling, in the form of a poll [32].

In order for the research to be completed more quickly, easily and at a lower cost, the questionnaires were also compiled in electronic form and sent to the respondents by mail. At the same time, in order to have answers from those who do not have any technical background and cannot use the electronic form, the questionnaires were also distributed in physical form.

The questions were decided to be concise and comprehensive to be easy to complete. An effort has been made to avoid unnecessary and meaningless questions so that a satisfactory set of 18 questions in each questionnaire is sufficient for useful conclusions. Only closed-ended questions were used as they are easier to answer in terms of speed,

which provides more answers at a given time. At the same time, the statistical processing is easier. The researcher also focuses on what he/she wants to learn [33].

More specifically, the types of the questions that were used in both questionnaires were the following:

- Multiple Choice Questions
- Dichotomous Questions
- Rating scale questions
- Calibration questions
- Classification questions

Concerning the formulation of the questions, it was decided to be formulated in a clear and comprehensible manner and not contain any technical terms, idioms, rare and difficult words [34]. But there were also some terms that were necessary to be used to formulate the question. Thus, an explanation has been added in brackets to help all the respondents to fully understand these concepts.

The characteristics that the questionnaires must meet are of great importance in order to achieve a better and more successful conduct of the research. In particular, it was checked that the questionnaires are characterized by completeness, clarity, consistency, have a proper structure and enable the possibility to check the correctness of responses [34].

The questionnaires, which are presented in detail in subsequent sections, were answered by 155 individuals and 102 traders/companies, and the collection of answers lasted for a month in total (for both two questionnaires).

4.2 Use of digital payments - Consumer Level

As it has already been mentioned in a previous chapter, the first part of the survey is about the use of digital payments by individuals, the potential problems they face and the potential incentives they need to increase the use of digital payment systems.

4.2.1 Questionaires

During the drafting of the questionnaire, the basic design principles were taken into account, so as to have as clear as possible required data and reliable results for the completion of a proper and scientific research.

The questionnaire includes quantitative questions and, as it was mentioned in a previous section; only closed-ended questions were used. The questionnaire (Appendix I) consists of 18 questions, based on four thematic sections:

- Demographics
- Use of Digital Payments Systems
- Evaluation of Digital Payment Systems
- Recent Legislation

The *first section* contains four questions related to users' personal information (gender, age, etc.).

The *second section* contains seven questions concerning the use of digital payment systems today in comparison with last year, the extent to which citizens have the possibility to pay digitally in their everyday transactions, whether they intend to use digital payment systems in the future and to what extent.

The *third section* concerns the assessment of payment systems, containing four questions that are aimed at verifying how individuals choose the way they pay, what is most important for them in a transaction, and what are the reasons why they prefer cash instead of digital payments.

Finally, the *fourth section* contains three questions about the recent legislation that has to do with the promotion of electronic transactions, and they capture the views of individuals and the potential incentives that could be given to them to enhance the use of digital payment systems.

4.2.2 Quantitative Results

In the previous chapters and sections the methods of material collection were analysed, the method chosen for the purpose and the objectives of this survey (questionnaire) as well as the sampling method were presented, the basic data used for the compilation of the questionnaire were highlighted and last but not least, the final questionnaire was presented.

The next step, after the questionnaires' collection is the data processing.

In order to be able to have trustworthy conclusions, it was necessary to remove some malicious responses. The detection of malicious responses was possible through the combination of some individual responses. For example, it is not possible for a respondent who initially stated that he/she does not use plastic money, to state in another question that he/she makes more than 25 transactions per month using plastic money.

The final number of the individuals - participants in this survey is 155 in total. From the below figure (Fig.11) we can see that women were the 46% of the respondents, while men correspond to 54%. Similarly, with regard to age, we can observe that although the questionnaire was completed by people of all age groups, most of the participants (77 out of 155) belong in the age group «26-35» (Fig.12).

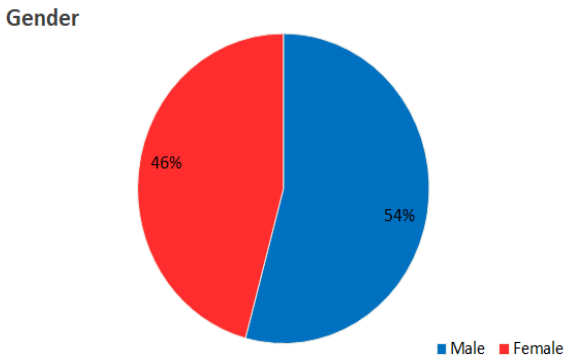


Fig. 11: Gender – Distribution of responses

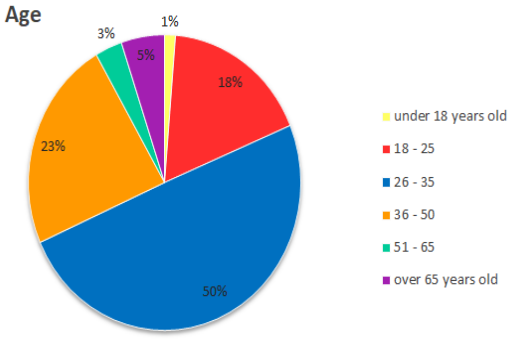


Fig. 12: Age – Distribution of responses

Another demographic question had to do with the employment status (Fig.13). According to the answers, almost half of the respondents (46%) work as employees in the Private Sector. Freelancers and self- employed come in the second place with 16%.

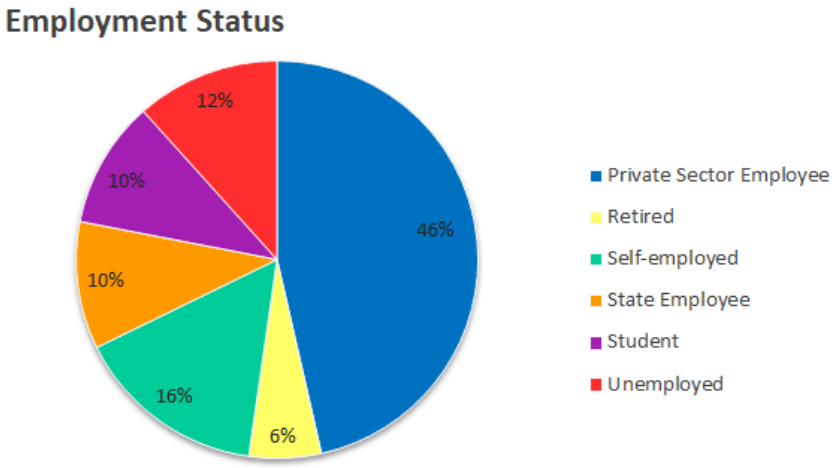


Fig. 13: Employment Status – Distribution of responses

The last question that was included in the section of demographics looks at the educational level of the respondents (Fig.14). The answers showed that only 3% did not have a high school diploma. This fact, combined with the age of the majority of respondents, points out that the lack of know-how will not be one of the most prevalent factors for not using digital payment systems.

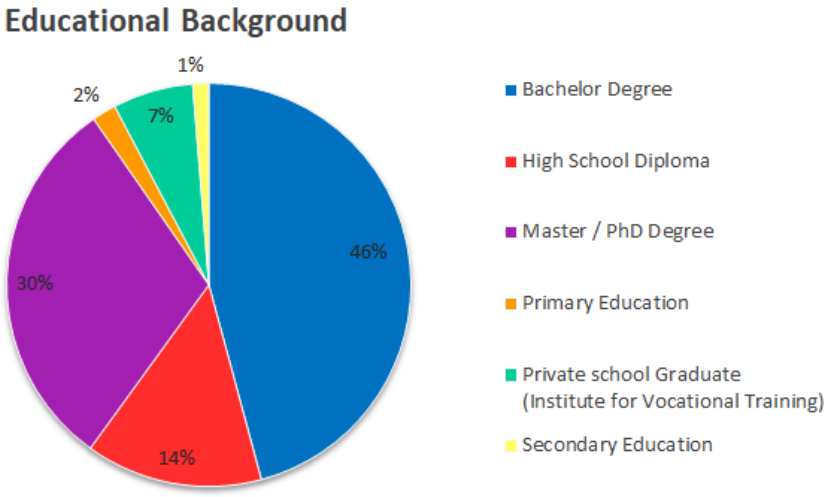


Fig. 14: Educational Background – Distribution of responses

In the question "Which of the following systems / types of digital payments do you know?" participants had the option to choose more than one answer. Based on the results shown below (Fig.15), and given that the total number of participants was 155, the most popular mean of digital payment is plastic money, as all of the participants stated that they are aware of it.

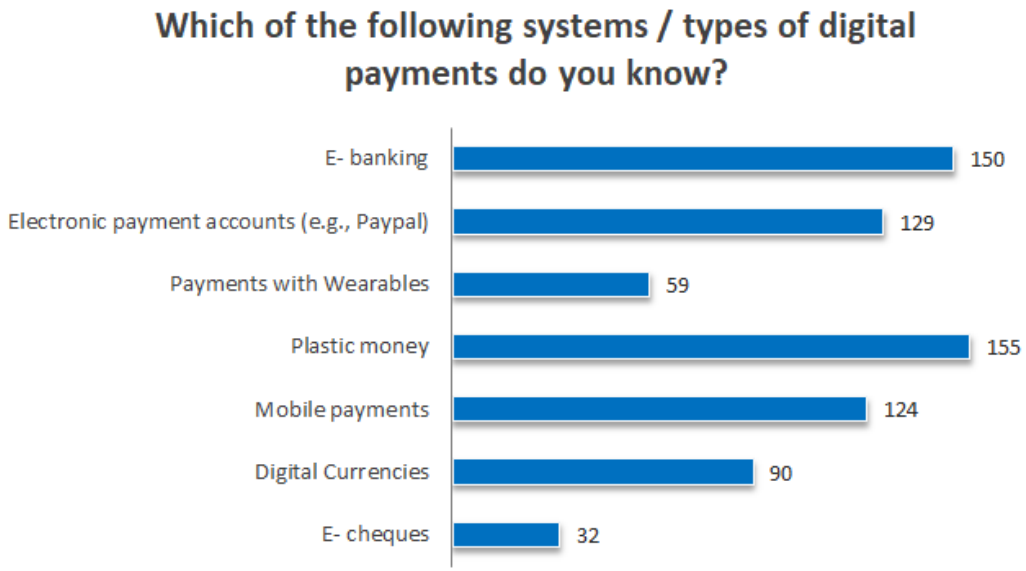


Fig. 15: Awareness of digital payment systems (individuals)

Based on the above results, the only systems/types of digital payments that seem not to be particularly popular are the digital currency, wearables and lastly e- cheque, which it seems that only 32 participants (20.65%) knew what it is. The key issue, however, is to find out which are the digital payment systems that the respondents actually use. In a relative question, the answers are distributed as follows (Fig.16):

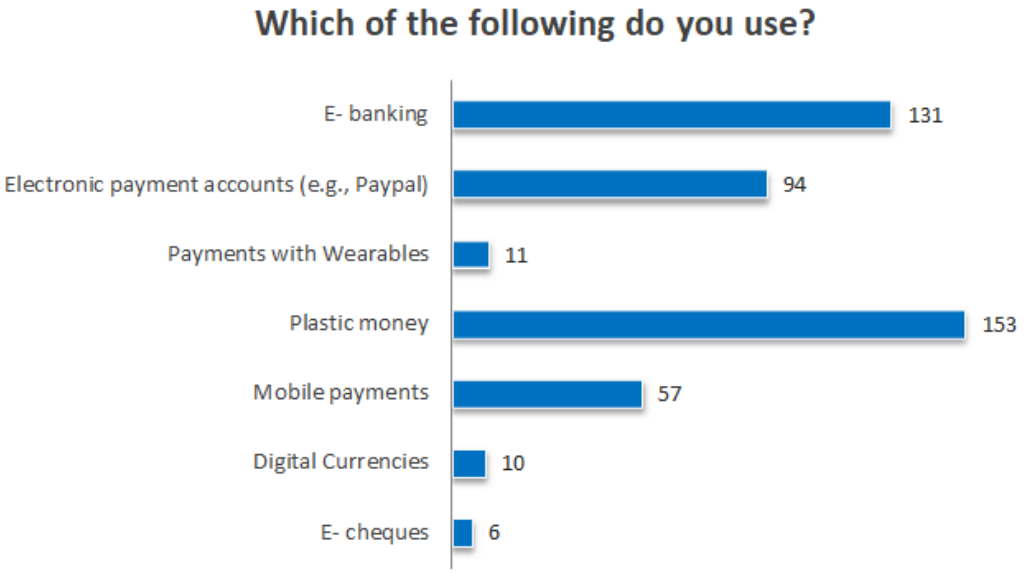


Fig. 16: Digital Payment Systems' usage (individuals)

The above diagram shows that plastic money is actually the most popular choice when it comes for someone to pay digitally. In fact, the distribution of the answers in this figure is analogous to the previous one (Fig.15). The combination of the responses came from the two questions, is presented below (Fig.17).

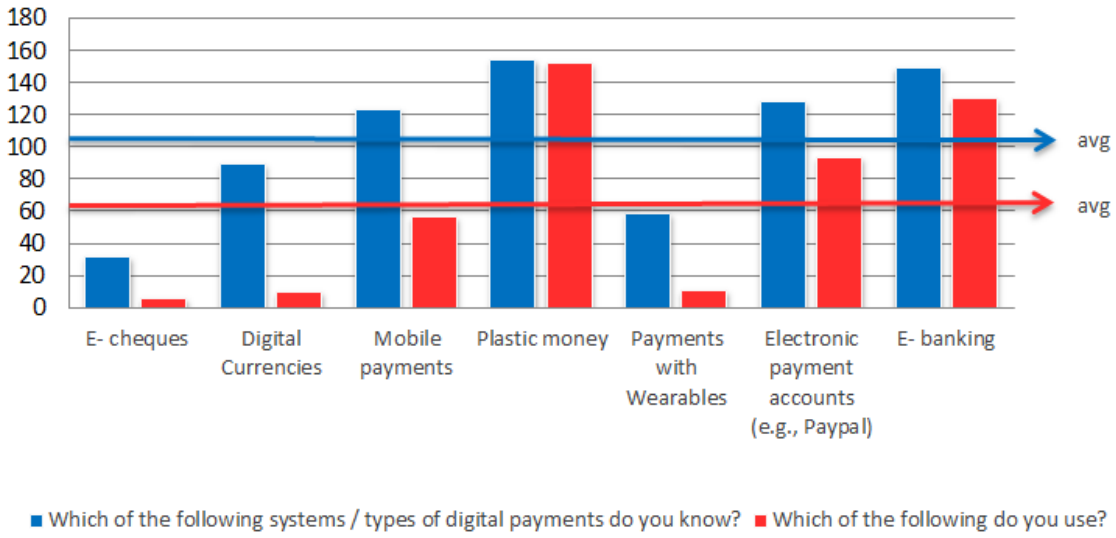


Fig. 17: Number of the respondents who are aware of a digital payment system in comparison with the respondents who actually use it

As it can be seen, according to the answers, e-banking and electronic payment accounts are also very popular, as they are used by the 85% and 61% of the respondents respectively. Moreover, if we try to draw the average awareness and the average use, we will see the fact that 106 persons in average are aware of the digital payment systems, but only the 66 of them, actually use them. So, we can identify a big gap between awareness and actual use.

The last period in Greece is characterised by many changes both in politically and economically. Citizens are forced to face many new situations and measures. One of the situations that the whole country had to face were capital controls, which seemed to have prompted citizens to increase the use of plastic money and e-banking services as ATM cash withdrawals were limited. At the same time, new legislation has recently been introduced, according to which the tax-free rate is also determined by the number of the annual digital payments.

Through the following questions, an attempt has been made to clarify which is the most popular way of payment for citizens (Fig.18), whether the use of their digital payments

has been increased or decreased, compared to last year (Fig.20) and how much they intend to use them in the future (Fig.21).

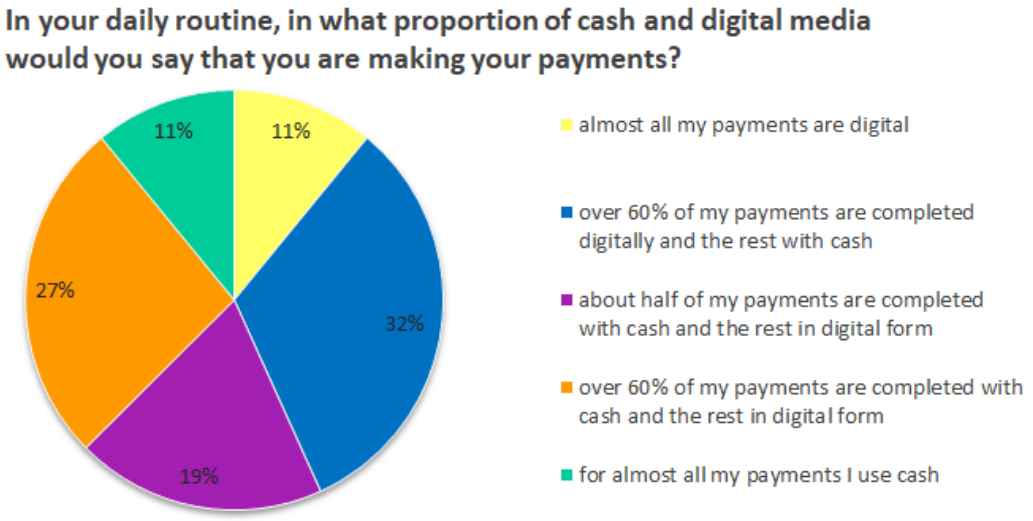


Fig. 18: Proportion of cash and digital media in the daily routine

Based on the above diagram, it seems that 43% (32% + 11%) of the population completes digitally most of their payments. Moreover, it seems that 19% of the population completes half of the transactions with cash and the other half in a digital way. But what really matters is the fact that 11% of the individuals declared that they use cash for almost all of their transactions.

First of all, it has to be considered whether people who are hardly using digital payments have some common demographic characteristics. If we look at the people who stated that they use cash for almost all of their payments in relation to their professional status, we will see that about 60% of them are students or unemployed (Fig.19). This may be justified by the fact that the unemployed and, probably, the students do not have income in their tax return and are therefore it is not required to show expenses through their digital payments.

In addition, 23% of the individuals who is hardly using digital payments are retired. This may be an indication for us, as one of the possible reasons why retirees (age> 65 years old) are not using digital payments is the lack of familiarity and expertise. However, this kind of hypotheses will be examined in detail through the questions that follow.

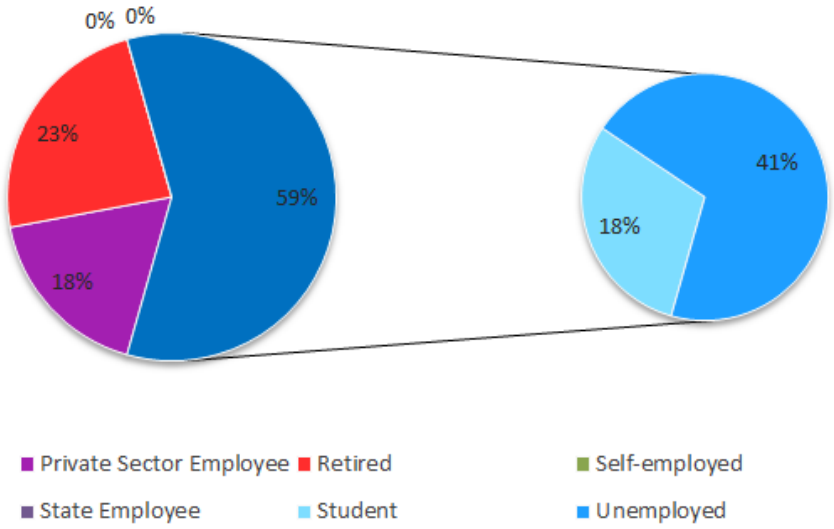


Fig. 19: Professional status of people who use cash for almost all of their payments

The next two questions (Fig.20, Fig.21) are related to the use of digital payments this year (compared to 2016) and the intention of individuals for future use.

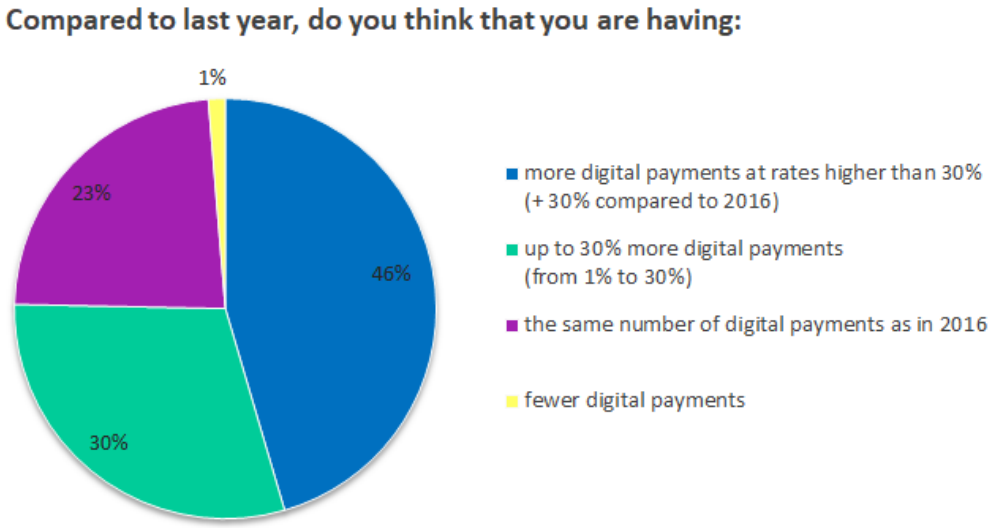


Fig. 20: Use of digital payments compared to 2016

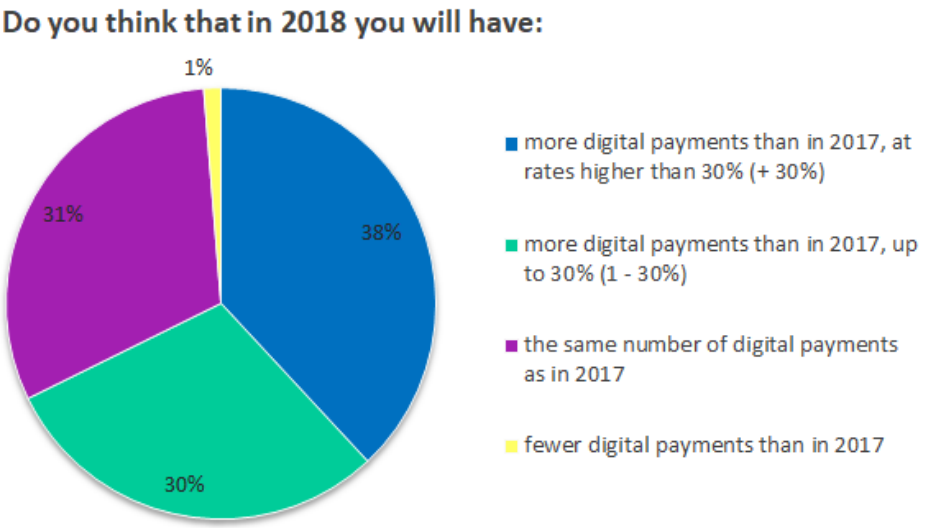


Fig. 21: Future use of digital payments, in 2018 – Comparison with 2017

Based on the above figures, we can identify the following:

- 76% of the population showed an increase in digital payments in comparison with 2016. From them, the 46% stated that the rate of this increase was more than 30%.
- 68% of the total population intends to increase its digital payments in the next year (2018). It is noted that 85% of them (68%), in the previous question, stated that they have already increased the use of digital payments. This gives us the impression that there is a large part of the population (57%) which is willing to eliminate the cash use.
- There was no increase in digital payments in 2017 (compared to last year), for the 23% of the population. It is noted that 58% of the specific population share, stated that they do not intend to increase or decrease the number of its digital payments next year (2018). This basically means that there is a large part of the population that although it can use digital payments to some extent, it resists their full adoption.

The next question focuses on plastic money, as it is one of the most popular technologies of digital payments in Greece today, according to previous responses. So, the participants were asked how often they estimate that they use plastic money within a month. The answers (Fig.22) were distributed as follows:

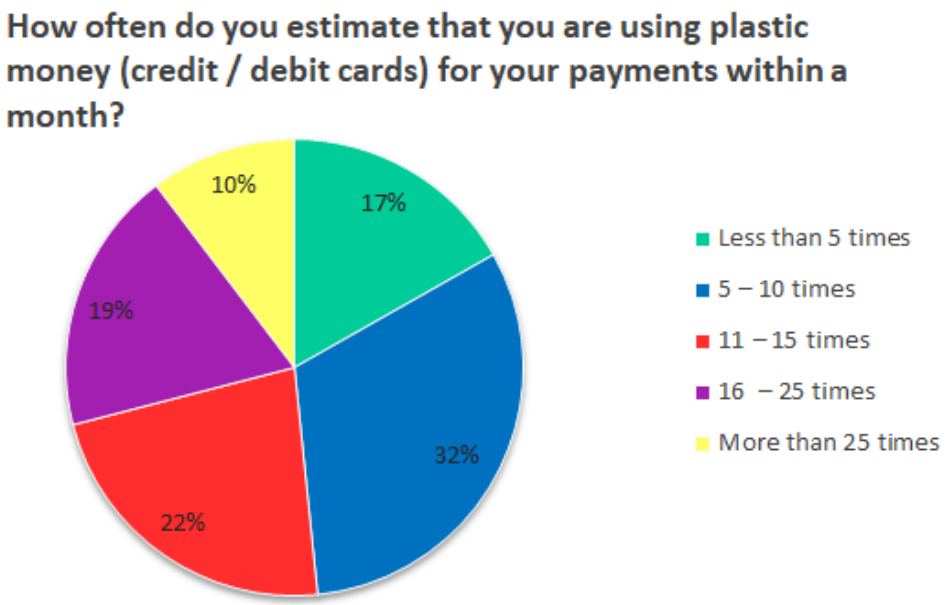


Fig. 22: Use of plastic money within a month

We can see that only 10% of the respondents use plastic money in more than 25 transactions, although it is the most popular technology of digital payments. The majority of the population (32%) uses plastic money 5 - 10 times a month.

There is a particularly large percentage (17%), which has stated that it uses plastic money less than 5 times in the month. It is noted that 62% of this population had answered in the previous question (Fig.21) that it intends to increase the rate of their digital transactions in 2018. Given that all of the participants have stated that they use plastic money, practically we expect that in 2018 we will have a big decrease at the percentage of people that use plastic money less than 5 times a month.

With the help of the figure above (Fig.22), we can see that despite the increase in digital payments, there is much room for growth in the future. We can admit the fact that there is a big difference compared to previous years, but this difference is not enough to move towards the elimination of cash use.

An important factor influencing the use of digital payment systems is the fact that many professionals/ traders do not want to adopt these technologies as a mean of payment. For example, it is possible for a customer to want to pay with a debit card but not have the opportunity to do so, as the store does not have a PoS terminal. For this reason, a question was raised through the questionnaire. The respondents were asked how often

they have the option to pay with some digital payment instruments. The responses (Fig.23) were distributed as follows:

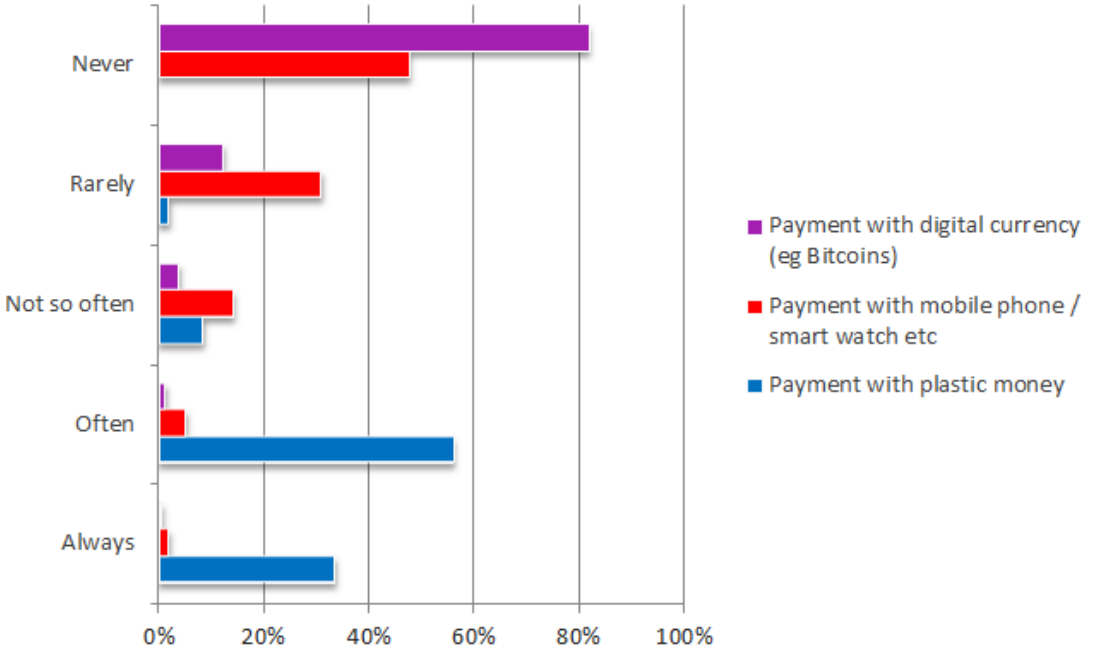


Fig. 23: Possibility of conducting a payment with specific digital payment technologies

Based on the figure above, we can see that most of the time the professionals have the infrastructure for payment with plastic money. The results are not the same for mobile phone payments or the use of digital currency. It seems that these technologies are not particularly popular in the case of Greece at this time.

In order to find out if there is a possible relationship/ correlation between a payment instrument and a product / service, the participants were asked what the method of payment they usually choose to pay for specific categories of products/services. The options given for the payment method were those listed in the following key table:

Electronic payment accounts (e.g., Paypal)	Bank Deposit
Mobile payment	Cheque
E- banking	Cash
Credit card	Debit card

The choices of goods/services that were given as well as the answers of the participants are shown in the following figure (Fig.24).

Fig. 24: The preferred payment option depending on the product/service to be purchased

Based on the results, we can see that:

- for expenses such as coffe/drink, food in a tavern/restaurant, taxi and payments of doctors, lawyers etc., the population chooses to pay usually by cash
- for expenses such as retail goods (eg clothing), purchase of fuel and supermarket, the most popular way of payment is the plastic money and in particular, the debit card
- payments through e-banking are particularly popular in cases of utility bills, payment of taxes, fees, etc.

It is clear that, as it is shown in the diagram, these specific payment systems are not selected by all participants. For example, a large percentage of the population (27%) chooses to use cash rather than plastic money when purchasing fuel. Nevertheless, it is important to focus on the answers selected by the majority of the population.

From the above results, we can see that there may be a correlation between the method of payment chosen by citizens and the value of the product/service they are interested in buying. Participants were asked to select their preferred way of payment when making payments of different values (Fig.25). Responses were the following:

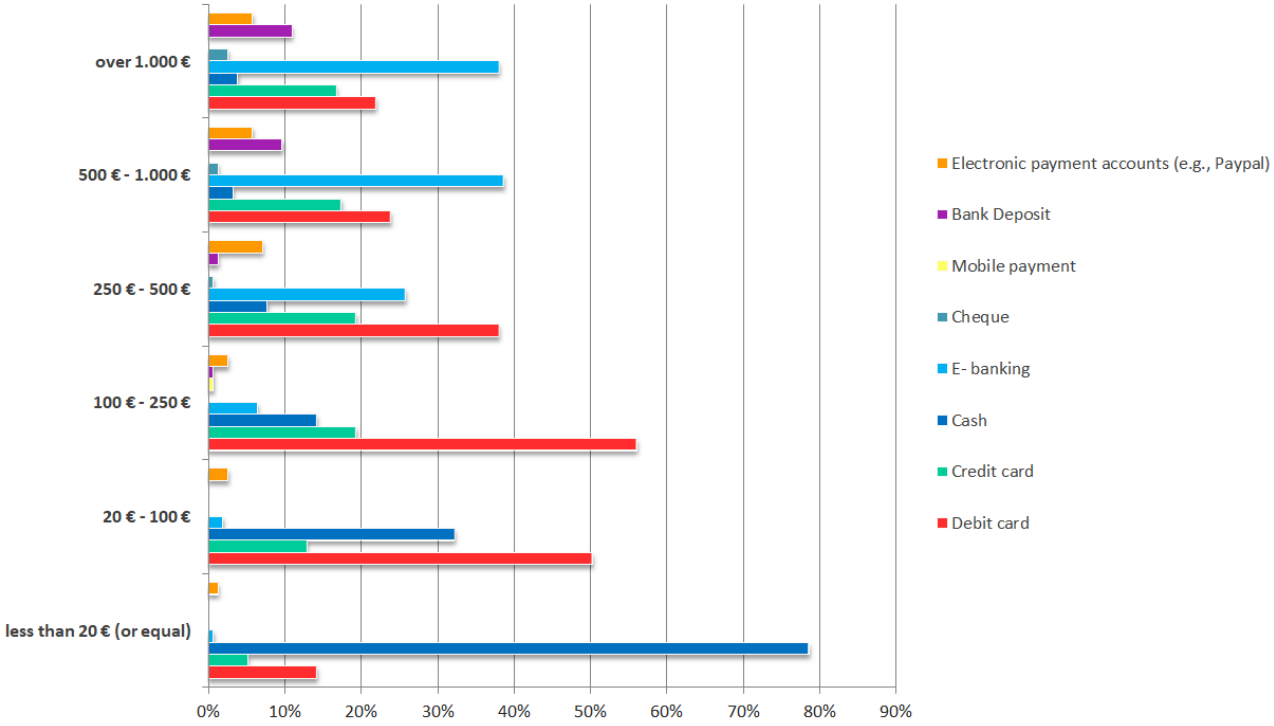


Fig. 25: The preferred payment option depending on the price of the product/service to be purchased

At first sight, we can see that there seems to be a direct link between transaction value and the way individuals choose to pay. In particular, it appears that as the transaction value increases, citizens avoid paying in cash and turn to digital payment technologies. As shown in the figure below (Fig.26), if we focus on the most popular payment technologies to see their use based on transaction value, we will see that cash usage decreases exponentially as the transaction value increases.

At the same time, we can see that the use of plastic money is not particularly used for costing less than € 20 but is the most prevalent payment method for values between € 20 and € 500. Finally, based on the figure, it appears that as the transaction costs increase, the use of e-banking and bank deposit is increasing also. Specifically, for transactions above € 500, participants showed more trust in e-banking services.

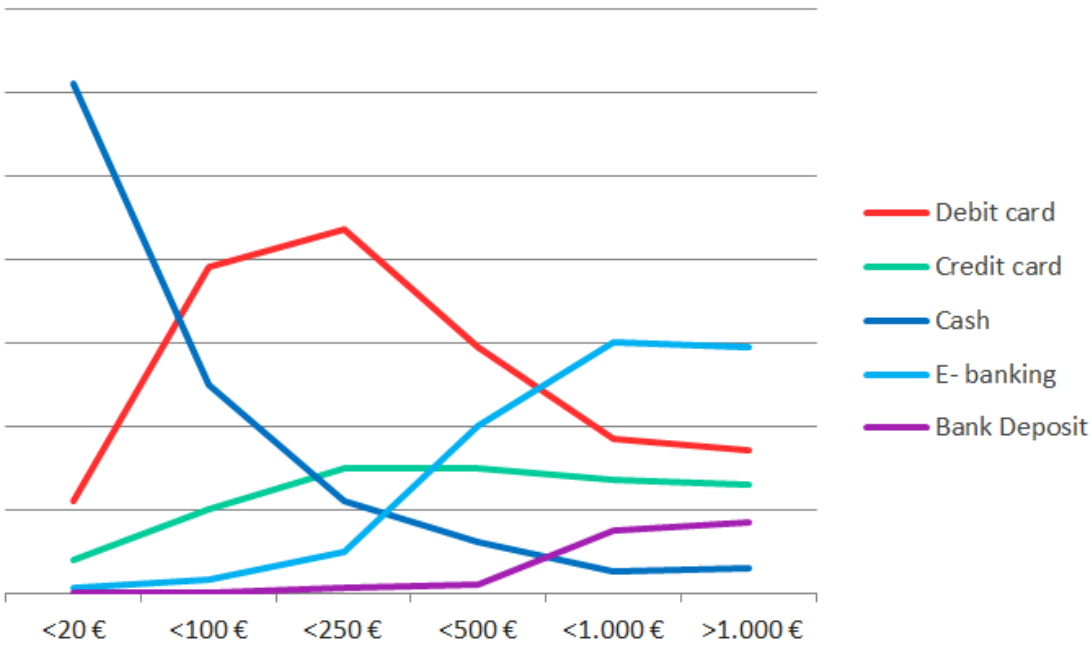


Fig. 26: Use of digital payment systems, based on transaction value

But except from the transaction value, there are also some other factors that may affect the way customers choose to pay.

The following figure (Fig.27) presents the responses given by the participants when asked to rate the following factors, according to the importance they have for them when making a decision about which way to pay.

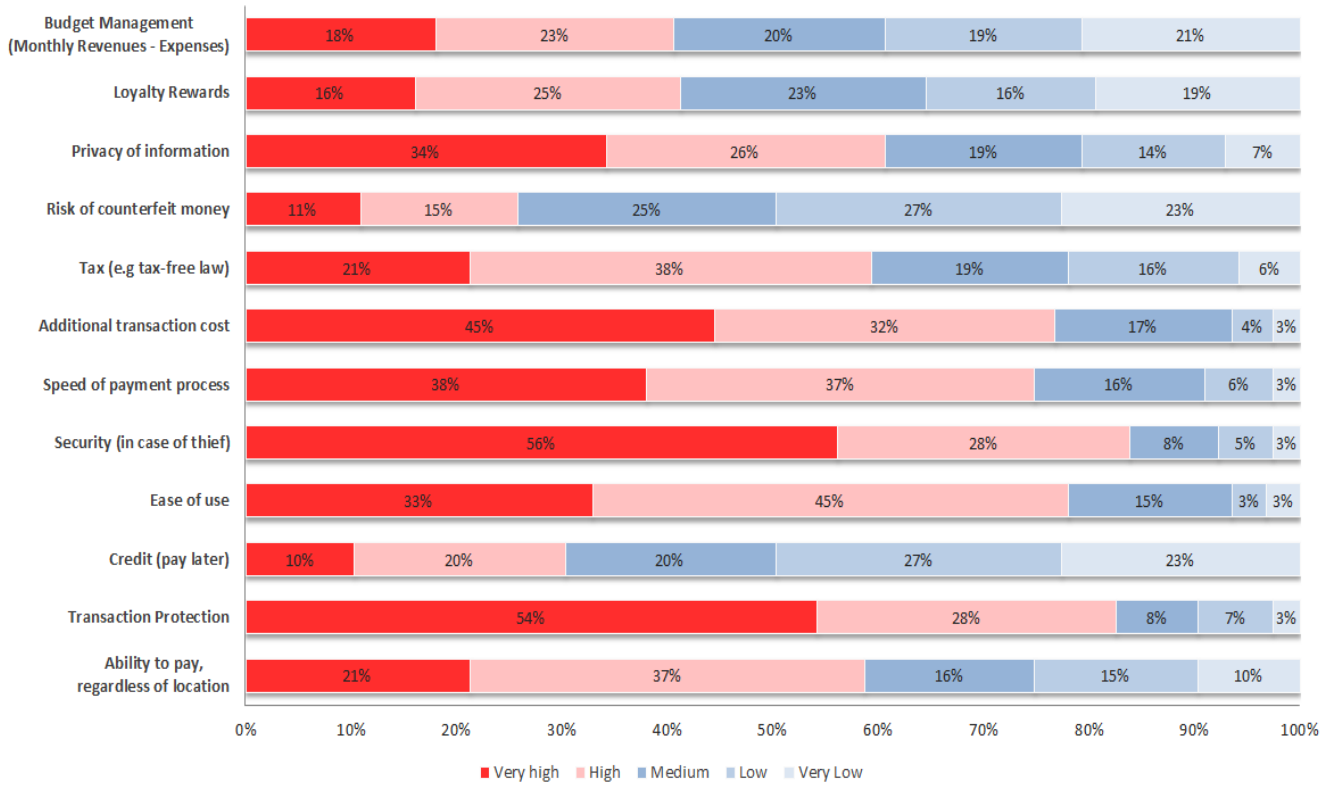


Fig. 27: Factors that affect the way individuals choose to pay and their importance for them

Based on the above, it seems that the greater importance for the majority of the population have the transaction protection, security (in case of thief), the additional transaction cost, the speed of the payment process and ease of use. On the contrary, the population does not seem to worry about the risk of fake money and the ability to pay later (credit). It is impressive the fact that more than one-third of the people who stated that the transaction protection is of high or very high importance, have stated also that they use cash for over 60% of their transactions. This is contradictory, as digital payments enhance the protection of the transaction (as there is evidence), opposed to the use of cash that anyone can claim anything. Perhaps, therefore, there has not been adequate information to citizens to meet and understand the characteristics of digital payment systems.

The next question is related to the reasons why it is preferable for the respondents to use cash against plastic money. It is impressive that almost half of the respondents replied that there is no relevant infrastructure from the professionals (Fig.28). Moreover, as we expected, due to the participants' composition, the lack of know-how was not one of the most prevalent reasons for not using plastic money.

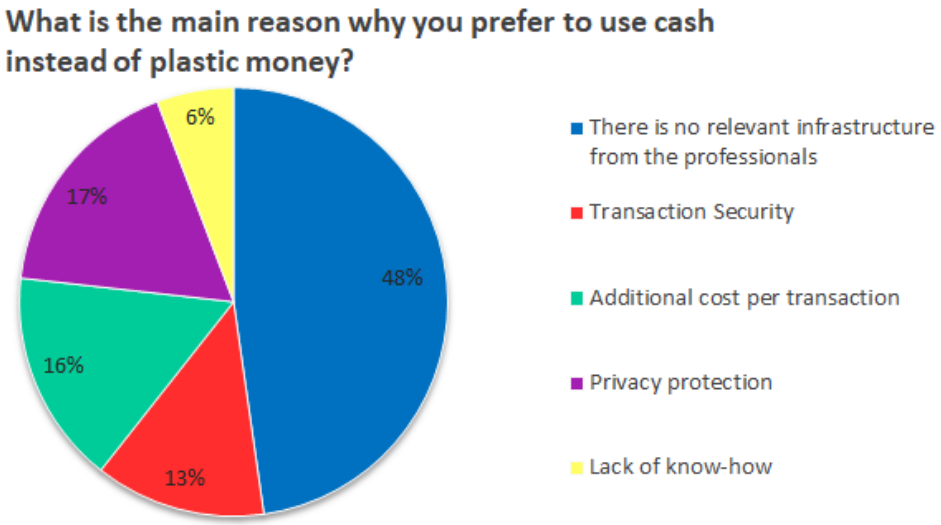


Fig. 28: Reason why individuals prefer cash instead of plastic cards

The last 3 questions of the questionnaire were related with the recent legislation implemented in Greece, concerning the promotion of digital transactions and the fight against tax evasion. Based on this legislation, a number of new measures have been implemented in the area of digital payments. An example of these measures is the "tax-free" law (through digital transactions), as well as the mandatory use of digital media for payments over 500 €. Participants were asked if they agreed to the implementation of these measures and the responses given (Fig.29) were distributed as follows:

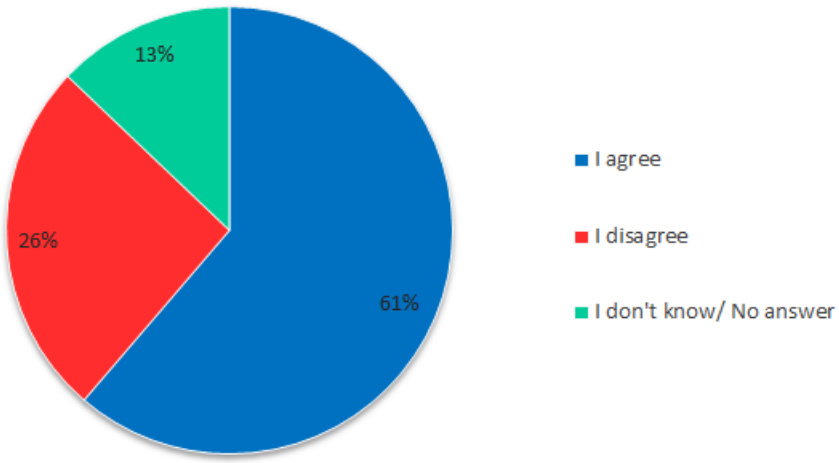


Fig. 29: What is your opinion regarding the imposition of the new measures of Law 4446/2016?

The majority of respondents (61%) seem to agree with the imposition of the new measures. Nevertheless, many of the respondents (26%) dot not agree. If we look at the

population of those who disagree with the application of the current legislation (Fig.30), we will see that almost half of them (48%), stated in one of the first questions that they use cash for over 60% of their transactions and therefore we could say that resistance to the changes, brought by the recent legislation, was expected.

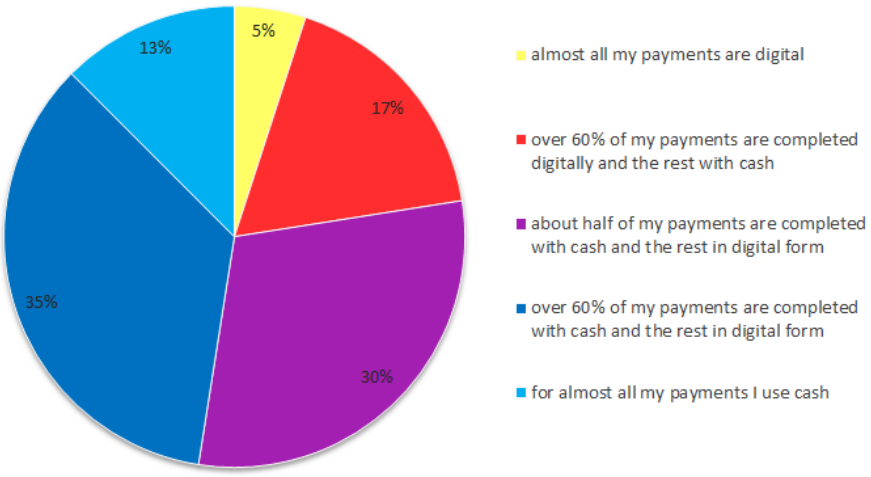


Fig. 30: Use of digital payments by people who disagree with L.4446/2016

The key question, however, is whether they believe that the implementation of the new measures will help to combat tax evasion (Fig.31).

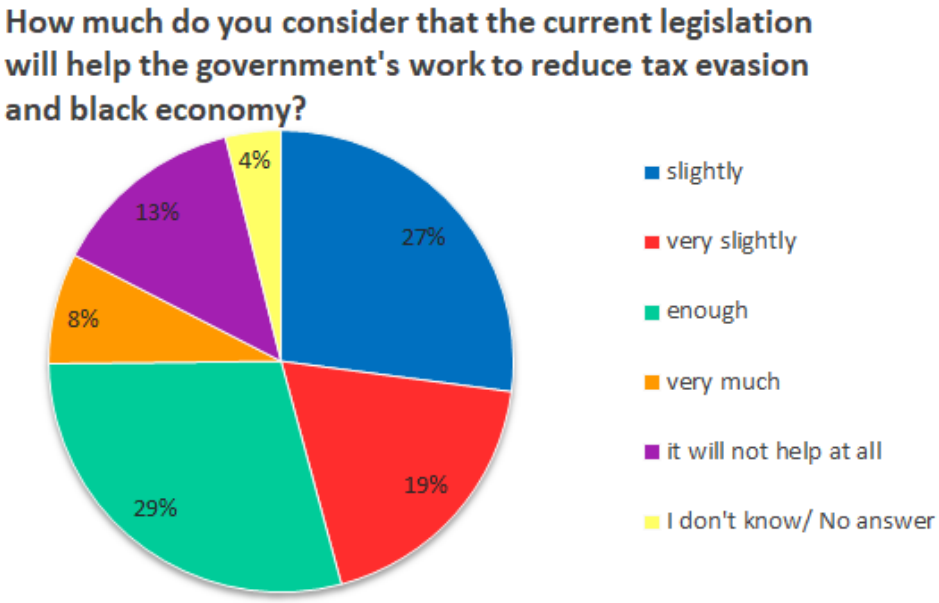


Fig. 31: The extent to which individuals consider that the current legislation will help government's work to reduce tax evasion and black economy

Although the highest percentage in the above figure (29%) comes from people who believe that the new measures will help enough, we cannot say that the overall view is positive. That's because there is a large percentage (13%) who believes that these measures will not help at all and also a higher percentage of people (46%) who believe that they will help slightly or very slightly. Consequently, we can say that citizens do not appear to be fully or sufficiently satisfied with the implementation of the current legislation.

In the last question, the participants were asked to rank five options according to their preferences. The choices concern incentives that could encourage individuals to increase the use of digital payment systems, which would help to combat tax evasion. As it is shown in the figure below (Fig.32), most of the respondents ranked the Refund of Tax as their first option. Moreover, most of the participants, ranked in the second and third option, the discount on utility bills and the pharmaceutical / medical coverage respectively.

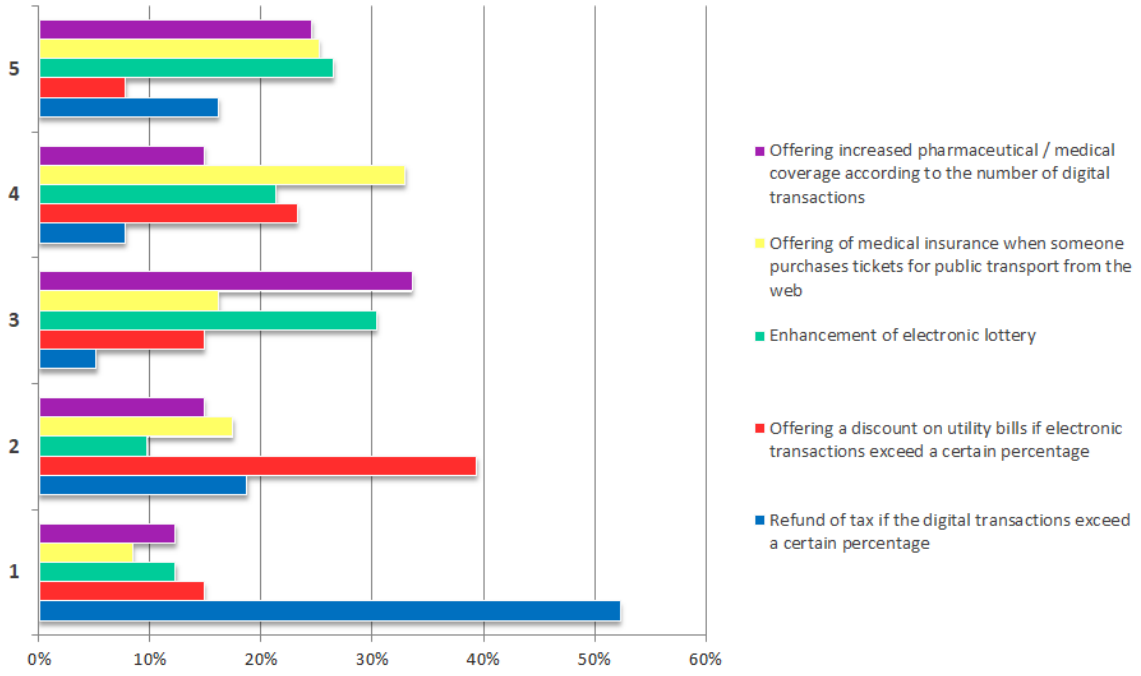


Fig. 32: Possible incentives to increase the use of digital payments - Preferential ranking

What we can see is that the lottery, the implementation of which has recently begun in the country of Greece, does not seem to be a very important incentive for the promotion of digital transactions. Moreover, based on the first preference stated by most of the participants, we can indirectly understand that citizens consider the existing taxation to be very high.

4.3 Use of digital payments - Business Level

The second part of the research deals with the use of digital payment systems and especially of plastic money by businesses and professionals in the Greek market. It will examine possible difficulties that professionals have to face when they use them and it will indicate possible incentives, which could lead to an increased use of digital payment systems by the businesses.

4.3.1 Questionaires

In order to ensure that there will not arise any problem of understanding how the questionnaire has to be completed by the survey participants, the basic design principles were taken into account, during the preparation of the questionnaire.

Respectively with the questionnaire related to individuals, so this one, includes quantitative and closed- ended questions. The questionnaire Appendix II) consists of 18 questions, based on four thematic sections:

- Business Information
- Use of Digital Payments Systems by businesses
- Customers' acceptance of digital payment systems
- Recent Legislation

The *first section* contains four questions, related with business information, (size, legal form, field of activity, etc.).

The *second section* contains nine questions concerning the use of digital payment systems today, the reasons why businesses adopted their use, it examines the difficulties that professionals face in their digital transactions and whether they intend to use digital payment systems extensively in the future, or not.

The *third section* examines, with the help of two questions, whether individuals are familiar with the idea of digital payments and whether they are asking to carry out their transactions digitally.

And finally, the *fourth section* contains three questions about the recent legislation which deals with the promotion of digital transactions. The questions capture the views of the professionals and the potential problems they face, since the new measures were imposed.

4.3.2 Quantitative Results

After the distribution of the questionnaires and their completion by the business professionals or business representatives, the next steps were the collection of the responses and the processing of the results. This chapter analyses the quantitative results.

Similarly with the questionnaire that was completed by individuals, so in this case, it was necessary to look at the answers in order to check the existence of possible malicious responses. This processing is done in order to extract as reliable conclusions as possible.

For research purposes, there has been certain segregation in terms of company size. The criteria for this separation are shown in the key table of Fig.33. From the following figure (Fig.33) we can see that the vast majority of respondents (48%) have a company that is characterized as "too small". The “very small” companies are the next with 23% and the remaining 29% is shared among small, medium and large companies.

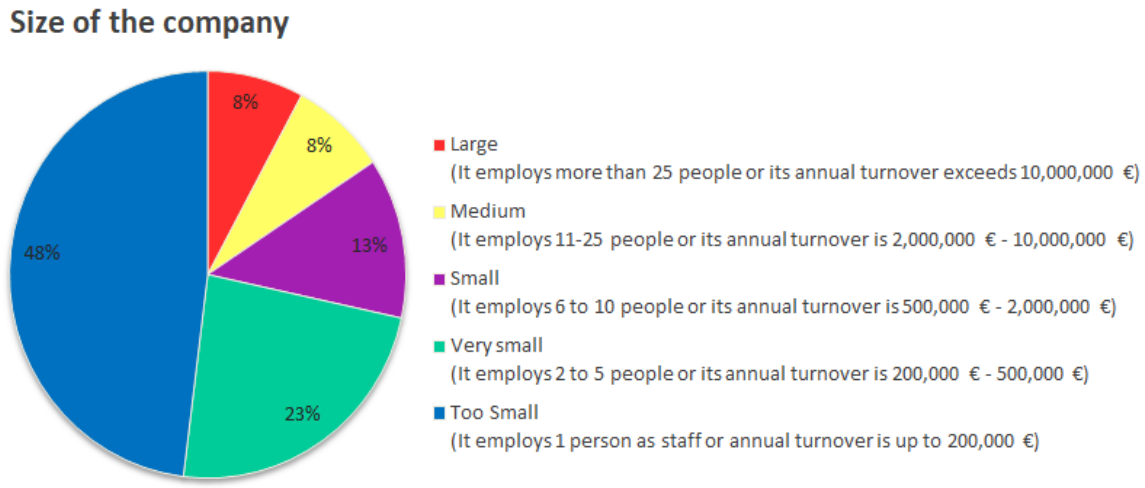


Fig. 33: Size of the company – Distribution of responses

Apart from the size of a business, there are many other features that characterize it. A key feature is the sector in which it operates. An effort has been made to cover as many areas of activity as possible for this research. As it is shown in Fig.34, there was a relatively even mix of respondents to the questionnaire across the fields of operation, which also mirrors the situation in the Greek market.

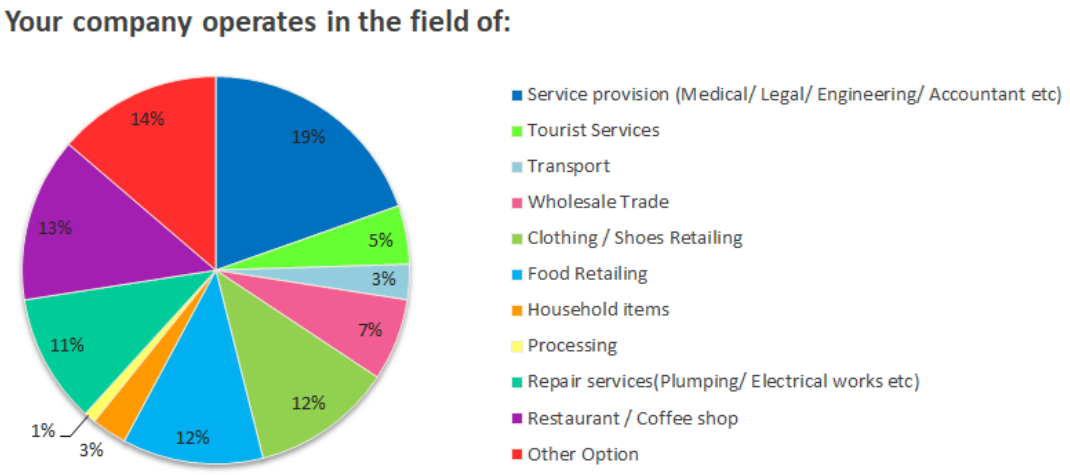


Fig. 34: Field of operation – Distribution of responses

The section of the questionnaire that contains the general business information ends with two questions that have to do with the legal form of the business and the customers to whom its products/services are addressed. The following figures (Fig.35, Fig.36) show the distribution of the responses.

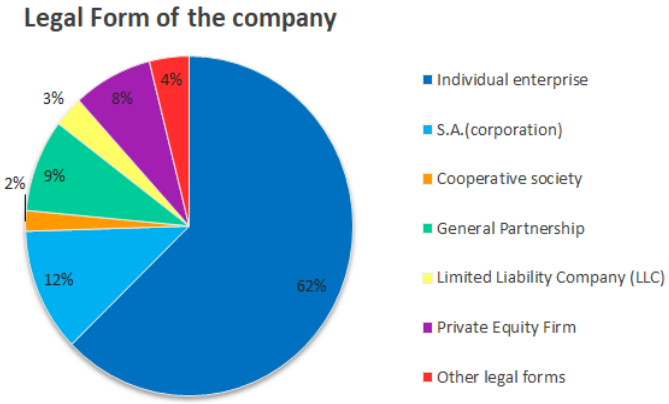


Fig. 35: Legal form – Distribution of responses

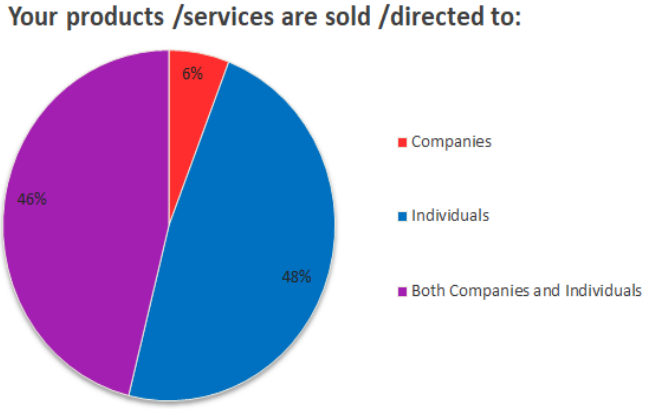


Fig. 36: Types of customers– Distribution of responses

The business data, shown in the above figures, may be used in conjunction with other questions and may be helpful in drawing useful conclusions. The second part of the questionnaire deals with the use of digital payment systems by businesses. The first two questions of this section follow the flow of the questionnaire that was given to the individuals. In particular, participants were asked at first, which are the digital payment systems that they know (Fig.37) and then, which ones they use/can support in their dealings with their customers (Fig.38). The distribution of responses was the following:

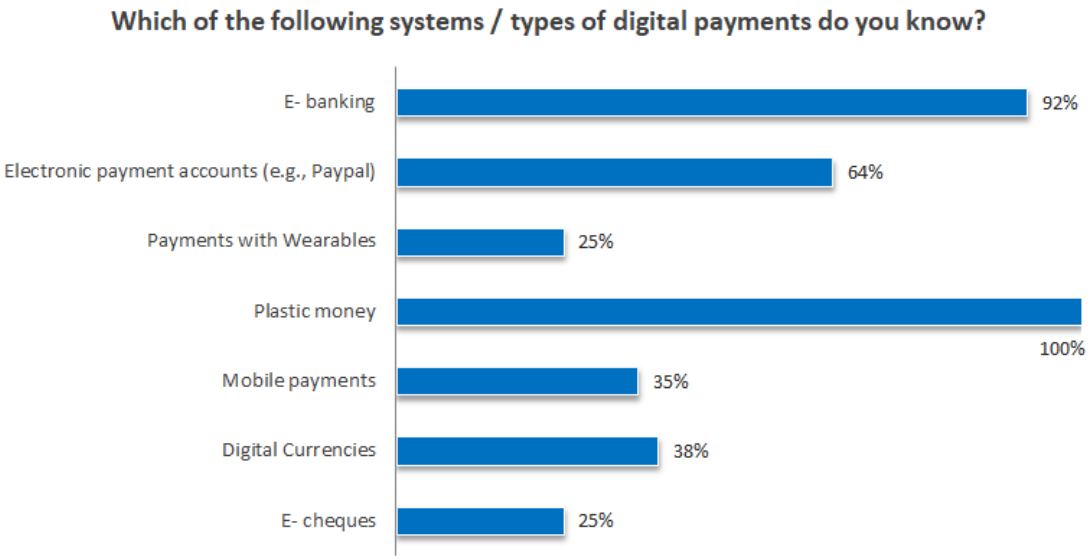


Fig. 37: Awareness of digital payment systems (professionals/businesses)

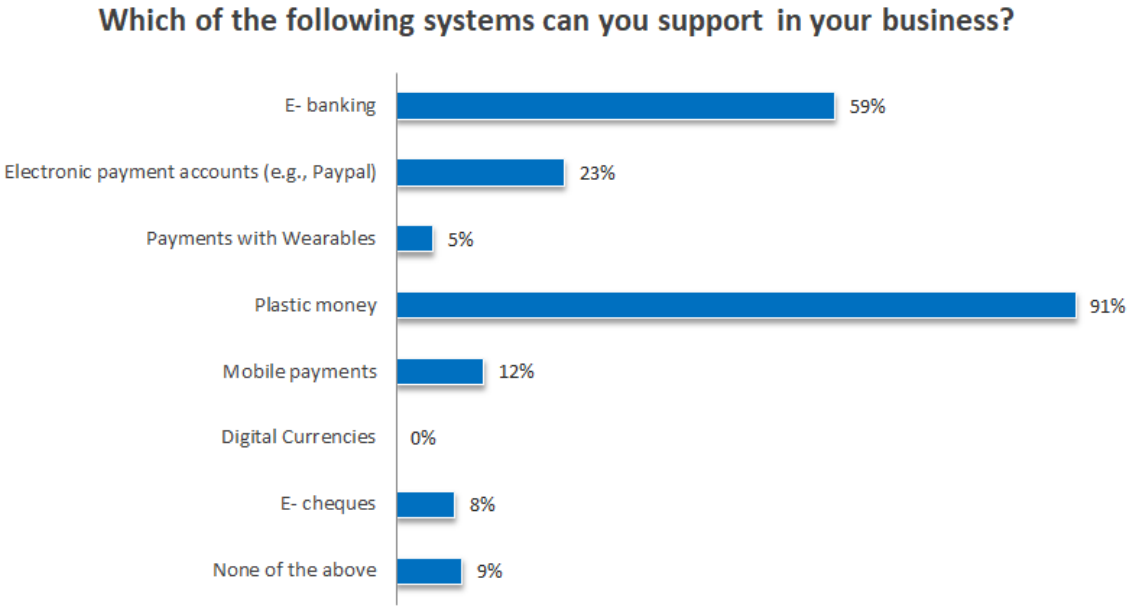


Fig. 38: Digital Payment Systems' usage (professionals/businesses)

As can be seen from the above figures, the most popular digital payment systems in businesses are plastic money, e-banking and electronic payment accounts. More specifically, as far as plastic money is concerned, 91% of the participants use it as a way of payment in their company. Second in use is the service of e-banking, with 59%, and far behind is the percentage of electronic payment accounts (23%). In Greece, it seems that the concepts of digital money, wearables, mobile payments and e-cheques are not very widespread. Finally, there is a respectable percentage of companies that although they

know some of the digital payment systems, they do not support any of them in their dealings with their customers (9%). Moreover, if we try to draw the average awareness and the average use, we will see the fact that 54% of the companies in average, are aware of the digital payment systems, but only the 28% of them, actually use them (Fig.39).

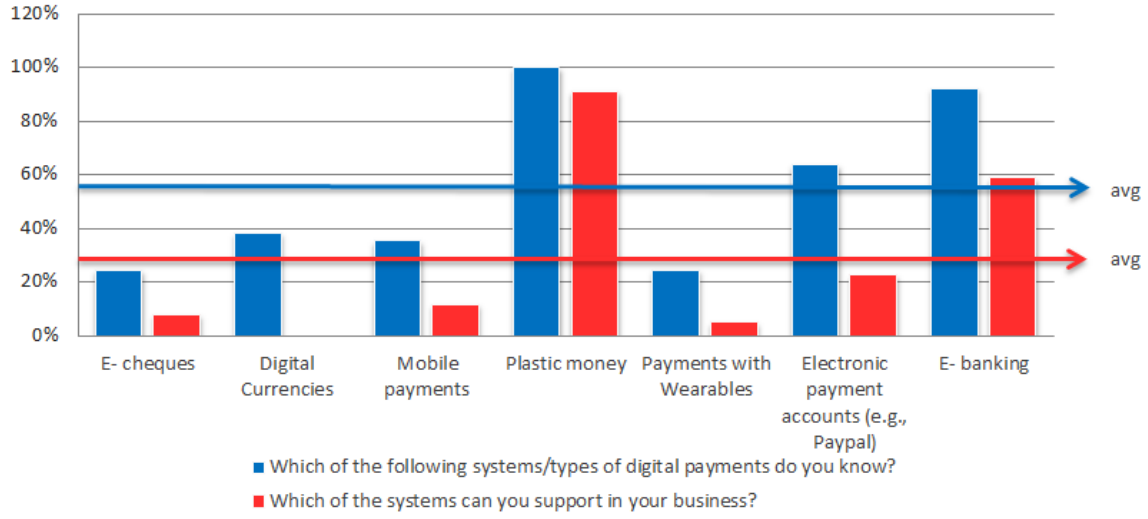


Fig. 39: Number of the companies who are aware of a digital payment system in comparison with the respondents who actually use it

In order to understand the spreading of digital payments today, participants were asked to determine the percentage of their digital payments per year, in relation to the amount of total annual payments (Fig.40). The answers were the following:

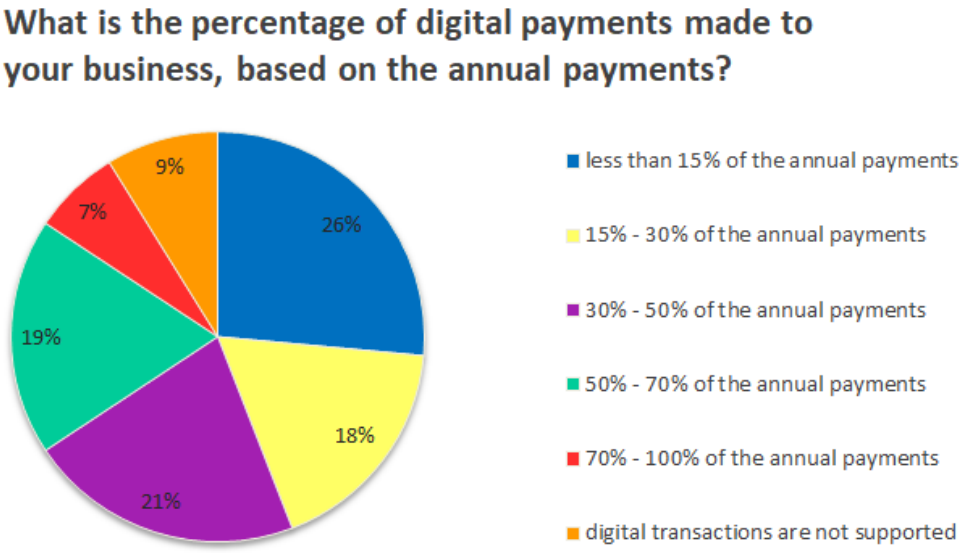


Fig. 40: Percentage of digital payments compared to total annual payments

As we can see, 26% of the respondents replied that digital payments are less than 15% of the annual payments and 9% of the population does not support any digital transactions. We can assume from the diagram above, that digital payment systems do not seem to be a basic tool for businesses today in their dealings with their customers. In addition, it appears that only 26% of businesses actively use digital payment systems, as they stated that digital payments in their business account for 50% - 100% of the annual payments. From this percentage of 26%, almost half of the businesses are operating in the field of wholesale and tourist services. For these activities, however, the increased use of digital payments was expected.

In order to have a more representative example, the same question is presented below (Fig.41), as it was answered by 4 different professional activities:

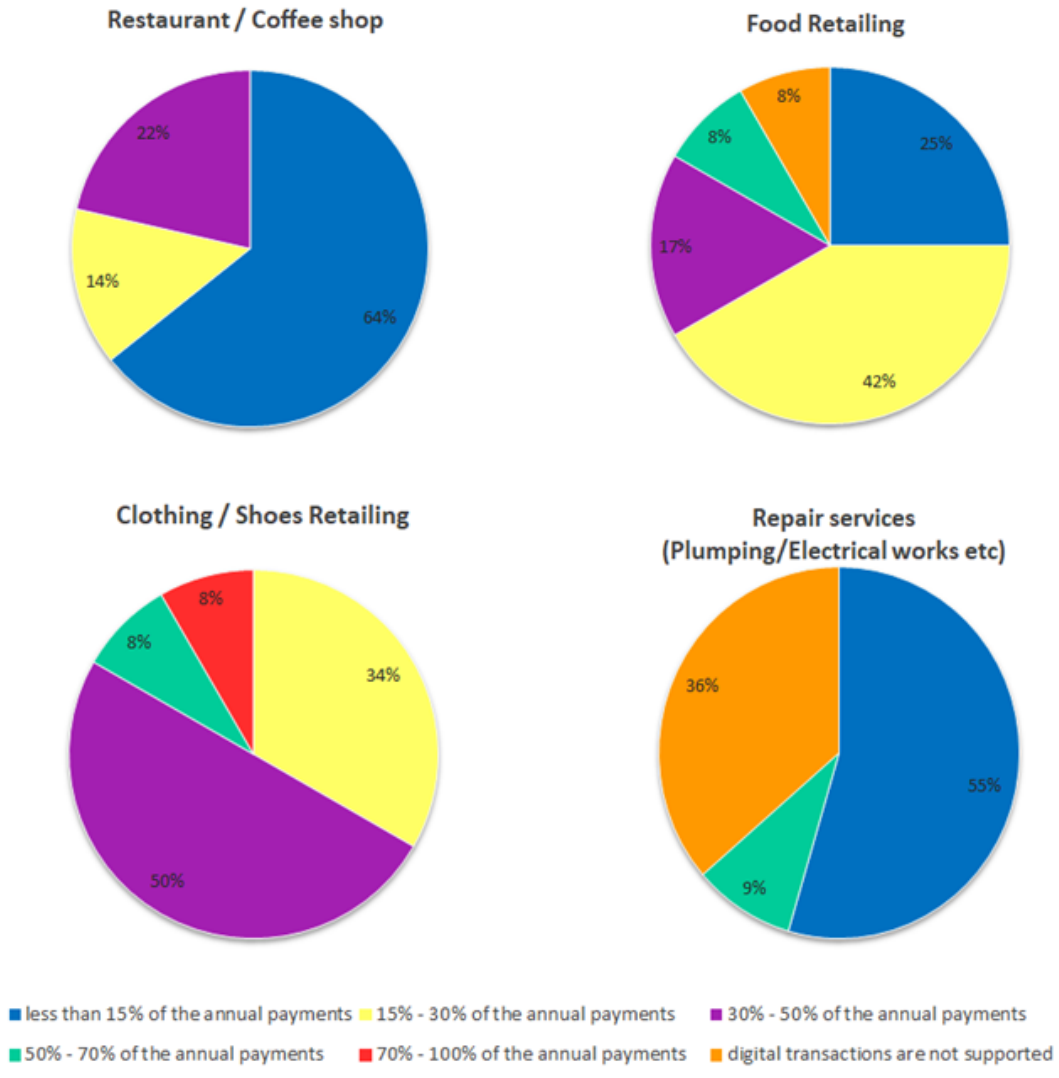


Fig. 41: Percentage of digital payments compared to total annual payments- Specific types of companies

From the above figure, we can see that the digital payment systems in general, are not particularly used. We could say that we have a good feedback in the case of "Clothing / Shoes Retailing", where half the companies perform 30% - 50% of their transactions in a digital way. "Repair Services", on the other hand, gives us a particularly bad feedback, as 36% of the businesses do not support digital payments at all, and 55% perform very few payments digitally. In general, we feel that digital payments are not being used as they were expected to be used.

As it was shown in Fig.38, the concept of plastic money seems to be very popular nowadays, it seems that the Greek businesses understand its value and most of them, adopt its use. In order to check how often plastic money is used, the question presented in Fig.42 was given.

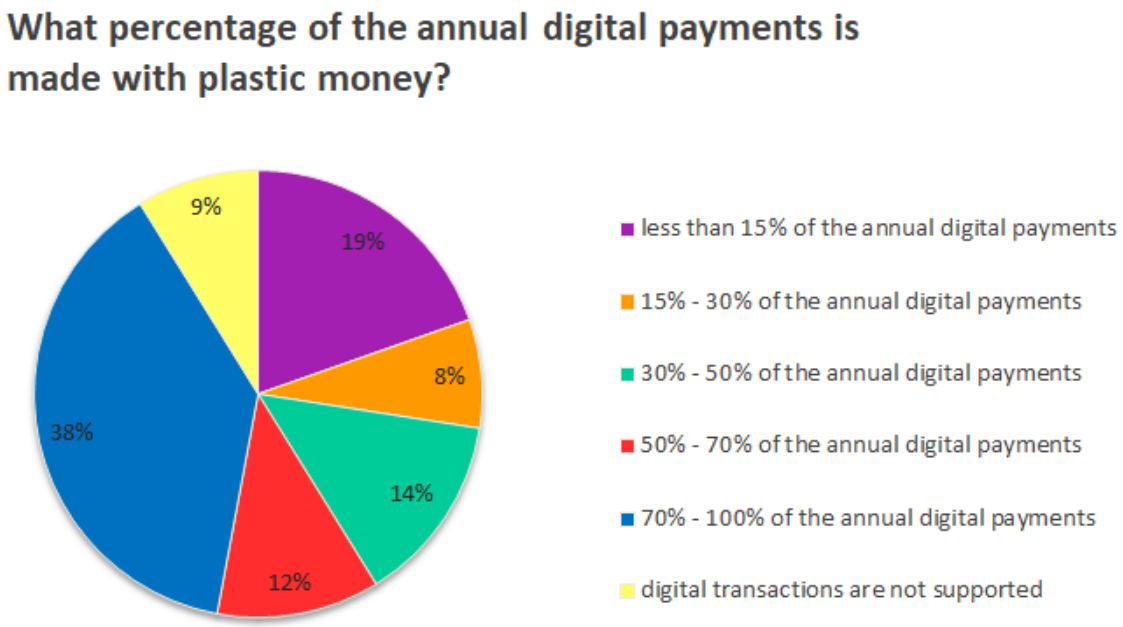


Fig. 42: Percentage of plastic money payments compared to total annual digital payments

The chart above shows that the majority of businesses supporting digital payments, perform most of their transactions using plastic money. More specifically, if we deduce the number of businesses that do not support digital payments at all, 42% of other businesses make 70% - 100% of annual digital payments with plastic money (Fig.43).

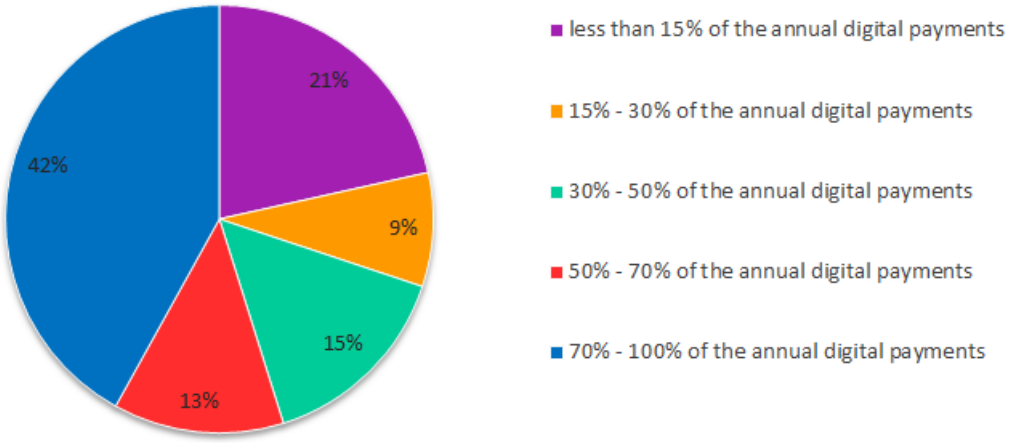


Fig. 43: Percentage of plastic money payments compared to total annual digital payments (businesses that do not accept digital payments are excluded)

Furthermore, the majority (46%) of all the enterprises with the necessary infrastructure for plastic money payments, appear to use Piraeus Bank terminal equipment (Fig.44). Quite a bit behind is National Bank (18%) and Eurobank (16%), while a small percentage of the population (8%) seems to have chosen not to use a bank as a provider but an alternative provider called VIVA.

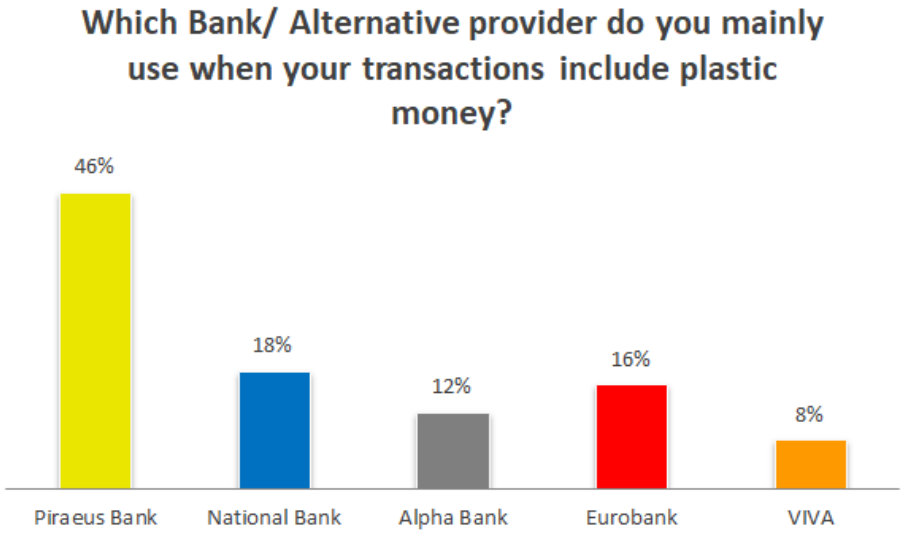


Fig. 44: Bank/other providers that professionals prefer to use in their transactions with plastic money

Given the fact that plastic money is the most popular way of digital payments in Greece, it was considered necessary to ask businesses with POS about the reasons why they chose to adopt plastic money payments (Fig.45).

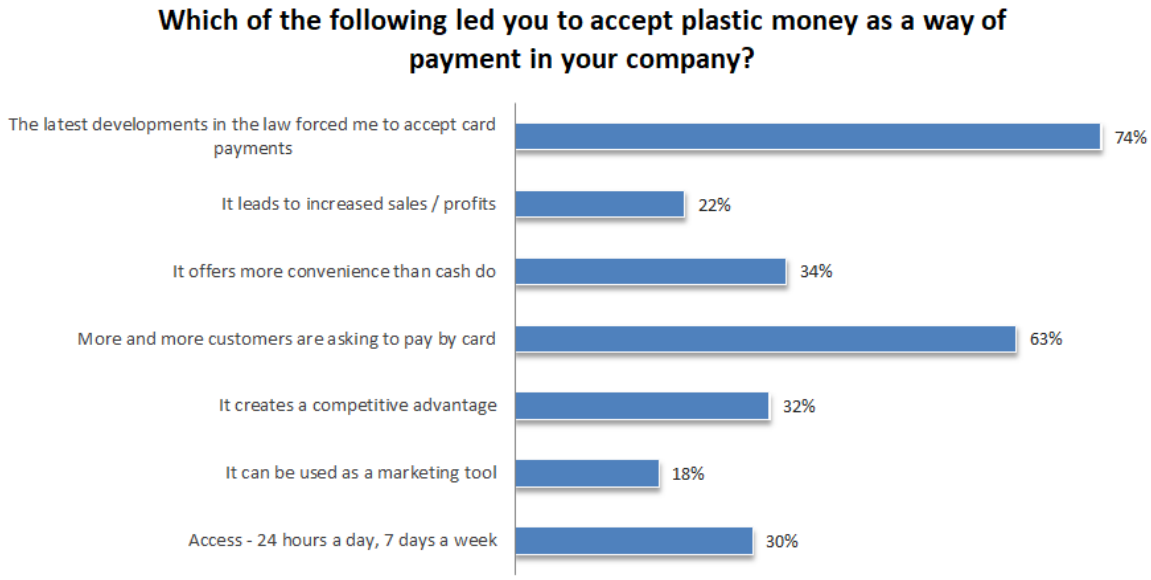


Fig. 45: Reasons that lead businesses to accept payments by plastic money

In this question participants could choose more than one answer. The results showed that an important factor that caused the installation and use of POS, were the changes introduced in Greece by the implementation of the new legislation, as 74% of the population opted for this answer.

Second is the actual demand from customers to pay by card with 63%. Considerably smaller rates have the convenience offered by plastic money in comparison with cash (34%), the possibility of having a competitive advantage having such digital options available (32%) and so on.

A very small proportion of the population said that the information given by paying with plastic money could be used as a marketing tool (18%). From this population, 70% have indicated that more than half of their digital payments during the year, has been made with plastic money. This practically gives us the sense that plastic money is used to a large extent by businesses that know ways they can take advantage of the information digital payments give them. Otherwise, the overall use of plastic money in payments is low, since businesses treat POS as necessary evil, due to the implementation of the new legislation.

The next question is about factors that seem to impede the use of digital payment systems by businesses, in their transactions with their customers. More specifically, the question was as follows: "To what extent do the following factors prevent the use of digital payment systems in transactions with your customers?"

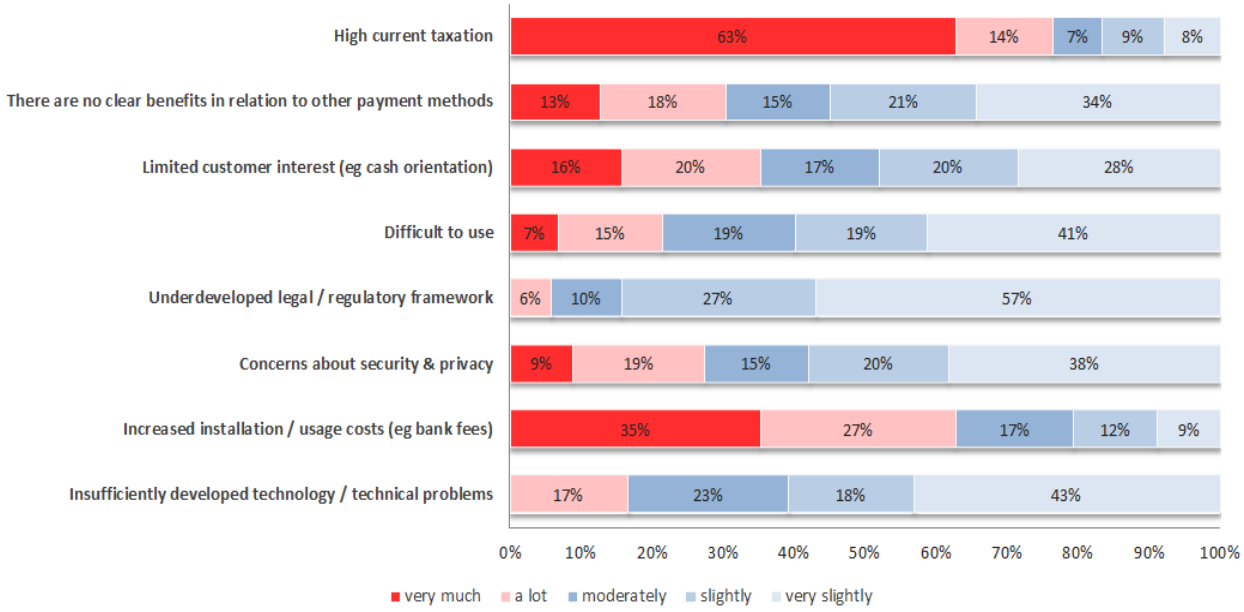


Fig. 46: Factors that prevent businesses to accept digital payments

From the responses presented in Figure 46, it appears that the current high taxation and the increased cost of the installation and use of digital payment systems, are the main factors that mostly negatively affect digital payments. More specifically, 63% of the respondents said that their existing tax obligations, prevents them from using digital payments very much. As professionals are dissatisfied with the existing taxation and cannot cope, they avoid using digital payment systems for 2 reasons. The first reason is that they are usually charged at extra cost per transaction. The second reason is that they cannot conceal their transactions if they are completed in a digital way. Practically, digital payments do not give any space for tax evasion, as opposed to cash. Second in line, comes the percentage of the increased cost of installation and use of such systems, 35% of professionals answered that cost is the factor that prevents them very much and 27% answered a lot. On the other hand, possible technical issues or the potential underdeveloped legal/regulatory framework didn't seem to be a problem, since the majority of participants did not rank them as the major obstacles.

The above questions had to do with how each business deals with its customers. In addition to these, businesses were asked to define how they choose to settle the following business obligations:

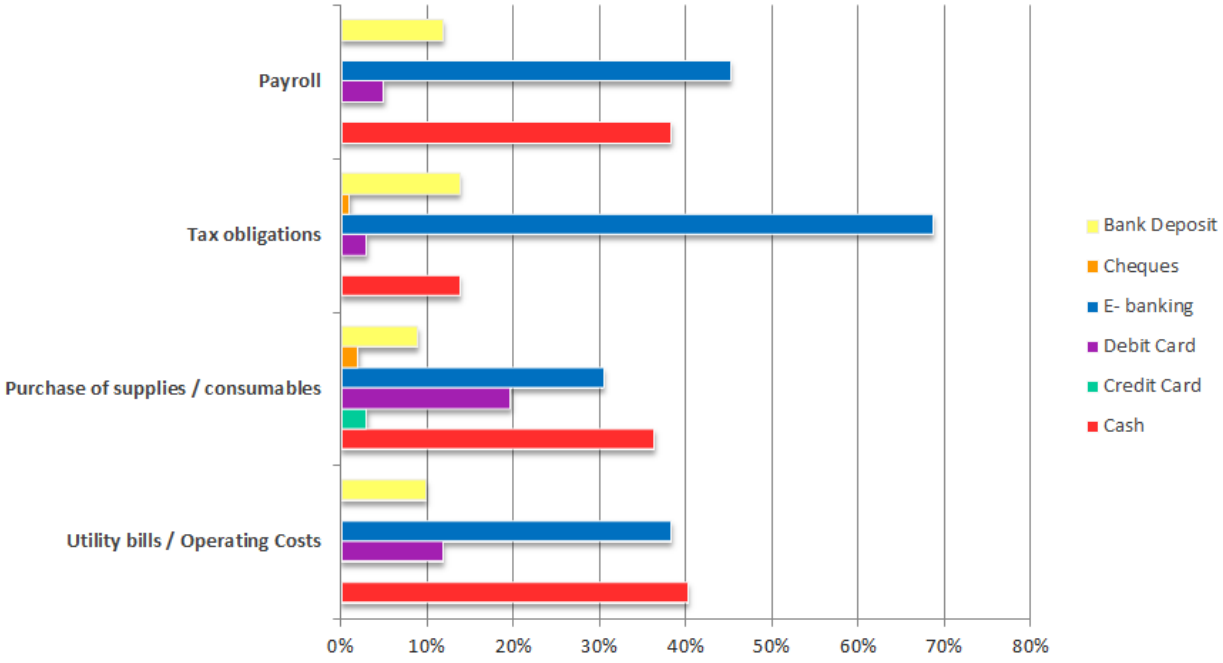


Fig. 47: The way that businesses choose to settle some of their obligations

Based on the chart, the results are obvious. For payroll payments, 45% uses the e-banking service while a large percentage (38%) uses cash. What has to be noted here, is that 90% of businesses that pay salary in cash, are actually individual businesses.

The first way of payment in order to pay taxes is e-banking with 69%, leaving far behind other means like bank deposits and cash with 14% each. In terms of operating costs, professionals seem to mostly use cash (40%) and e-banking (38%). Finally, for supplies, businesses usually choose to pay in cash (36%), by e-banking (30%) or by debit card (20%).

Considering the above, it appears that businesses are using cash even for expenses. Although e-banking appears to be the first choice for the most, there are still businesses that use cash as their primary way of payment.

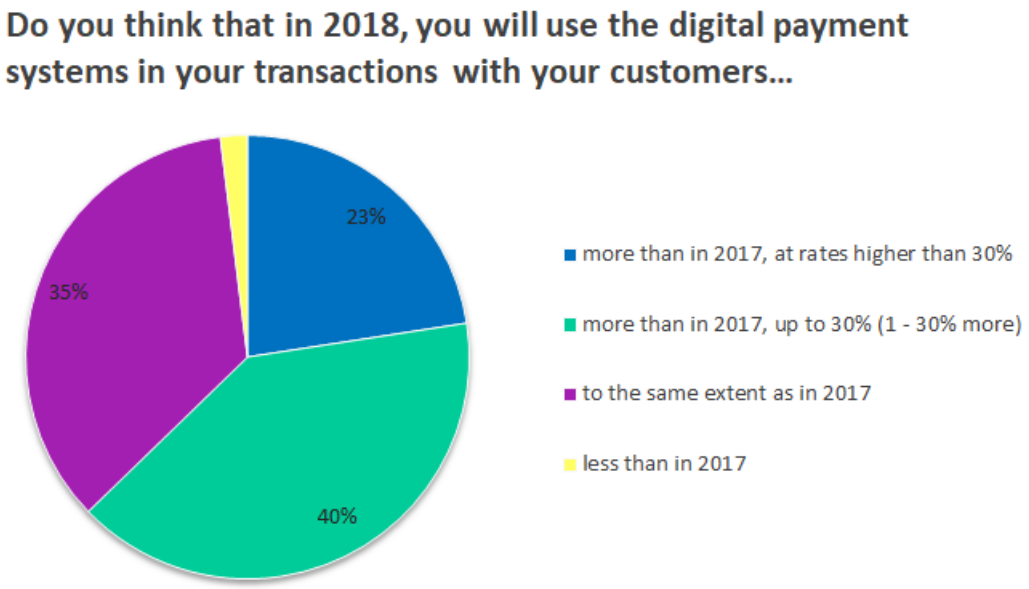


Fig. 48: The provision of the professionals for the use of digital payments in 2018

Based on Figure 48, entrepreneurs expect an increase in the usage of digital payments to 63%. More specifically, 23% of the population believe that digital payments will increase by over 30% compared to this year, while the remaining 40% believe that we will have an increase of 1-30% compared to last year. Finally, 35% of the respondents believe that digital payments will remain at the same level as this year.

With the next two questions (Fig.49, Fig.50), an attempt was made in order to see the customers behavior through the eyes of a professional.

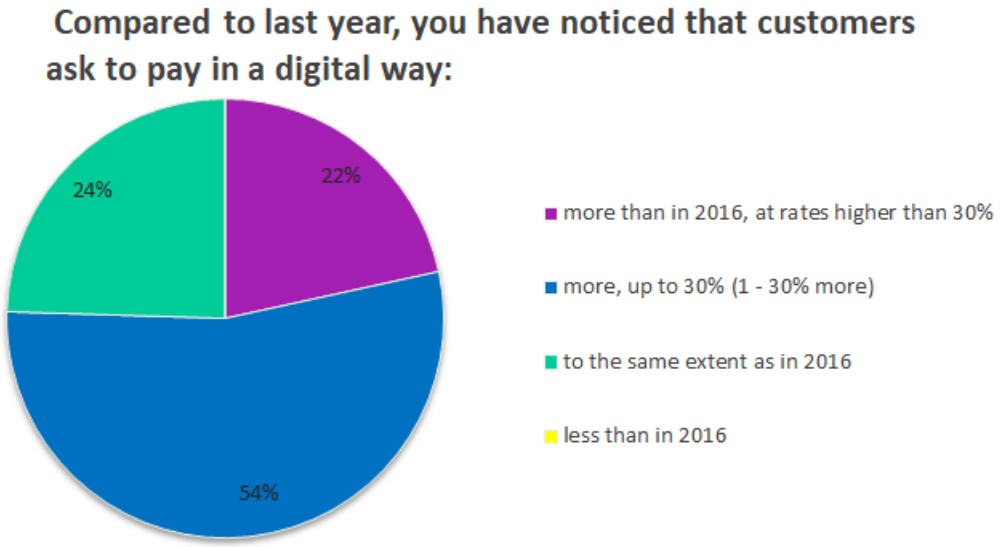


Fig. 49: The use of digital payments by customers in 2017 in comparison with 2016

According to the view expressed by professionals, customers prefer and seek to pay mostly in digital ways, comparing to last year. Indicatively, 54% of professionals answered that their customers are asking 1-30% more than last year to pay digitally, and 22% reported that customers demand has grown more than 30% over the last year.

If we focus on the types of digital payments to see what is the digital system/technology that most of the customers ask to pay with (according to the professionals' view), we will observe the following:

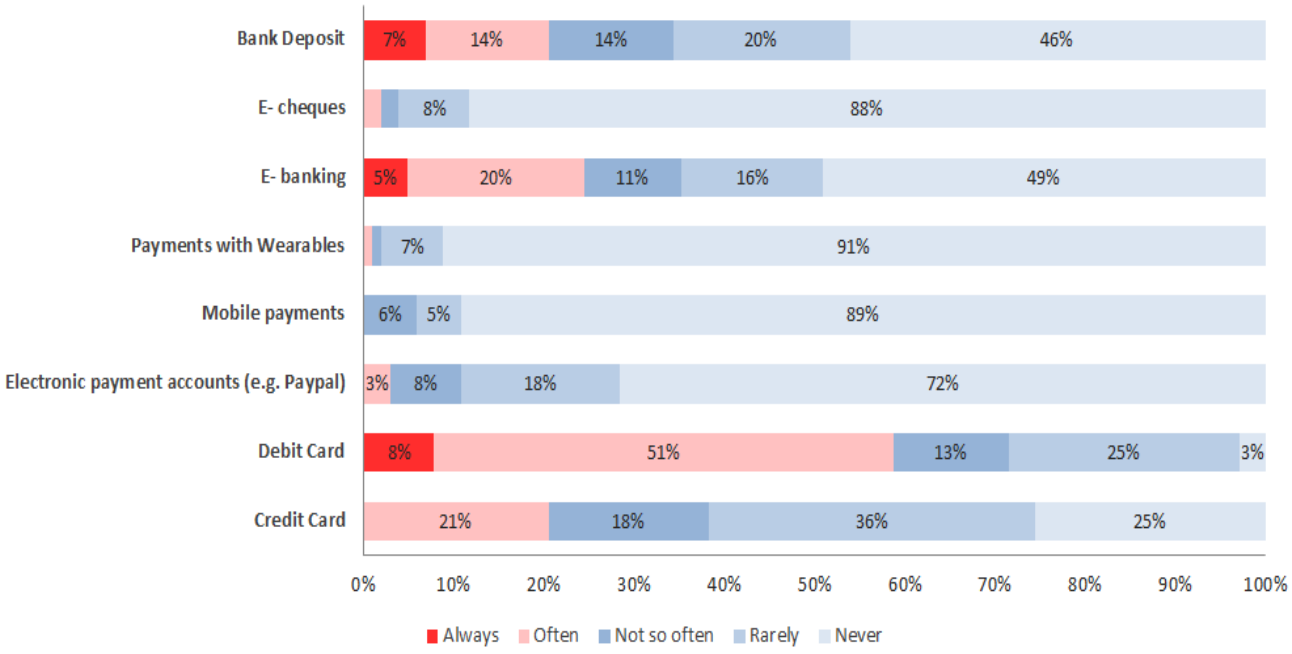


Fig. 50: How often do customers ask to purchase a product/service with the specific digital payment systems?

The general picture shows that most of the customers who decide to pay in a digital way choose mainly plastic money and specifically, debit cards. Moreover, it seems that e-banking and bank deposits are also popular digital payment systems. It is noted that bank deposits were chosen either by professionals whose products/services are mainly addressed to businesses, or by tour operators. Finally, some technologies such as wearables, mobile payments and e-cheques are not much requested as the majority of professionals have said that their customers rarely or never ask for them.

The last section of questions refers to recent legislation on digital payments. Under this legislation, a number of new measures have been implemented that directly affect the professionals/companies. An example of these measures is the mandatory installation of POS terminals in certain business activities. The participants were asked if they agree

with the implementation of the specific measures and the answers (Fig.51) are distributed as follows:

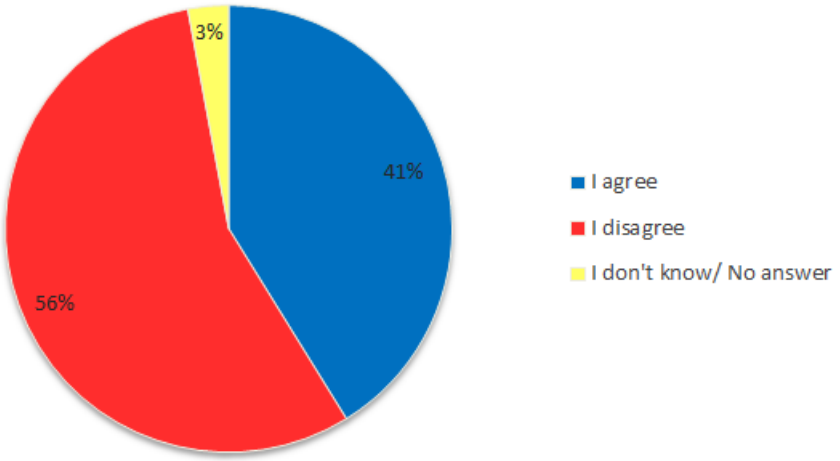


Fig. 51: What is your opinion regarding the imposition of the new measures of Law 4446/2016?

The majority of respondents (56%) showed disagreement with the implementation of the new measures. However, it is extremely large also the proportion of those that seem to be in line with the implementation of the new measures (41%). It is noted that 76% of businesses that said they were in agreement with the new measures stated in a previous question that they believe that digital payments will increase in 2018.

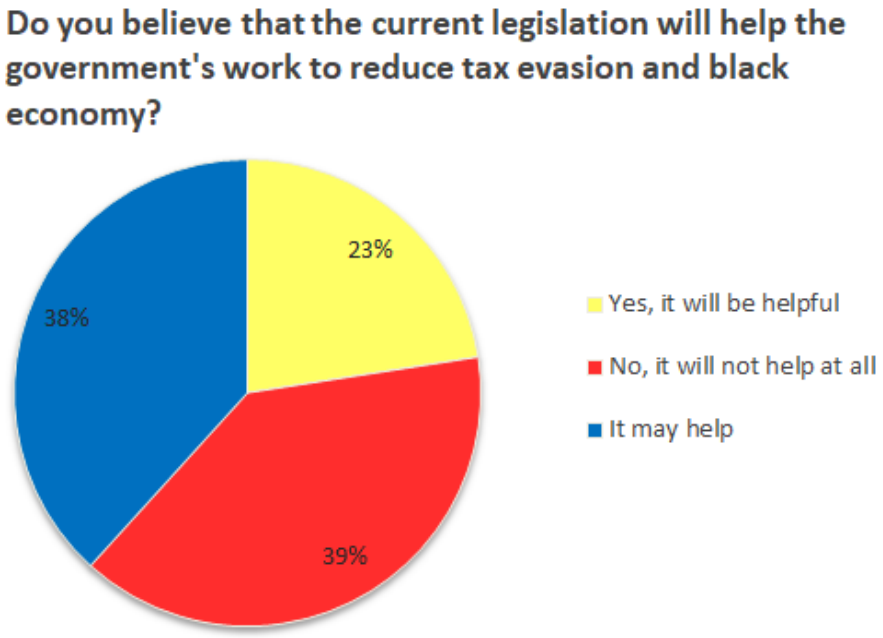
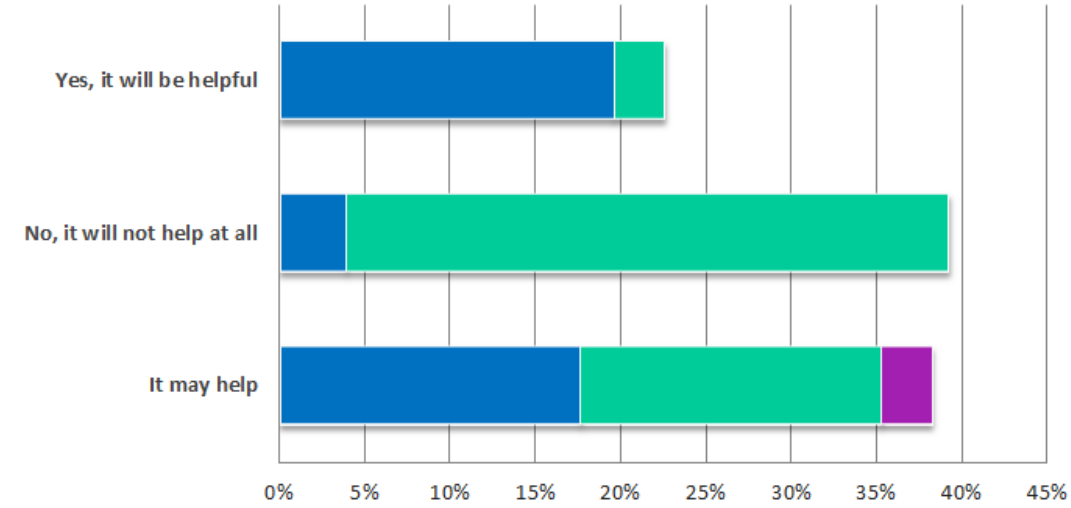


Fig. 52: The extent to which professionals/businesses consider that the current legislation will help government work to reduce tax evasion and black economy

Only 23% of participants seem to believe that these measures will help to improve the economy of the country.

It was impressive the fact that a large percentage of the companies that responded to this question that these measures may help to reduce tax evasion and black economy, in the previous question (Fig.51) had answered that they do not agree with their imposition (Fig.53).



	It may help	No, it will not help at all	Yes, it will be helpful
I agree	18%	4%	20%
I disagree	18%	35%	3%
I don't know/ No answer	3%		

Fig. 53: The opinion of professionals for the new measures and the extent to which these measures will help to combat black economy

Consequently, we can assume that although some enterprises are not in line with the implementation of the current legislation, they realize that the specific measures, that were implemented, can be used as an important tool in order to face the black economy in the long term.

The last question of the questionnaire was about how often some problems arise after the imposition of the use of digital payment systems. Based on the answers (Fig.54) it seems that the dominant problems are the unfair competition, the revenue decrease due to increased transaction/usage fee. These specific problems appear to be the most essential as 32% and 44% of the respondents respectively stated that they have to face these problems "always". Apart from these, however, significant problems are also the delay in the procurement of digital payment systems and the various technical problems that take place often. On the other hand, it seems that not so many problems occur during

the transaction process and most of the professionals do not face any problem/ difficulty in using the systems.

Fig. 54: Frequency of problems that came up after the imposition of the use of digital payment systems

5 General Conclusions & Future Research

The present research was conducted in order to analyse the implementation and usage of digital payments in Greece, focusing more on plastic money. The goal of this project was to examine the degree of acceptance of digital payments by individuals and professionals. Although digital payments are being studied extensively nowadays, the literature presents an important gap. The recent changes in the legislation of Greece may have changed also the view that individuals and professionals have on the digital payments. It was necessary to conduct an updated survey, based on real views of individuals and professionals, to address alternative measures/incentives that could be used to enhance the use of digital payment systems and eliminate tax evasion.

5.1 Conclusions

In recent years, technology has become a part of most of our day-to-day activities. A basic part of this daily life is our transactions and, in particular, payments. Lately, digital payments are gaining ground not only in Greece but also globally. In particular, based on the existing literature, it appears that there are few countries that tend to eliminate totally the use of cash. Based on the research conducted in this dissertation thesis, we can come up with some basic conclusions (related with the digital payments), some of which are the following:

Regarding individuals:

- Technology in general and digital payments more specifically, seem to have been integrated into the daily routine of people in Greece as 76% of the population showed an increase in digital payments compared to 2016. The 46% of them have stated that the rate of this increase was more than 30%.
- Plastic money is the most popular tool of digital payments in Greece, leaving e-banking and electronic payment accounts (e.g. Paypal) far behind. Specifically, 41% of people use plastic money for their payments approximately 11-25 times within a month, while 32% of the population use their plastic card 5-10 times a

month. In addition, the main reasons why individuals sometimes prefer to pay in cash instead of making use of plastic money is the lack of appropriate infrastructure by traders/professionals (as stated by 48% of the population), the privacy protection and the additional cost per transaction.

- There is a big gap between the average of people who are aware of the digital payment systems and the average of those who use them in practice. In particular, 37,7% of the population who know some of the digital payment systems does not use them in their daily lives. One important reason why this happens is the fact that there is often no infrastructure available by the traders/professionals. Specifically, the only digital payment that professionals can support today (most of the time and not always) is the payment using plastic money. The ability to pay by mobile phone, wearables or digital currencies is seldom or never given.
- Nowadays, 43% of the population completes digitally over 60% of their payments in their daily routine. However, there is a large proportion of people (38%) that uses over cash for over 60% of its payments. We can see that there are many who are opposed to the use of digital payment systems. The majority of these people are students or unemployed, which may justify the reduced use of digital payment systems as these categories of people do not have income in their tax return and are therefore not required to show expenses through their digital payments.
- There is a strong correlation between the products/services, their price and the way selected by the individuals to complete the payment for them. Specifically:
    - for expenses such as coffee / drink, food in a tavern / restaurant, taxi and payments of doctors, lawyers etc., the population chooses to pay usually by cash
    - for expenses such as retail goods (e.g. clothing), purchase of fuel and supermarket, the most popular way of payment is the plastic money and in particular, the debit card
    - payments through e-banking are particularly popular in cases of utility bills, payment of taxes, fees, etc.

  In particular, with regard to the value of the product/service, it appears that as the transaction value increases, citizens avoid paying in cash and turn to digital payment technologies. It is noticed that cash usage decreases exponentially as

the transaction value increases. Consequently, the transactions where there is a large margin for the growth of digital payments are those that have low value but are often carried out. In addition to the type and price of the product/service, the transaction protection, security (in case of thief), the addition transaction cost, the speed of the payment process and ease of use also play an important role in the choice of the payment method. On the contrary, the population does not seem to worry about the risk of fake money and the ability to pay later.

- In 2018, it is expected that we will have an increase of about 30% in digital payments (in comparison to 2017). It is noted that the implementation of the new legislation, which promotes e- commerce in Greece, plays an important role for the future use of digital payment systems. Only the 26% of the population seems to disagree with this implementation. However, it is most noteworthy the fact that the number of people who believe that the new measures will help to combat tax evasion and black economy, is approximately the same with the number of those who think that the implementation of those measures will not notably help. Consequently, based on the citizens' view, the implementation of these measures is not enough and further moves have to be made.
- Finally, the most important incentives that would encourage individuals to increase the use of digital payment systems are the Refund of Tax, the discount on utility bills and the pharmaceutical/medical coverage. Reduced interest is observed for the lottery, the implementation of which has recently begun in the country of Greece

Regarding businesses:

- Digital payment systems do not seem to be a basic tool for businesses today in their dealings with their customers, as the 53% of them state that digital payments are less than 30% of their annual payments. In fact, almost 10% of them do not support any digital payments. However, there are also some business sectors where digital payments are the main mode of exchange. These sectors are mainly wholesale, tourist services and clothing/shoes retailing.
- The majority of businesses supporting digital payments, perform most of their transactions using plastic money. More specifically 42% of the businesses complete 70% - 100% of their annual digital payments using plastic money. An important factor that caused the installation and use of POS, were the changes in-

troduced by the implementation of the new legislation, as well as the actual demand from customers to pay by card.

- There is a big gap between the average of companies who are aware of the digital payment systems and the average of those who actually use them. Specifically, 54% of the companies in average are aware of the digital payment systems, but only 28% of them, use them. The most important reasons why professionals do not want to use digital payments are the current high taxation and the increased cost of the installation and use of digital payment systems.
- Businesses are using cash nowadays, even for their obligations and expenses (such as operating costs, payroll etc.). Although e-banking appears to be the first choice for most of the businesses, there are still many of them that use cash as their primary way of payment.
- According to the view expressed by professionals, customers prefer and ask to pay mostly in digital ways, comparing to 2016. Indicatively, 54% of professionals have observed that their customers are asking 1-30% more than last year to pay digitally, and 22% reported that customers demand has grown more than 30% over the last year. Moreover, most of the customers who decide to pay in a digital way choose plastic money (especially debit cards) and e-banking for their transactions. By 2018, it is expected to have an increase in digital payments, compared with 2017. This increase will vary between 1% and 30%.
- The majority of businesses (56%) disagree with the implementation of the new legislation. However, extremely large is also the proportion of those that seem to be in line (41%). In addition, it appears that the majority of businesses believe that the new legislation will help slightly or will not help at all to tackle tax evasion and black economy. Only 23% of businesses seem to believe that law enforcement will actually help. The problems that have arisen for the businesses since the imposition of the use of digital payment systems seem to be many. The most important of these were the unfair competition and the revenue decrease due to increased transaction/usage fee.

Consumers in Greece are quite uncomfortable in changing their habits, especially when it comes to technologies that can substitute their wallet. Important factors include inadequate information, lack of infrastructure and last but not least, the power of habit.

From the point of view of traders, banks and service providers in general, the situation appears to be one-way and digital payments seems to be the only solution for survival in this highly competitive environment.

Digital payments have brought the revolution in transactions. However, no business will replace the use of cash with digital systems if the existing taxation remains the same, if there is no guarantee that consumers will use digital payment systems and if there is no real incentive to increase the use. On the other hand, consumers will not change their habits if they are not convinced that the new technologies are safe and at the same time they offer them flexibility and save them money.

Clearly, in relation to previous years, there has been an appreciable increase in transactions carried out in a digital manner. However, this increase is not enough to move on to the next step, the elimination of the cash use. In order to do this, it is necessary to provide incentives for both consumers and professionals/businesses.

5.2 Limitations and Future Research

The contribution of this research is, in addition to recording and interpreting the findings, the fact that it creates some prerequisites for further research in the field of digital payments.

This dissertation has met many restrictions. Firstly, digital payments have become more known in Greece, in the last few years. Thus, the relative data are fairly few and do not allow for the extraction of certain conclusions. The conclusions that have been extracted until now are inadequate for covering the whole phenomenon which undoubtedly needs to be further observed.

The second restriction was the fact that the situation related with the digital payments in Greece changes continually due to the unstable economic and political situation. This practically means that there is a need for constant monitoring of the phenomenon and thus, a future research will certainly give more substantial and satisfactory answers.

The final restriction has to do with the number of the participants in the quantitative research. For the purposes of this project the questionnaires were answered by 155 individuals and 102 companies. The main reason for limiting the number of participants was the need to conduct the research in specific timeframes. Future research should examine a larger sample in order to extract conclusions, with greater precision and reliability.

Moreover, in a relevant future project, the data given from the Banks of the country could be used. In particular, banking organizations can have a very good picture of their customers' (businesses') transactions and the number and value of the purchases that are made through POS machines. This information could help to extract extremely useful conclusions in the future in order to observe the progress of digital payments over the years.

An interesting factor that should be investigated in any future attempt is whether the new legislation along with the imposition of the new measures actually helped to restrict problems such as black economy and tax evasion.

Last but not least, the most important issue is to understand which are the incentives that could encourage people (both companies and individuals) to use digital systems in their transactions. Thus, it would be particularly useful to have a research in the future that will focus entirely on this issue. It is noted, that in this case it may be necessary to focus on each type of business or person separately (based on specific characteristics) in order to provide useful conclusions.

In any case, the subject of digital payments in Greece is in progress, it influences the country's evolution and is of particular interest.

Bibliography

[1] H.-C. Yu, K.-H. Hsi and P.-J. Kuo, "Electronic payment systems: an analysis and comparison of types," *Technology in Society*, no. 24, pp. 331-347, 2002.

[2] National Payments Corporation of India, "Unified Payments Interface (UPI)," CIPL, [Online]. Available: http://www.npci.org.in/UPI_Background.aspx. [Accessed 10 August 2017].

[3] National Paymets Corporation of India, "Frequently asked Questions by Banks for AEPS," [Online]. Available: http://www.npci.org.in/documents/AEPSFAQBank.pdf. [Accessed 17 August 2017].

[4] UPI Payments, "Digital Payments in India 2016-2017: Definition, Types, comparison and Apps," UPI Payments, 2016. [Online]. Available: https://upipayments.co.in/digital-payment/. [Accessed 17 August 2017].

[5] Allied Business Intelligence, Inc, "Wearable Device Market Share and Forecasts," ABI, [Online]. Available: https://www.abiresearch.com/market-research/product/1027588-wearable-device-market-share-and-forecasts/. [Accessed 10 August 2017].

[6] Smart Payment Association, "Wearable tech: a growing payment opportunity," Smart Payment Association, 2017.

[7] M. C. Timurb and Ö. Durguna, "The Effects of Electronic Payments on Monetary Policies and Central Banks," *Procedia - Social and Behavioral Sciences*, no. 195, p. 680 – 685, 2015.

[8] D. Frisby, Bitcoin, The Future Of Money?, Unbound, 2014.

[9] GXS, "E-Invoicing Basics," OpenText Corporation, 2017. [Online]. Available: http://www.einvoicingbasics.co.uk/. [Accessed 14 August 2017].

[10] Federal Deposit Insurance Corporation, "Safe Internet Banking," FDIC, 28 July 2014. [Online]. Available: https://www.fdic.gov/bank/individual/online/safe.html. [Accessed 16 August 2017].

[11] BCG- The Boston Consulting Group Inc. & Google India Private Limited, "Digital Payments 2020," India, 2016.

[12] Euromonitor International, "Consumer Card Transactions Overtake Cash Payments for the First Time in 2016," Euromonitor International, 22 September 2016. [Online]. Available: http://blog.euromonitor.com/2016/09/consumer-card-transactions-overtake-cash-payments-first-time-2016.html. [Accessed 24 August 2017].

[13] Accenture Consulting, "2016 North America Consumer Digital Payments Survey," Accenture, 2016.

[14] M. Porter, Competitive Strategy, New York: Free Press, 1998.

[15] E. Breedveld, B. Meijboom and A. Roo, "Labour supply in the home care industry: a case study in a Dutch region," *Health Policy,* vol. II, no. 76, pp. 144-155, 2006.

[16] G. Karagiannopoulos, N. Georgopoulos and K. Nikolopoulos, "Fathoming Porter's five forces model in the Internet era," *The Journal of Policy Regulation and Strategy for Telecommunications,* vol. VI, no. 7, pp. 66-76, 2005.

[17] T. Dahlberg, N. Mallat, J. Ondrus and A. Zmijewska, "Past, present and future of mobile payments research: A literature review," *Electronic Commerce Research and Applications,* no. 7, pp. 165-181, 2008.

[18] Payments Cards and Mobile LLP & Accourt payments specialists, "Digital Payments Report 2016," Payments Cards and Mobile LLP, 2016.

[19] S. Chishti and J. Barberis, "FinTech Innovation for Wearables," in *The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries*, Chichester, UK, John Wiley & Sons, Ltd, 2016.

[20] Juniper Research Ltd, *Contactless Payments,* Hampshire, UK: Juniper Research Ltd, 2016.

[21] Research and Markets, "India Mobile Wallet Market Forecast and Opportunities, 2020," Research and Markets, India, 2015.

[22] D. Yu and B. Youra, *No One Is Winning the Battle for Digital Wallet Customers,* Gallup, 2015.

[23] M. Donnely, "Payments in the digital market: Evaluating the contribution of Payment Services Directive II," *Computer Law & Security Review,* no. 32, pp. 827-839, 2016.

[24] B. o. Greece, "Bank of Greece," [Online]. Available: http://www.bankofgreece.gr/BoGDocuments/%CE%A0%CE%94_33-2000-%CE%94%CE%B9%CE%B1%CF%83%CF%85%CE%BD%CE%BF%CF%81%CE%B9%CE%B1%CE%BA%CE%AD%CF%82_%CE%BC%CE%B5%CF%84%CE%B1%CF%86%CE%BF%CF%81%CE%AD%CF%82_%CF%80%CE%B9%CF%83%CF%84%CF%

8E%CF%83%CE%B5%CF%89%CE%BD.pdf. [Accessed 10 September 2017].

[25] N. p. house, “General Secretariat for Consumer,” [Online]. Available: http://www.efpolis.gr/el/library2.html?func=fileinfo&id=37. [Accessed 10 September 2017].

[26] B. o. Greece, "Bank of Greece," [Online]. Available: http://www.bankofgreece.gr/BoGDocuments/ΠΣΝΠ_050_Καθορισμός%20πλαισίου%20επίβλεψης%20συστημάτων%20πληρωμών.pdf. [Accessed 10 September 2017].

[27] B. o. Greece, "Bank of Greece," [Online]. Available: http://www.bankofgreece.gr/BoGDocuments/ΠΔ.ΤΕ_2501-31.10.2002_Ενημέρωση%20των%20συναλλασσομένων%20με%20τα%20πιστωτικά%20ιδρύματα.pdf. [Accessed 10 September 2017].

[28] N. p. house, "Εθνικό Τυπογραφείο," [Online]. Available: http://www.et.gr/idocs-nph/search/pdfViewerForm.html?args=5C7QrtC22wFHp_31M9ESQXdtvSoClrL847AG_mgQA5p5MXD0LzQTLWPU9yLzB8V68knBzLCmTXKaO6fpVZ6Lx3UnKl3nP8NxdnJ5r9cmWyJWelDvWS_18kAEhATUkJb0x1LIdQ163nV9K--td6SIublPCLjp8IStNGDDwwkJAF2HWyJQMvTPJG2z2W7GpOVg. [Accessed 10 September 2017].

[29] Foundation for Economic and Industrial Research IOBE, *Digital payments and tax revenues in Greece*, Athens: Foundation for Economic and Industrial Research IOBE, 2015.

[30] Euromonitor International, "Financial cards and payments in Greece," Euromonitor International, 2016.

[31] GlobalData, "The cards and payments Industry in Greece: Emerging trends and opportunities to 2020," Report Linker, 2016.

[32] J. Papadimitriou, Περιγραφική Στατιστική, Παρατηρητής, 2001.

[33] A. Oppenheim, Questionnaire Design, Interviewing and Attitude Measurement, Continnuum-3PL, 1998.

[34] C. Javeau, Η έρευνα με ερωτηματολόγιο, Τυπωθήτω, 2000.

Appendices

Appendix I: Questionnaire questions (Consumers)

SECTION A – Demographics

Q1. Gender

☐ Male ☐ Female

Q2. Age

☐ under 18 years old ☐ 26 – 35 ☐ 51 – 65

☐ 18 – 25 ☐ 36 – 50 ☐ over 65 years old

Q3. Employment Status

☐ Student ☐ Private Sector Employee

☐ Unemployed ☐ State Employee

☐ Retired ☐ Self- Employed

Q4. Educational Background

☐ Primary Education ☐ Bachelor Degree

☐ Secondary Education ☐ Master/ PhD Degree

☐ High School Diploma ☐ Private school Graduate (Institute for Vocational Training)

SECTION B – Use of Digital Payment Systems

Q1. Which of the following systems/ types of digital payments do you know?
(you can choose more than one systems)

- ☐ E- cheques
- ☐ Digital Currencies
- ☐ Mobile Payments
- ☐ Plastic Money
- ☐ Payments with Wearables
- ☐ E- banking
- ☐ Electronic payment accounts (e.g. Paypal)

Q2. Which of the following do you use?
(you can choose more than one)

- ☐ E- cheques
- ☐ Digital Currencies
- ☐ Mobile Payments
- ☐ Plastic Money
- ☐ Payments with Wearables
- ☐ E- banking
- ☐ Electronic payment accounts (e.g. Paypal)

Q3. In your daily routine, in what proportion of cash and digital media would you say that you are making your payments? *(please choose only one of the following)*

- ☐ almost all my payments are digital
- ☐ over 60% of my payments are completed digitally and the rest with cash
- ☐ about half of my payments are completed with cash and the rest in digital form
- ☐ over 60% of my payments are completed with cash and the rest in digital form
- ☐ I use cash for almost all of my payments

Q4. Compared to last year, do you think that you are having:
(please choose only one of the following)

- ☐ more digital payments at rates higher than 30% (+ 30% compared to 2016)
- ☐ up to 30% more digital payments (from 1% to 30%)
- ☐ the same number of digital payments as in 2016
- ☐ fewer digital payments

Q5. Do you think that in 2018 you will have:
(please choose only one of the following)

☐ more digital payments than in 2017, at rates higher than 30% (+ 30%)

☐ more digital payments than in 2017, up to 30% (1 - 30%)

☐ the same number of digital payments as in 2017

☐ fewer digital payments than in 2017

Q6. How often do you estimate that you are using plastic money (credit / debit cards) for your payments within a month? *(please choose only one of the following)*

☐ less than 5 times ☐ 16 – 25 times

☐ 5 – 10 times ☐ more than 25 times

☐ 11 – 15 times

Q7. When purchasing a product/service from a store/business/professional, how often do you have the ability to run your purchases with the following digital payment technologies? *(please choose one answer for every row)*

	Always	Often	Not so Often	Rarely	Never
Payment with plastic money					
Payment with mobile phone/smart watch etc					
Payment with digital currency (eg Bitcoins)					

SECTION C – Evaluation of Digital Payment Systems

Q1. What is your preferred payment option, when purchasing the following goods/services? *(please choose one answer for every row)*

	Debit card	Credit card	Cash	E-banking	Cheque	Mobile Payment	Bank Deposit	Electronic payment accounts (e.g.Paypal)
Food in a tavern/restaurant								
Coffee/Drink								
Concert Tickets								
Taxi								
Purchase of fuel								
Retail goods (clothing, household items, etc.)								
Supermarket								
Payment of utility bills								
Government Services (payment of taxes, fees, etc.)								
Purchase of services (doctors, lawyers, etc.)								

Q2. Please select your preferred payment method, when making payments of different values: *(please choose one answer for every row)*

	Debit card	Credit card	Cash	E-banking	Cheque	Mobile Payment	Bank Deposit	Electronic payment accounts (e.g.Paypal)
less than 20 € (or equal)								
20 € - 100 €								
100 € - 250 €								
250 € - 500 €								
500 € - 1.000 €								
over 1.000 €								

Q3. Please rate the following, in terms of importance to you, when you make a decision about which way to use for your payments. *(please choose one answer for every row)*

	Very high	High	Medium	Low	Very Low
Ability to pay, regardless of location					
Transaction Protection					
Credit (pay later)					
Ease of use					
Security (in case of thief)					
Speed of payment process					
Cost of payment					
Tax (e.g tax-free law)					
Risk of counterfeit money					
Privacy of information					
Loyalty Rewards					
Budget Management (Monthly Revenues-Expenses)					

Q4. What is the main reason why you prefer to use cash instead of plastic money?

- ☐ There is no relevant infrastructure from the professionals
- ☐ Transaction Security
- ☐ Additional cost per transaction
- ☐ Privacy protection
- ☐ Lack of know-how

SECTION D – Recent Legislation

Q1. Under the current legislation on Promotion of Electronic Transactions, a number of new measures have been imposed in the area of digital payments *(eg "tax-free building" through digital transactions, mandatory use of digital systems for payments over 500 €)*.

Do you agree with the implementation of these measures?

☐ I agree ☐ I disagree ☐ I don't know / No answer

Q2. How much do you consider that the current legislation will help the government's work to reduce tax evasion and black economy?

☐ very much ☐ slightly ☐ it will not help at all

☐ enough ☐ very slightly ☐ I don't know/No answer

Q3. What incentives do you think would encourage people to use digital payments and would help to "fight" against tax evasion? *(List the following options in order of priority: 1 for the first, 2 for the second, 3 for the third, 4 ..., 5 ...)*

☐ Refund of tax if the digital transactions exceed a certain percentage

☐ Offering a discount on utility bills if electronic transactions exceed a certain percentage

☐ Enhancement of electronic lottery

☐ Offering of medical insurance when someone purchases tickets for public transport from the web

☐ Offering increased pharmaceutical / medical coverage according to the number of digital transactions

Appendix II: Questionnaire questions (Businesses)

SECTION A – Business Information

Q1. Please select the size of your company based on the following separation:

- ☐ Large *(It employs more than 25 people or its annual turnover exceeds 10,000,000 €)*
- ☐ Medium *(It employs 11-25 people or its annual turnover is 2,000,000 € - 10,000,000 €)*
- ☐ Small *(It employs 6 to 10 people or its annual turnover is 500,000 € - 2,000,000 €)*
- ☐ Very small *(It employs 2 to 5 people or its annual turnover is 200,000 € - 500,000 €)*
- ☐ Too Small *(It employs 1 person as staff or annual turnover is up to 200,000 €)*

Q2. Your company operates in the field of:

- ☐ Tourist Services
- ☐ Wholesale Trade
- ☐ Food Retailing
- ☐ Processing
- ☐ Household items
- ☐ Clothing/Shoes Retailing
- ☐ Restaurant/Coffee shop
- ☐ Repair Services (Plumping/Electrical works etc.)
- ☐ Transport Service provision (Medical/Legal/Engineering/Accountant etc.)
- ☐ Other Option

Q3. Legal Form of the company

- ☐ Individual enterprise
- ☐ S.A. (corporation)
- ☐ Cooperative society
- ☐ General Partnership
- ☐ Private Equity Firm
- ☐ Limited Liability Company (LLC)
- ☐ Other legal forms

Q4. Your products/services are sold/directed to:

- ☐ Companies
- ☐ Individuals
- ☐ Both Companies and Individuals

SECTION B – Use of Digital Payment Systems by businesses

Q1. Which of the following systems/types of digital payments do you know?
(you can choose more than one systems)

- ☐ E- cheques
- ☐ Digital Currencies
- ☐ Mobile Payments
- ☐ Plastic Money
- ☐ Payments with Wearables
- ☐ E- banking
- ☐ Electronic payment accounts (e.g. Paypal)

Q2. Which of the following systems can you support in your business?
(you can choose more than one systems)

- ☐ E- cheques
- ☐ Digital Currencies
- ☐ Mobile Payments
- ☐ Plastic Money
- ☐ Payments with Wearables
- ☐ E- banking
- ☐ Electronic payment accounts (e.g. Paypal)
- ☐ None of the above

Q3. What is the percentage of digital payments, based on the annual payments made to your business?

- ☐ digital transactions are not supported
- ☐ less than 15% of the annual payments
- ☐ 15% - 30% of the annual payments
- ☐ 30% - 50% of the annual payments
- ☐ 50% - 70% of the annual payments
- ☐ 70% - 100% of the annual payments

Q4. What percentage of the annual digital payments (that your customers make in your company) is made with plastic money?

- ☐ digital transactions are not supported
- ☐ less than 15% of the annual digital payments
- ☐ 15% - 30% of the annual digital payments
- ☐ 30% - 50% of the annual digital payments

☐ 50% - 70% of the annual digital payments

☐ 70% - 100% of the annual digital payments

Q5. Which Bank/ Alternative provider do you mainly use when your transactions include plastic money?

☐ Piraeus Bank

☐ National Bank

☐ Alpha Bank

☐ Eurobank

☐ VIVA

☐ digital transactions are not supported

Q6. Which of the following led you to accept plastic money as a way of payment in your company?

☐ The latest developments in the law forced me to accept card payments

☐ Access 24hours a day, 7 days a week

☐ It can be used as a marketing tool

☐ It creates a competitive advantage

☐ More and more customers ask to pay by card

☐ It offers more convenience than cash do

☐ It leads to increased sales/profits

☐ Payments with plastic money are not supported in my company

Q7. To what extent do the following factors prevent the use of digital payment systems in the transactions with your customers?

	Very much	A lot	Moderately	Slightly	Very Slightly
Insufficiently developed technology/technical problems					
Increased installation/usage costs					

	Very much	A lot	Moderately	Slightly	Very Slightly
(eg bank fees)					
Concerns about security & privacy					
Underdeveloped legal / regulatory framework					
Difficult to use					
Limited customer interest (eg cash orientation)					
There are no clear benefits in relation to other payment methods					
High current taxation					

Q8. Please note below the way you choose to settle the following business obligations:
(please choose one answer for every row)

	Cash	Credit Card	Debit Card	Electronic payment accounts (eg.Paypal)	Mobile payments	E-banking	Cheques	Bank Deposit
Payroll								
Tax obligations								
Purchase of supplies /consumables								
Utility bills /Operating Costs								

Q9. Do you think that compared to this year, in 2018, your customers will use the digital payment systems:

☐ Less than in 2017

☐ To the same extent as in 2017

☐ More than in 2017, up to 30% (1 – 30% more)

☐ More than in 2017, at rates higher than 30%

SECTION C – Customers' acceptance of digital payment systems

Q1. Compared to last year, have you noticed that customers ask to pay in a digital way:

☐ Less than in 2016

☐ To the same extent as in 2016

☐ More than in 2016, up to 30% (1 – 30% more)

☐ More than in 2016, at rates higher than 30%

Q2. How often do customers ask to purchase a product/service with the following digital payment systems?

	Always	Often	Not so Often	Rarely	Never
Credit Card					
Debit Card					
Electronic payment accounts (e.g. Paypal)					
Mobile payments					
Payments with Wearables					
E-banking					
E-cheques					
Bank Deposit					

SECTION D – Recent Legislation

Q1. Under the current legislation on Promotion of Electronic Transactions, a number of new measures have been imposed in the area of digital payments *(eg. mandatory use of digital systems for payments over 500 €)*.

Do you agree with the "enforcement" of the use of digital payment systems in businesses?

☐ I agree ☐ I disagree ☐ I don't know / No answer

Q2. Do you believe that the current legislation will help the government's work to reduce tax evasion and black economy?

☐ Yes, it will be helpful

☐ No, it will not help at all

☐ It may help

Q3. How often do the following problems arise after the imposition of use of digital payment systems?

	Always	Often	Not so Often	Rarely	Never
Delay in the procurement of digital payment systems					
Technical problems (eg system connectivity failure)					
Difficult to use					
Revenue decrease due to increased transaction/usage fee					
Problems during the transaction process (eg incorrect debits/account credits, credit delays,etc.)					
Unfair competition, as our competitors accept mainly cash					