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## EVOLUTION OF PAYMENT METHODS IN GREECE – DETERMINANTS OF THEIR USE

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*From society's point of view and the exchange of products, metal and gold, till the digital era of cryptocurrencies mediated a lot of phases in payment methods that Greeks used. In this assignment, means of payment are presented and analyzed through the years, differentiations and trends are examined as well as Greek citizens', and not only, choices are commented according to the means of payment they use via statistical reports conducted by related entities. The aim of this primary research that has been developed in Delta Municipality is the specifying of factors which have an impact on users' payment choices and also the discovery of a relation probably between those choices and those of sex, age, level of income or level of education. Findings show the general dominations of debit cards in all ages and level of income, for each kind of transaction (natural or digital), confirming the raise of plastic money in Greece after capital controls' arrival. Speed, directness and convenience are the characteristics which are necessary to be fulfilled by a means of payment, but also another modern reason and necessity of plastic money is the new tax-free builder regime. Furthermore, loyalty programs that cards provide most of the time are really tempting. There is no familiarization neither with cryptocurrencies nor the new contactless media, but only for the concept, independently of age. Finally, grey payments are still a concerning issue, which are preferred by everyone verifying the Greek reality.*

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## Introduction

According to annotated bibliography, money should not be confused either with income or with wealth. It is a static concept, a definite amount at a definite time moment. „Money is anything that is accepted for products' and services' payment or debt pay-off" (Noulas, 2015). Means of payment have changed radically through the years and nowadays we also have plastic, electronic and digital money too. In total, there are eight payment generations in Greek history. In this paper we will discuss each generation's features, advantages and disadvantages as well as trends which foreshadow future updates in the payment field. Moreover, cryptocurrencies are probably money's future (Papadopoulos, 2018) and their consequences are a recent emerging issue. We enumerate dangers and reservations that arise from the dominance of Bitcoin. The aim of this paper is to seek which criteria affect consumers' payment choices and to which scale. Via the research conducted we will analyze consumers' preferences in physical, electronical and mobile payments dependent upon their age, sex, level of education and income. We examine if there is a relation between the respondents' preferences and the above factors and whether the results agree with global payment statistics. Finally, we will arrive at conclusions and future research recommendations.

## 1. Literature Review

To begin with, it is of major importance to refer to money's attributes which are (Begg, Fischer, & Dornbusch, 2003): acceptability, durability, homogeneity, divisibility, portability. This means respectively that it needs to be accepted by all members of a society, to withstand the wear and tear of being passed through, to be interchangeable (each monetary unit is the same as every other unit), to be able to be divided into small units and to be easy to carry. According to Grolier encyclopedia (Jackson, 1991), money cannot be defined as a specific object but it is defined from the functions that it serves. The four functions are the following (Stiglitz & Walsh, 2009):

- A medium of exchange
- A measure of value
- Store of Value
- Standard of Deferred Payment

The first two are the primary functions of money, and the last two are called secondary functions of money. These functions must be satisfied from an entity to be considered as money (Heffernan, 2005).

### **1.1. The eight payment methods' generations**

Money as a traditional payment method did not always have its current form (Tsarou, 2007). Throughout the years people used different means to represent the role of money. The first means of payment were things with intrinsic value (Cecchetti & Schoenholtz, 2015), for example animals or Chinese silk, Norwegian butter, Venice salt, Fiji whale teeth. All these things had innate value even if they had never been used as actual money. This condition where „I give a commodity and I get a commodity” constitutes the first and most primitive means of payment generation, the trading action in a barter society (Zahariadis-Souras, 2002). However it is inflexible and difficult as a means of payment (Stergiotis, 1991) because it should fulfill the function as a measure of value and store of value, which is impossible in case of an animal as it cannot be divided into submultiples or it will die.

As a matter of fact, at the second generation precious objects like gold are being used. Gold is widely acceptable, quite durable and can be cut into pieces without any loss of value. Metal reserves had a very high value which was difficult to be lost or damaged as well. As a result metal coins, like the bronze „ovolos”, form the third payment generation. The above three generations can be stated that consist inclusive money: animals, oil, oysters, gold, metals were being used as money having their own intrinsic value equal to their monetary value (Zahariadis-Souras, 2002).

Due to the fact that those precious metals could be stolen or lost, people resorted to vaults to keep them safe. So goldsmiths, like primitive bankers (Zahariadis-Souras, 2002), issued paper certifications when possessors needed a certain amount to perform a payment in order to transfer only the paper to seller without withdrawing the valuable metal. This is the preface of today's bank notes and consequently paper money is the next fourth generation. This generation has double monetary character as it is both a monetary entity, which implements payment units into monetary value units, and a monetary instrument while it allows transfer of payment units from one property to another (Menais & Mathias, 2001). Moreover, money does not have intrinsic value anymore and it is called fiat money from now on (Noulas, 2015) as it just represents value.

Afterwards, checks, bills of exchange and payment orders in general compound scriptural money, which constitutes the fifth payment generation. Scriptural money is expressed as a demand of the payee against a bank in which the foresaid payee owns a bank account (Kahrimanis, 2001). It is a simplified banking entity but is not a monetary instrument as it cannot deliver tangible possession (Tsarou, 2007).

Sixth payment generation is characterized by plastic money. Plastic money acts as a substitute of cash and contains credit card, debit card, prepaid card etc. Credit cards first appeared in Greece in the 1980's and contributed to the raise of economic activity (Sinanioti-Maroudi & Farsarotas, 2005). Historically, the first credit card ever was the 1949 Diners Club (Hristopoulos & Ntokas, 2012).

Electronic money signifies the seventh payment generation and electronic payments in general. Electronic money and e-shops have provoked great changes globally and are developing and transfiguring day by day. E-payments are concerned in any payment to a company, bank or public institute through an electronic network using contemporary technology (Somaraki & Hanssens, 2003). They are really popular due to the fact that they are fast and geographically limitless (Muller, 2007). Clearing used to be a process of an informal partnership where an electronic mediator is located between two counterparties for an electronic transaction, seller and buyer, and matches all the purchase and sale orders with their involved parties without any physical contact (Domanski, Gambacorta, & Picillo, 2015). Nowadays this mediator does not exist because e-banking has simplified all the procedures (Zavitsanaki, 2016).

Finally, cards that have microchip and stores information about their holders are named smart cards. They require special POS (Point Of Sale) to interact with it in an intangible or contactless way. Significantly, the first Greek smart card was the calling card supported by OTE – communication provider - (Stathopoulos, 1995). This is the eighth generation. According to Profis (Profis, 2014) next cards will just be microchips and tags integrated in smartphones that will demonstrate the role of a contactless card using NFC (Near Field Communication) technology.

## **1.2. Cryptocurrencies: the ninth generation?**

Despite the fact that contemporary economy is characterized by inequalities and poverty, rapid technological evolution is noticed (Leventidis, 2018). It is definitely hard to predict how many payment generations are going to rise in the future. Petty questions for money are posed, but not of petty importance (Eriotis, 2018).

Bitcoin is a form of electronic cash and was created in 2009 as decentralized digital currency on a peer-to-peer network. It was released as open-source software and its creator is a person or a group of people under the nickname Satoshi Nakamoto (Davis, 2011). User owns a bitcoin wallet that is installed in their computer or cellphone and has the ability to buy, to use, to accept bitcoin, using bitcoins (Hong, 2018). Bitcoin network shares a big ledger called blockchain that records every transaction.

It provides easy, low cost and tax-free transactions which are encrypted and anonymous (Casu, Girandone, & Molyneux, 2018). However, they are not widely accepted because there is neither central management dependence nor Central Bank's supervision (Papadamou, 2018). Being liberal is good but global economy should always be taken under consideration (Kottaridi, 2018). Furthermore, they are being used for illegal things like criminal activities, money laundering, terrorism funding. These are the reasons why Bitcoin's price flows occasionally, rising and falling. For example, negative impact is provoked when bitcoin users try to avoid taxation, but the opposite happens when Facebook projected Bitcoin ads (Chang, 2018) and also when Microsoft and Dell

accepted Bitcoin as a payment method (Davila, 2018). There are around 700 cryptocurrencies that are tend to hedge Bitcoin's disadvantages and decrease liquidity risk (Pajpai, 2017) like Litecoin, Ethereum, Zcash, Dash, Monero, Ripple.

In Greek reality there is a questioning whether cryptocurrencies are as new as we think. Ancient Greece's monetary policy has a lot in common with cryptocurrencies' concept (Bitros, 2018). Specifically, Glafkes was a silver currency in Athens, where Athens' mint was supplied silver from an area called Lavrio. There was no Central Bank but the system was efficiently functioning without inflation, and metal's density stayed stable for two centuries. At the end of Peloponnesian war undervalued coins appeared with less silver content and they had to take gold from Zeus' statue in order to mint coins. Then, «Nikofon law» was created which foresaw parallel "good" and "bad" coins circulation, with random silver content sampling from slaves. At the same time, private currencies were in circulation, for small value market and simultaneously big federations circulated local currencies. Can all these incidents be parallelized with nowadays' cryptocurrencies (Kyriazis, 2018)?

However, the defacto monopoly of Central Bank, which is to release banknotes and coins, is put in doubt by cryptocurrencies (Stournaras, 2018). This operation is reflected in Bank's balance sheet raising its liabilities. Greek Central Bank is an Anonymous Company (S.A.) and has the ability to buy assets in order to make profit, the so called seigniorage income (Sigurjohansson, 2018). Central Bank's target is to ensure prices' stability and its individual, institutional and operational independence (Gortsos, 2018). With the dominance of cryptocurrencies, immediate forthcoming changes will arise, like the inadequacy of inflation control and the results will affect commercial banks (Stournaras, 2018). It is still too early for traditional currencies to be replaced and a solution has to be found. Central Bank Digital Currencies (CBDC) or digital currencies released by Central Banks are the quintessence of the new digital era 2.0. (Wong, 2018). The new digital currency will be integrated progressively so as money's composition to be changed (Bjeng, 2018). "E-Drachma" could be potentially a New Greek cryptocurrency, adjustable in Greek reality so as unemployment, low GDP and overtaxation can be fought (Kortsch, 2018).

### **1.3. Statistical payment reports**

After capital controls' enforcement in summer of 2015, Greece faced a difficult economic fluctuation and politic crisis, the known as «Phase II» (Hardouvelis, 2018). The positive outcome of this harsh situation is that usage of plastic money was impressively raised throughout these four consecutive years. Cards are used in transactions 40% more in the first quarter of 2018 than the equivalent of 2017 (Hellenic Bank Association, 2017). This raise is benefiting from the fact that POS were mandatorily placed in retail, that electronic payments are inextricably interwoven with tax-free building, that

the incentives that are given through lottery are really tempting to citizens (Tsipras, 2018). Greeks are using plastic money more and more for under 20€ payments but on the other hand checks are being used less and less in general (Bank of Greece, 2018). Additionally, it is proven that through cards, high revenues from VAT have brought important motility to the market. (Hondroyiannis & Papaoikonomou, 2017).

Useful statistics prove that Greek University students are in favor to cash on delivery for their online purchases despite the extra charges, and prepaid card, PayPal and PaySafe cards are following options for them (Antoniadis, Saprikis, & Poltitis, 2014). Research that conducted taking under consideration the income factor shows that electronic money is preferred to debit cards only for online transactions and by high earners, while low earners choose debit cards for both online and offline transactions (See-To, Papagiannidis, & Westland, 2014).

Quite an incident are also grey or «under the table» payments, especially in health industry (Cohen, 2011). 36% of patients in a public hospital has admitted that they have at least once made an illegal payment, and 74,4 % of women have been involved in informal payments for obstetric services (Kaitelidou, et al., 2012). Unofficial payments are an obstacle in economic indicators in which high leaving costs and low purchasing power are not deflected (Souliotis, et al., 2015). It brings both economic and ethical damage to Greece.

Findings from annual reports show that non-cash transactions are also popular around the world, as there was a 11,2 % raise compared to 2016 with emerging Asia, central Europe, middle East and Africa to be the leads (Capgemini, 2018). It is predicted that developing countries will climb up to 19,6 % till 2020 in plastic money transactions and Electronic and Mobile payments are estimated to cover 32 % of total non-cash transactions globally (Bezhovski, 2016). What is more, debit cards are gaining ground over credit cards as the firsts take over 70,5% of total card transactions. According to Basel III, ratio debit/credit card has shifted from 59:41 to 90:10 in last decade.

## 2. Research Methodology

In this research methodological triangulation is implementing as qualitative and quantitative research is combined (Samanta & Halikias, 2016). The research question is very important to be set from the beginning (Creswall, 2016) and in our case the target is to find the existence of correlation between means of payment choices and factors like age, sex and income. Data was collected by means of a five-section questionnaire administered from June 2018 until August 2018 to residents of Delta Municipality in Thessaloniki, Greece. According to municipality's listing total population amounts to 45.839 residents. The best sample size is calculated and amounts to 381 (Lelakis, 1983) with 5% sampling error and 95% statistical significance. 450 citizens responded out of 600

who questioned and 381 of those answers were chosen to represent the sample according to the proper age stratification. Data analysis was accomplished with Microsoft Excel and SPSS platforms and research is primary descriptive. Prior to its distribution, the questionnaire was pretested in order to find problems about the clarity of questions, and no further changes needed to be done.

### **3. Results & Findings**

Obtained results are going to be presented in categories like those of the questionnaire. Besides first category in which demographic questions are commented, at the rest four different types of payment like physical, electronic, mobile and informal transactions are described. In respect to demographic data, 45,1% are nonpublic employees, 18% are public service employees and 7% are unemployed. 46% are highly education graduates and impressively 26% of respondents are Master graduates (72% in total). Sex and age are uniformly distributed based on sample's population.

#### **3.1 Physical store transactions**

A total 310 out of 381 respondents are debit card owners, whereas only 100 are credit card owners. Debit cards are quite popular in every age and are being used for every day transactions by 45% of sample. If we perform age grading we will discover that older respondents are credit card and cheque book holders as they are high earners and entrepreneurs. At the other extreme, younger are more favor to prepaid cards as there is a specific spend limit and total expenditures can be controlled.

Findings also suggest that debit cards are being chosen as a means of payment in every one of the following shopping categories: supermarket, gas, vacation, devices, clothing except from one, cafés and restaurants. For small value transactions cash is still the king. In general, cash is the second choice as a payment method and the combination of cash and debit card is the third, showing the dominance of debit cards. Noteworthy is the fact that E-banking is being chosen for bill payments because there is less commission charged.

Factors affecting consumers' choices were also examined and this question was really critical. Transaction's speed, ease and instancy play the most significant role, independent of age. Results show that under 25 year old consumers ignore hazards from contactless transactions and are not interested in tax-free building. The 35-46 age scale however, desires to pick a payment method that offers bonus points and a future discount through loyalty programs – very popular in plastic money. The same age group is being influenced by the ability to bargain, which is accomplished only with cash. Therefore, younger are more careless and elder that possibly start or have a family are pursuing cost savings.

### 3.2 Electronic transactions

Regarding e-transactions, 53% has never made one while the rest 47% is mostly composed by people aged between 25 and 34. As we can see the boxplot in Figure 1, women prefer debit card and cash-on-delivery as electronic payment method, whilst men present a variety of options like credit card, debit card, PayPal, E-banking, bank deposit and cryptocurrencies.

In this context, 63% of respondents are familiar with cryptocurrencies concept, when the rest 37% is constituted by both men and women of all age and education groups. Bitcoin is the most famous cryptocurrency as 99% has at least heard of it once. Only 4% of total sample is using cryptocurrencies as a means of payment or as an investment instrument. Young men supported that cryptocurrencies offer anonymity, high profits, speediness, great potentials and that they establish a new market with glorious future, independently of their education.

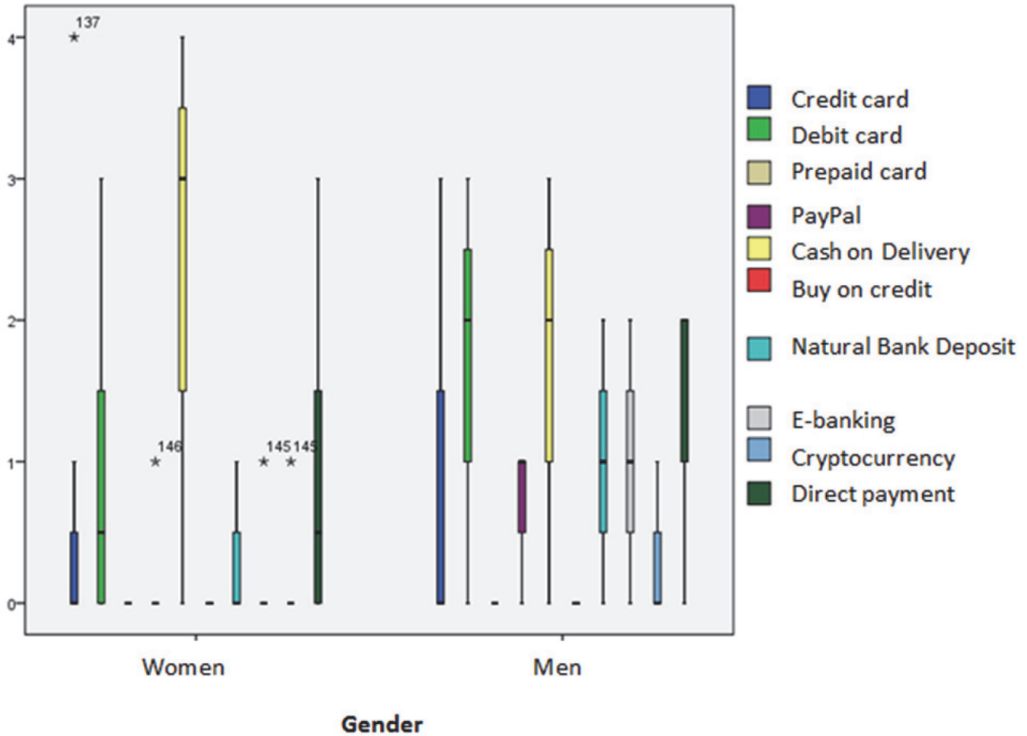


Figure 1. E-payments



### **3.3 Mobile transactions**

Smartphone holders touch 93% of sample and 47% of those supports that is familiar with NFC (Near Field Communication) technology that allows smartphones implement contactless transactions. Sure, as the age rises, so more negative answers are collected. However, 66% would not use their smartphones as a contactless debit card due to the lack of safety and trustiness. Again, the younger are more open to this option against the elder. Finally, about three out of four (72%) have heard of new state-of-the-art payment instruments like smartwatches and wearable paybands. This knowledge is not connected with education level, as most negative answers were given by PhD holders.

### **3.4 Underground economy transactions**

Respondents unanimously agree that they would not always prefer to pay without a receipt by escaping VAT for economic profit. For that matter, they pay legally because they are law-abiding and in order to achieve tax-free building. On the contrary, 97% has paid at least once without taking a receipt, making a «grey» payment, independent of their income. Those «under the table» payments mostly include private tutors, car repair, taxi, plumbing and health services.

## **Conclusions & Future Research**

All in all, theory summarizes that as payment generations are evolving, the more digitalized they are turning into. Having started from a barter economy, nowadays we are talking about cryptocurrencies and new form of currencies in general. It is still too soon for a completely new economy to be established. It needs time for cryptocurrencies to be catholic recognized, especially in Greece where there is no support from Central Bank and the dangers are more than the benefits.

The previous statistics that were commented in second part are totally confirmed by the research. More and more consumers are debit card holders who use them in every day purchases. Credit cards are no longer so popular due to banks' safety valves and the reproach of people to borrow money. Cash is the second choice as a means of payment and prevail mainly in small value transactions. A quick, easy and direct payment is what all consumers want. Especially, people aged from 35 to 45 aim to save money from loyalty programs and discounts, when younger ignore those factors.

Results also show that younger people are keen on electronic transactions and purchases from e-shops. Young women are favor to safe payment methods while young men tend to try more innovative ways like cryptocurrencies. Consumers' age plays again a catalytic role in technological update willingness and information but not consumers'

education. Higher education level does not translate to higher computer literacy. Grey payments still exist in the name of extra profit.

In the future, same research could be conducted every five years to ascertain the changes and the evolution of citizens' choices. Another recommendation would be to categorize occupations. Further job analysis would bring more details for users' profile and tastes because in employee category different professions are enclosed, for example people working in science or in humanities are both employees.

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