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Mobile Payments, driving economies in development countries toward less risky transactions and lowering informality

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Abstract:

To-date cash payment is the most used method in Albania for purchasing goods and services, helping informal economy, increasing transactions costs and risks due to cash transactions anonymity. One of the cash substitutes is electronic money that is allocated in bank accounts, credit cards, mobile wallets, bit coins and in many other forms. Transactions cost decreases when credit cards are used to purchase in retail by reducing time of the transaction and also increases the precision of the transactions due to automatization. Mobile technology is advancing and mobile phones can be unlocked using biometric identification, considering this specific feature of these devices we can consider the mobile wallet one of the safest wallets in use that is associated to a single individual and is very hard to be broken or stolen through biometric identification. Mobile is also the most used communication tool among humans, and it is very attractive due to some features like cameras, GPRS and APPs that make the smartphone the tool that everyone has in his/her pocket and uses it actively during day and night. By taking this in consideration, the mobile phone will be a successful tool for performing electronic payments, e-commerce and it will turn in the electronic wallet that we can use anywhere, anytime.

Key words: Mobile payments, Electronic Money, Cash, Informality, Transaction cost.

1. Introduction

The Albanian economy is one of the most informal economies in Europe and in part, cash transactions are helping the informality of the economy due to its direct access to cash and anonymity of the transaction. Cash has been used for purchasing goods and services for a long time and it is expected to be used as traditional way of payment mainly for small value transactions. Although cash displacement and payment cost reduction is high on the agenda, the business case is far from straightforward for the banks and operators. [8]. But still based on the banking system influence into economies and government policies, cash transactions and cash itself are decreasing. The Albanian population is young; the average age is around 27 years old and Albanians are heavily using mobile devices. According to the Albanian Electronic and Postal Communication Authority's (AKEP) Annual Report of 2013, in Albania, internet is used by 10.4% of Albanians through mobile phones or land lines, that is 36% more than in 2012 [3]. According to AKEP in 2013, 186% of the population owned a SIM card. According to the Bank of Albania (BOA) there are 16 operating banks with 100 branches all over the country that have a total of 2,919,352 current accounts from which 113,930 are accessible from internet [4]. Based on the data above, even though Albanians are well banked and also use internet and mobile technology, electronic money is not used often in daily transactions, instead, Albanians prefer to use cash payments when they buy goods or services. This behavior of purchasing goods by paying in cash increases transactions costs and also decreases the security of each transaction. Transactions costs are connected to the time that both parties, client and

merchant, spend to count and exchange the money for the purchased good or the service. Also coins and paper money have a cost themselves because they have to be produced by the government by paying a certain price for each coin, paper based money or check. An additional cost for transactions performed using cash is the time that the money takes to go from the place where the transaction is performed to the bank account of the owner of the good or service that has been paid in cash. For example, if a company has a branch in Albania that differs from the headquarters, the cash needs as minimum of one day to be available for use from the bank account of the mother company. Cash transactions are risky because the cash itself is anonymous, at the moment that the transaction is being performed there is no way to identify the person that is using the cash to perform the transaction, this way of using cash can lead to fiscal evasion and less taxes charged by government, because of the not declared cash transactions or worst, it can help illegal activities or corruption. Another issue with cash is related to counterfeit banknotes because nowadays, the printing technology has advanced and is easy to produce fake money that can be used to performcash transactions. The Albanian currency LEK is not a significant international currency and is not a target of this kind of criminal activity but however there are cases of fake 5000 LEK bills that is equivalent to 45 US dollars, that are used in Albania. According to "Transparency International", Albania is listed at the 110th place regarding corruption perception indexes for 2014 [10] and the Albanian government says that the decrease of corruption and informality in the economy is one of its main priorities.

Electronic money is more secure and transactions are easier to be identified but this doesn't mean that cash is a barrier to economy. Cash transactions will continue to be performed in the future and actually cash payment is the fastest way to get money on hand. Sometimes, in some remote places or for some specific services or goods, electronic money

cannot be used due to technical limitation or because of the specificity of the good. For example, there are some remote places in Albania where there is no electricity or mobile connection. These places are mainly located into the mountains and are visited and used mainly by tourists. Putting in function an electronic device to perform electronic payments would be very expensive for this kind of touristic activities.

2. Literature Review

According to [14], the change in money form is done based on the reduction of transactions costs and furthermore, I think is done to reduce processing time. According to [7], electronic money is the money balance recorded electronically on a stored-value card. Electronic money can be stored in plastic cards, mobile wallets or in other forms like bit coins located in personal computers. The world of mobile payments is populated by all sorts of different players and stakeholders, such as financial institutions, MNOs (Mobile Network Operators), technology providers, regulators and many others [13]. According to (Cobb, 2005), electronic payments can thus lower transactions costs, stimulate higher consumption and GDP, increase government efficiency, boost financial intermediation and improve financial transparency. What was once considered a luxury item in the early days; cell phones have become part of our daily life [12]. The world has witnessed an upsurge of electronic payment instruments meant to facilitate trade and simplify payments [1]. A mobile payment is an electronic payment made through a mobile device (e.g., a cell phone or a PDA). The advantage of not needing to use other devices such as modems, point of sale terminals, and card readers for mobile payments is also quite clear [18]. However, experts in the financial sector have stressed that unless something radically innovative, functional and savvy is introduced, which accounts for attitudes as well as the huge un-

banked population, the country's dream of building a functionally cashless society in the shortest possible time could be elusive [2]. Mobile payment is regarded as the next big innovation that will enhance the existing e-commerce and m-commerce efforts to unleash the potential of mobile business [15].

3. Statement of the problem

"Effective and efficient payment systems are vital for the economic development of emerging countries...to promote the development of commerce, enhance economic policy oversight, reduce the financial, capital and human resources devoted to the transfer of payments and control the risk inherent in moving large values" [17]. Based on the data published by BOA for 2013 regarding credit and debit cards usage, is obvious that cash transactions are the main ones for purchasing goods or services. According to BOA, in 2013 were processed about 13.2 million (ATM and POS) card transactions, equal to ALL 130 billion. Of the total transactions, about 88.7% were cash withdrawals from ATMs and only 11.3% were customers' payments through cards at POS terminals. Also by the end of 2013, there were 130,503,210 banknotes in circulation, worth ALL 204.372 billion. Compared to 2012, the number of banknotes fell by 5.3%, while their value increased by 3.3%. There is no change in the reduction of the cash in circulation from 2012 to 2013, even worse the amount of cash in circulation has increased. The current situation indicates that Albania is not successful in reducing cash amount by increasing cash costs and risks due to fraud, informal economy and transactions precision. Printing, distributing and controlling cash are estimated to cost to a developed economy 0.75% of annual GDP and an emerging economy 1% to 2% [5].

The main question of this paper is:

Can mobile payments help Albania to reduce transactions costs for the user using mobile payment as a payment method, by decreasing the cash costs and also decreasing the risks for the citizens and government that are related to cash transactions?

Albania is a well banked country, the banks, in collaboration with mobile payment providers, may succeed in changing the bank customer behavior due to the trust of the customers toward the banking system.

4. Scope of the study

This research will be focused on finding the best combination of mobile technology and payment methods in order to successfully identify the best model of introducing mobile payments widely into the Albanian environment.

In this paper are mentioned other payment methods too, so the reader of this paper will have the possibility to identify other methods of electronic payment to solve the problem posed above. We will limit the study only on mobile payments and their effect into the Albanian economy.

The aim of this paper is to identify the most suitable payment model to be used in Albania to help people access the best financial service, reduce cash and transactions costs and also to reduce the informal economy by levering honest ways of doing business. From the data above, mobile penetration in the Albanian population is very high, and this fact is very important to find a suitable model for going from cash to electronic payments.

5. Albanian Environment

There are 16 private commercial banks operating in Albania that are supervised by the Central Bank of Albania. These private banks have about 530 agencies in Albania and they also

offer ATM and POS services for cash withdrawal and retail payments.

According to AKEP there are four MNOs operating in Albania with a total of 3.7 million active users, which means that one Albanian resident uses 1.2 SIM cards, based on the current population of Albania that is around 2.9 million. This means that each household has at least one mobile phone and uses it actively. But are these mobile users using smartphones or standard GSM phones? How many of them have internet connection in their mobile phones? According to AKEP, 1.1 million of mobile phones are using Albanian SIM cards to connect to internet, this means that 29% of mobile users have internet access and also own a smartphone. According to BOA there are 2,919,352 current bank accounts, and this means that each household has a bank account [11].

From the data above, mobile payments can be introduced in the Albanian market and they can have a wide penetration without technical restrictions. By analyzing mobile market data in Albania, a successful mobile payment method should be based on standard GSM technology like USSD or SMS because it will have a wider penetration in the market. Payment methods based on mobile applications or internet will limit the penetration of the product to 1/3 of the population due to technical capabilities restrictions of the mobile phones used by Albanians.

The Albanian government is finally promoting electronic payments by integrating several banks into its official portal for processing bill payments through this web site.

6. Electronic Money effects

Globalization has changed the way money flows due to the missing barriers between countries in the global economy and movement of goods faster all over the word due to better supply chain management and advancement in transportation

technologies. Globalization and digitalization have dramatically altered the way in which we live, work, and communicate [9]. Payments are mainly performed through banks or non-financial institutions and organizations are trying to find ways to reduce the transaction cost of money transfer from person to person (P2P), business to person (B2P) or business to business (B2B). This reduction of costs is facilitated by the innovation especially in transportation, communication and IT Systems and also by the advantages of economy of scale due to globalization effects. This increase in services all over the world has transformed the way these services and goods are paid through financial transactions. Main financial transactions used to purchase goods or services from partners or sellers all over the world have been through bank transfers, credit cards and through P2P or P2B transfers using Western Union, Money Gram. Based on the volume of these transactions that is increasing day by day, and due to the need to reduce the costs of money transfer all over the world, organizations are innovating this market using the latest technology to reduce the costs of cash transfer. MPesa, developed by Safarycom in Kenya, has succeeded in facilitating electronic transactions in the country and abroad. This solution helped Kenyan people to send money to their relatives at home, faster and with lower costs [16]. Also, the beneficiary had this money immediately available in his/her mobile wallet, so there is no need to travel for several kilometers to reach a bank for taking the money. In developed countries, Apple, Google, Square and many others have already introduced mobile payments and with success. BitCoin is reducing costs by using P2P transfers using secure encryption through personal computers.

In Albania, the situation is similar to Kenya regarding the emigration, nearly 20% of the Albanian population is in emigration and they are sending money periodically to their families. The money are coming in Albania mainly through bank transfers, through western union or money gram

companies or by the emigrants itself when they visit their families in Albania. There is no mobile technology to help these people to decrease the costs of money transfer. Since Albania is similar to Kenya regarding the remittances, we think that the mobile solution will help Albanians to decrease cash costs and also to increase cash security during transfers by replacing cash with electronic money.

7. Cash Risk in Albania

Is the cash risk real in Albania? Unfortunately many issues that affect the Albanian economy and banking system are connected to cash. According to BOA, during 2013 counterfeit banknotes and coins existed in the market but their value was very low and insignificant, also they decreased by 30% related to 2012. In its annual report, BOA doesn't give any other indicator about counterfeit banknotes or coins. Cash theft and cash pilfering is real in Albania. During the last two years this risk has produced some clamorous money thefts that affected the Albanian Central Bank itself and also the biggest private bank in Albania, Raiffeisen Bank. According to BOA, a single employee had stolen about 7 million dollar in cash during two years. According to the prosecutors, this amount of money has been spent in gambling and this money can't be taken back, furthermore, it can't be identified anymore because it has been spent in cash. This fact confirms how anonymous is cash, even if it comes from a bank. In 2013 another case of cash theft affected one of the branches of Raiffeisen Bank located in Devoll, Korca region. According to the prosecutors, the head of the branch had stolen about 2.8 million EURO by taking customer cash deposits and by not declaring the amount into the core banking system. ATMs cash has been stolen several times in Albania using various methods, from copying debit and credit cards to less sophisticated mechanism like money

trappers, ATM employee pilfering or replacing genuine banknotes with counterfeit ones during ATM refill process.

All these facts show how risky is the cash even for banks that are supposed to be the ones that have the highest knowledge of cash risk and also the ones that use the best security procedures in place.

Cash risk affects the Albanian government too. Due to the big amount of cash in circulation and due to the transactions that are performed using cash, most of the merchants tend to not declare most of the transactions performed in cash and also taxation authorities cannot identify these transactions electronically. This behavior of the merchants, facilitated by cash transactions, has direct effect on taxation, by decreasing the amount of state tax that a merchant pays and also by favoring unfair competition into the Albanian market because of different standards on registering the transactions performed.

Individuals and merchants are also affected by cash risks and costs. Merchants suffer employees' pilfering especially the in service sector like supermarkets, bar or restaurants and also the transaction time and cost is increased by the use of cash. According to Visa, transactions performed using credit or debit cards are 50% faster than transactions performed in cash.

8. Electronic payments risk

Electronic money doesn't offer the same anonymity as cash. However, bit coins and other similar currencies exist into the web and offer P2P payments that are hard to be identified since they are just computer algorithms. This kind of payments are flourishing into the so called "Dark Web", supporting illegal activities like purchasing weapons, drugs or other illegal goods.

Another issue with electronic money is the possibility to cover the payment. When we pay in cash, we have the money in hand but in an electronic transaction we have just an electronic

receipt and in some cases the receipt won't ensure the delivery of the money.

Electronic money is managed through computer software and this software can be compromised by hackers or by viruses causing the loss of big amounts due to these criminal activities.

9. Mobile Payment

Mobile is the payment technology that will have the greatest growth over the next five years [6]. The Albanian payment ecosystem is suitable for deploying mobile payments because of the wide penetration of mobile phones. Mobile payments are less costly and better supported by technology than other electronic payments. To introduce POS or NFC payment methods is needed initial investment and in rural areas this investment won't be supported by small merchants due to the small quantity of transactions performed and technical restrictions due to no internet connection in these areas. The best solution to perform electronic payments with less costs possible is the mobile payment technology, by performing P2P transfers.

Currently in Albania operate two mobile payments platform M-Pay and EasyPay. These platforms are using different business models in mobile payments and also different mobile technologies. MPesa has started the pilot phase in Albania but has to be licensed by BOA to start to operate as non-bank financial institution.

MPay is using standard GSM technology based on USSD and SMS service hoping to have high penetration in the Albanian market due to no mobile phone type limitation because it uses standard GSM technology. MPay is using the bank-centric model by connecting user bank account with its mobile phone, trying to use the banking system as leverage for reaching its users. This model is limited only to banked users

by letting out of the mobile payment system the non-banked ones.

EasyPay uses mobile APP to offer mobile payment service and also it uses SMS solution. This limits its penetration in the market due to technical barriers, the users must have a smartphone to use the service. This organization uses mobile wallet to store the money for the client and also connects the client to a credit card processor to purchase the products. Unbanked customers and young population is the main target of this company based on its business model.

MPay started to operate in April 2013 and announced 50000 active users by July 2014. EasyPay started to operate in September 2011 but hasn't published any data in its website regarding clients and transactions. Based on these facts, the penetration of mobile payments in Albania is very low and this is based on two main factors. The Albanian population is a cash oriented population and merchants are not interested or willing to introduce electronic payments for their goods or services. This decreases the number of merchants that are willing to introduce mobile or electronic payments for their products, so they can't be used as leverage for changing the Albanian people's attitude toward mobile or electronic payments by offering discounts or bonuses for the purchases.

The Albanian government is not placing any incentive in the market for electronic payments to make Albanians to change their behavior toward cash transitions by replacing them with electronic transactions.

10. Mobile Payments vs. Electronic Payments

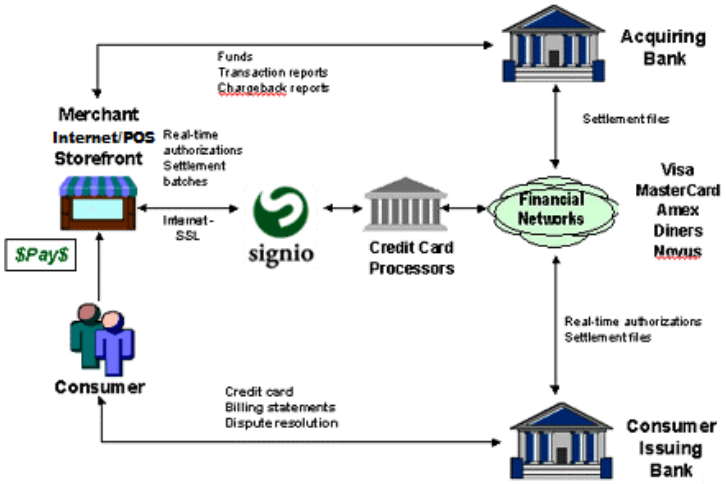
The main objective of this paper is to try to find out what will be the successful strategy for the Albanian payment system to reduce cash transactions and by default to decrease the cash in circulation by replacing them with electronic payments. Actually there are two main services that can offer electronic

payments at merchant site or via internet by using e-Commerce. The first one is by using credit and debit cards that are always owned by banked users. The second method of payment is by using mobile payments and Albania already has two service providers that offer mobile payments. Due to its geographical specifics, Albania has a lot of rural areas that are far away from urban areas and in winter there is no possibility for this remote areas to access the towns due to bad infrastructure of the roads. This means that the merchants of this area should have internet or mobile connection to perform electronic transactions using POS by credit cards. The organization or the merchant that offer the service should pay for POS and mobile data transfer for performing electronic payment. Based on the small amount of the transactions performed by these merchants these costs are relatively high. The habitants in rural areas in Albania tend to exchange goods with each other especially in the agriculture sector. This means that a money transfer should be performed between two persons. At this point, a P2P solution is needed and can't be offered by banks or credit cards since these facilities are not easily accessible from the area.

By considering all these issues and the specifics of Albania, the mobile payment solution offers the best alternative because it has no installation or initial costs. There is no need to travel frequently for performing transactions, and money is immediately available for use in bank accounts or mobile wallets based on the model used by the mobile payment service provider.

In Albania credit card costs are from 20 to 25 EUR per year plus 3% fee for each payment, where about 1.5-2.8 % is charged by the card issuer. There are three banks in Albania offering e-commerce through credit cards. The POS initial cost is about 100$ but the merchant pays up to 4% of the amount of payments processed through POS. In figure 1 is shown the credit card process flow for e-commerce purchase.

Figure1: Credit card process flow



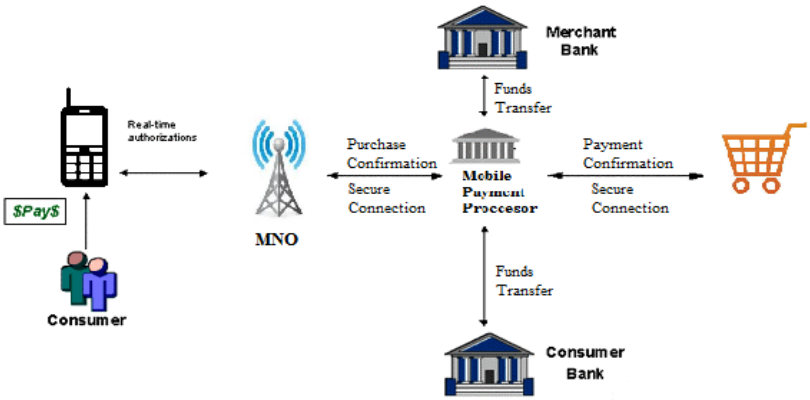
Source: VeriSign Signio

Based on this paper case study, both Merchants and Customers are located in Albania and the POS device is located into the merchant's shop. During the processing, the data passes through a secure channel in internet directly to the "Credit Card Processors" that verify the validity of the card and take a commission for the successful transaction. At this point, the fee applied by the card processor is transferred outside Albania to the credit card processor owner. For payments through e-commerce or POS, a certain percentage on purchase goes abroad Albania by lowering the profit of the banks, merchants and the Albanian government on Credit/Debit Card transactions through POS.

Mobile payment fee is from 1.5% to 4% on the purchase to the merchant or a fixed fee around 40 euro cents for the customer. We have modified the schema in figure 2 based on a Mobile Bank Centric platform similar to the MPay solution.

According this financial cost analysis, mobile payments have lower costs for both merchants and clients and the money is available immediately to the mobile wallet or bank accounts to be reused. Also, mobile payments are usually processed by local organizations that pay the taxes in Albania and that have Albanian employers. Based on the Albanian market, mobile solutions are offered by Albanian companies by keeping the profit inside Albania. In case of POS or Credit card payments, part of the money goes outside the country since card providers are located outside Albania. Mobile payments will help the Albanian government to reduce the unemployment and the Albanian economy by performing mobile transactions within the country.

Figure 2: Mobile payment flow



Source: Prepared by paper authors

11. Conclusion

Cash transactions are risky, in Albania this has been proven from the great amount of cash theft in some banks including the Central Bank of Albania. Furthermore, cash is helping merchants to hide their transactions by not declaring them to the tax office, increasing informal economy.

The government, banks, merchants, non-bank financial institutions and mobile operators should educate the Albanian population to perform electronic transactions instead of cash transactions. One effective way to do this is by placing incentives for this kind of transactions. The government should reduce tax for individuals and merchants which perform electronic payments by applying lower taxes to them.

Banks have to push their clients to stay as much as they can outside the bank office by offering to them internet banking, mobile banking, e-commerce or POS services.

A fast and effective solution for increasing electronic payments penetration into the Albanian market is through mobile payments because of the wide mobile penetration into the Albanian population.

References

[1] Abor, J. (2004). Technological innovation and banking in Ghana: An evaluation of customers' perceptions, American Academy of Financial Management

[2] Ackorlie, C, (2009) Banking Survey, Business and Financial times

[3] AKEP, Anula Roport 2013, pp. 17

[4] Bank of Albania, Commercial Bank Register

[5] Cobb, A., "Out of the Shadows," Banker Middle East, May, 2003, available at www.bankerme.com/bme/2003/may/visa_cards_special_2.asp, May 2003.

[6] Edgar, Dunn & Company, Global Payments Survey, 2011

[7] Ely, B. (1996). Electronic money and monetary policy: Separating fact from fiction.

[8] Ernst&Yang, Mobile Money, PP 26

[9] Fridrich Schneider, The shadow Economy in Europe, 2013

[10] http://www.transparency.org/cpi2014/results

[11] http://www.bankofalbania.org/web/pub/llogarite_e_klienteve_dhjetor_2013_6335_1.pdf
[12] http://www.articlesbase.com/cell-phones-articles/cell-phones-are-a-necessity-of-life-146902.html
[13] Jeroen de Bel and Monica Gâza, Mobile payments 2012, ISBN: 978-94-90587-00-0, pp 12
[14] NORTH, D. (1994). Transactions Costs Through Time. Washington University Press, Washington, DC.
[15] S. Karnouskos. Mobile payment: A journey through existing procedures and standardization initiatives, IEEE Communications, Surveys and Tutorials, 2004, pp 44–66,.
[16] Tonny Omwansa, M-PESA: Progress and Prospects / Mobile World Congress 2009, pp 115
[17] World Bank Policy Research Working Paper number #1336
[18] Zika, J. (2005). Retail electronic money and prepaid payment instruments, Institute of Economic Studies, Charles University in Prague, Prague