




## **MOBILE FINANCIAL SERVICES: LITERATURE REVIEW**

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### **Abstract**

*This paper aims to provide a literature review relevant to Mobile Money and related concepts. The main purpose of this paper is to analyze the mobile money field and to present a theoretical framework based on mobile money. The paper starts with a historical overview, mainly focusing on diffusion theories that were applied in different cases and studies. It narrows mobile money technologies, and concepts related to mobile payment. Mobile Money technologies are an important part of Information and Communication Technologies, and as shown they have had a great impact on people's life. For the impact of diffusion of technology, researchers have been interested in analyzing the impact of technological innovations in people's life, in business and in the economy.*

*Keywords: Mobile Money, Mobile Payment, Diffusion of Innovations, Technological Innovation*



## INTRODUCTION

Innovation has been mostly associated with technological innovation throughout much of the course of this field's scientific examination history (Godin, 2010). With the increased internet usage and diffusion, there has been a shift towards Information Systems and Technology. Hayashi and Klee (2003), showed that the intervention of new technologies contributes to increasing the enjoyment of electronic payment usage.

Nowadays, things have changed completely with the introduction of the Internet. In most developed countries today, it is natural and normal to have full and easy access to the Internet, mobile phones, and personal computers.

The adoption of mobile phones had changed very fast in recent years (Jack & Suri, 2010). Mobile devices can be used in a variety of payment scenarios; payment for digital content, flight tickets, parking fees, etc. Customer transactions include remote account access, utility fees, transfer of fund, etc. (Comptroller's Hand book, 1999).

Technological diffusion research is becoming even more important and the focus of numerous studies. Let's analyze below, some of the authors who develop the importance of mobile financial services.

## LITERATURE REVIEW

In its first decades, researches about the diffusion of innovations, were started by independent intellectuals of different fields and was treated in different approaches. According to Rogers & Shoemaker (1971), an innovation is defined as an idea perceived as new by individual or a system. In their study Rogers & Shoemaker (1971), evidenced a new trend commenced by the mid-60s. When they computed an index for each available diffusion publication, the cross-disciplinary indexes showed that this new research trend went toward a more unified viewpoint. Many authors have analyzed theories of how individuals adapt to new technological innovations. The most popular theories is the diffusion of innovation theory developed by Everett Rogers (1983).

In his book *Diffusion of Innovation*, Rogers (E. Rogers, 1983) explains that diffusion is "the process by which an innovation is communicated through certain channels over time among the members of a social system".

The fact that diffusion is a type of communication, it tries to give an idea of how, why and at what speed can a new technology spread through different cultures and also explain why there are different rates of technological adoption. According Rogers (1983) the speed that a new technology can be absorbed by a society depends on several features of innovation as follow:

1. *The relative advantage perceived by individuals: the greater is the advantage perceived, faster will be the adoption* (Casmir, 2001; Finley, 2003; McKenzie, 2001).

2. *The compatibility with the norms and values of a society: the more technological innovation complies with the values of a society, the sooner it will be adapted.*

Other elements involved in the diffusion of technology are communication channels, time and the social system (E. Rogers, 1983). This diffusion approach, developed by Rogers (E. Rogers, 1983), was developed by different authors (Chigona & Licker, 2008; Orlikowski & Iacono, 2001) as a common theme in technological research.

According Lundvall (2009), innovation results from the encounter between technological opportunities and user needs and with increased Internet usage and diffusion, there has been a shift in research focus. Information Systems' researchers have been focused on identifying the factors that may facilitate the integration of technology into business (Legris et al., 2003). Digital technologies are considered as one of the most important forces that drive global economy (Brynjolfsson & McAfee, 2012).

Al-Jabri & Sohail (2012) used the diffusion of innovation theory (DIT) as a baseline in their study developed in the banking sector in Saudi Arabia. They had intended to analyze if this theory can explain how the mobile adoption happens. In another study (Chigona & Licker, 2008), the DIT was used as a framework to examine if the five attributes of innovations affect adoption among the urban poor.

Technology Acceptance Model (TAM) is another model developed by Fishbein & Ajzen (1975). The Technology Acceptance Model was also applied in different contexts and by a number of researchers (McKechnie, Winklhofer, & Ennew, 2006; Shin & Kim, 2008; Teo, Lee, & Chai, 2007; van Biljon & Kotzé, 2007). This model is more focused in the individual's acceptance and adoption of information systems, in terms of usage intentions and perceived usefulness (Venkatesh & Davis, 2000).

There are also many studies that analyze the situation from an economic point of view. For example, Balamoune-Lutz (2003), in his research, used data from developing countries to analyze the relationship between ICT diffusion and per capita income.

Considerable differences observed when analyzing the relevance of IC technologies in developed countries compared to less developed because of (Roztocki & Weistroffer, 2011). These differences can be attributed to a number of environmental factors because they usually vary from one country to another, so the challenges and factors that influence the ICT diffusion or adoption can't be the same as in developed countries.

Roztocki & Weistroffer (2011), use emerging countries' term to describe a region that has vigorous economic growth. Considering the Roztocki & Weistroffer study, the unique environmental factors found on emerging or transitioning economies can be: 1) the laws and

regulations, 2) employee characteristics, 3) government control, 4) management style, 5) customer characteristics, and 6) economic condition.

The diffusion of innovation theory covers many aspects in particular when researchers study innovation diffusion in the context of a developing country because here are huge differences from developed countries.

## **MOBILE FINANCIAL SERVICES**

In the digitalized world, the spread of information technology, increased use of personal computers, easing internet connectivity, and the widespread use of mobile phones have encouraged mobile companies to provide financial services. A success story is the use of M-Pesa in developing countries. Zandi and Singh (2010), report that there is a strong correlation between electronic payment instruments and economic growth. In a research done by Hasan et al (2012), for 27 European countries during 1995-2009, the results turned out that switching from the form of cash payments to electronic payments prompted the entire economy of these countries. Referring to a Canadian study (Arango & Taylor 2008), when a merchant decides to accept electronic or cash payments, he should think about the costs and benefits.

Mobile payments are “financial transactions undertaken using mobile device such as a mobile phone” Porteous (2006).

Mobile Money is a service which by using mobile device offers access to financial services such as payments for goods, services, and bills, especially to the unbanked population (Dahlberg et al., 2007).

The advancement of mobile technology has contributed to a significant rise in mobile devices' popularity, such as significantly increased data transmission rates and multimedia services and applications (Gruber & Koutroumpis, 2010). According to Yan, G, Paradi, J.C (1998), most financial institutions have limitations on the transactions they perform on customer accounts through the bank, as well as a limit on the amount that can be transferred.

M-PESA offers access to financial services and is one of the most famous mobile money platforms (Mbogo, 2010). Customers can use their mobile device to transfer money by using the mobile phone short message services (SMS) and most importantly without the need to have a bank account (Karugu & Mwendwa, 2007).

## **CONCLUSIONS**

This paper analyzed different existing studies related to mobile money. The paper is focused on diffusion theories, which were applied in different cases and studies. Diffusion of Innovation Theory tries to give an idea on how, why and at what speed can a new technology spread

through different cultures. According to Rogers, this is a very complex process, and that's why there is so much interest on it.

Also, the paper presents a comprehensive theoretical context by including different aspects of Mobile Money. Mobile Money is defined as a service that uses mobile device offers to access financial services such as payments for goods, services, and bills; especially for the unbanked and low-income population.

The diffusion of Information and Communication Technologies has been proven to be a complex process that can also be viewed from a country-level aspect. These country-level aspects include economy, culture, technology, and politics. The main factors that influence in mobile money diffusion, were: regulation environment, existing alternatives, agents' actions, cellular market landscape and service providers' market share.

Conclusively, the theoretical framework and the synthetic analysis of this study refer to mobile financial services in different economic and social perspectives and contexts.

## **SUGGESTIONS FOR FURTHER STUDIES**

We suggest deepening in the differences between mobile banking and mobile money services. It is important to investigate why in some countries one service is more successful than the other one. It would be interesting to identify the differences between developed and developing countries.

Another suggestion goes for the factors that affect the extent of the diffusion of mobile financial services to developing countries such as country culture, financial literacy level, technology development level and the financial system in these countries.

M-Pesa is one of the mobile monetary services that became popular for developing countries. However, this service did not succeed in Eastern Europe as expected. It would be worthwhile to carry out an in-depth analysis of the factors that led to their failure in these countries, such as SWOT analysis or econometric models.

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