

## Chapter 28

# Mobile Security in Low-Income Households' Businesses: A Measure of Financial Inclusion

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### ABSTRACT

*A wide range of technologies impinges on all disciplines including financial services in this era of the Fourth Industrial Revolution. The deployment and security of mobile phones have considerably increased financial services access such as mobile money to the low-income households in developing African markets recently. The financial services that were once randomly accessible to those financially excluded have now become a potential pathway to enhance financial inclusion in allowing the low-income households to transact through mobile financial services in a more speedy, reliable, and secure manner. However, many security challenges remain to be addressed to promote a more inclusive mobile financial system. This chapter focuses on mobile devices security landscape and unprecedented security breaches by cyber criminals and how those threats can be mitigated in a view to promote financial inclusion in the mobile financial services sector of emerging African markets in the midst of the Fourth Industrial Revolution.*

### INTRODUCTION

In the era of the Fourth Industrial Revolution where potential of billions of the population are connected by mobile telephony with access to mobile financial services are countless. The concept of mobile financial services is one of the most prominent mobile application in this era of industry 4.0, having no historical precedent to the low-income households in the emerging niche markets with regard to its storage capacity, multifunction applications, processing power, dictionary to knowledge and back-up secure system. Ouma, Odongo and Were (2017) showed in their previous work that the adoption of mobile phones to provide financial services to the low-income people who were financially unserved/unbanked and excluded by the main financial services stream continue to rise in developing countries. The sophistication

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in technology more specifically mobile phones have revolutionized the sector of financial services and introduced new ways of serving the poor to promote financial inclusion.

The mobile financial services have proven to be relatively reliable, affordable and accessible to the extent that many low-income earners are expanding their financial platforms to add other types of financial services such as mobile banking/payment and mobile micro insurance (Demirgüç-Kunt, Klapper, Dorothe, & Van Oudheusden, 2014). The scattered use of mobile technology has opened new markets across developing markets and has induced financial services to reach low-income earners in out-of-reach places where banking services are lacking. However, one of the area that has been of concern to most of low-income earners has been the aspect of security threats being the main reason for not adopting mobile financial services. Although the increased growth and deployment of mobile devices security have arouse interest to reduce infrastructural gaps, operational cost and bring profitability to providers, the security component has been listed to be still a huge grey area of concern for the low-income households to promote an all-fledged financially inclusive system, (Hughes & Lonie, 2007; Holmes, 2011; Dermish, Kneiding, Leishman, & Mas, 2010; 2012).

Although financial inclusion is still exploratory and in its infancy stage in most emerging economies around the world, it has become a bedrock of development policy to the extent that it has been classified as the United Nations main aim among its 2020 priorities. This emanates from the observation that an enhanced financial inclusion is important in mitigating extreme poverty, increased shared prosperity and is one of the recipes for economic growth and welfare (World Bank, 2014; International Monetary Fund, 2014; Demirgüç-Kunt, Beck & Honohan, 2008).

In comparison to the developed countries in the world where the population have access to formal financial services, in developing countries sustainable financial access are still lacking to the low-income households although quite a number of unserved population has now obtained access to financial services (Ismail & Masinge, 2011). According to Huet (2017), 2.5 billion low-income people earning less than 10 dollars per day lack access to basic financial services. Furthermore, the low-income people who are more vulnerable to financial risks by using cash and informal mechanisms makes the process more costly and risky.

The advances in information and communication technology (ICT) in the midst of the Fourth Industrial Revolution has generated an increase in the use and access to mobile phones in those emerging economies. The spreading velocity of mobile devices technology has resulted in a surge of previously unbanked, underbanked, uninsured, underinsured low-income earners to have more access to financial services in a more secure way and can be now brought into the mainstream of a more inclusive secure financial system, out of which more women have access to securely mobile money transactions. Although women are more likely than men to be less financially mobile when carrying financial transactions, the percentage of women from 2011 to 2014, in emerging countries with registered accounts have increased by thirteen percent as per a study made by the World Bank on Global Financial Inclusion (Global Findex) database (West, Villaseñor & Lewis, 2016).

The secure practices in mobile financial services offer opportunities to provide financial services at relatively low-cost improving financial inclusion through achieving productivity gains across the emerging markets. Mobile financial services such as mobile banking, m-payment and mobile micro insurance that are currently revolutionizing the developing countries, enable the low-income households to financially transact digitally and have potential to grow despite some security barriers hampering the progress especially now that the Fourth Industrial Revolution has started to flow. Although the Government and other stakeholders in the financial services industry have made much concerted efforts counter-balancing the

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