M-PESA USAGE AND PRICE OF PRODUCTS OF MICRO AND SMALL ENTERPRISES IN NAIROBI, KENYA

Dr. Kate O. Litondo - University of Nairobi - School of Business

P.O. Box 51420-00200, Nairobi – Kenya

Tel: +254 722 865 021/+254 733 223 635

Abstract
Micro and Small Enterprises (MSEs) in Kenyan informal sector are increasingly using mobile phones for business transaction particularly, M-Pesa which offer various services such as savings, payments, receiving and sending money. The aim of this study was to determine the effect of M-pesa services on the unit prices of products of Mess It is acknowledged that MSEs are contributing a lot to the Kenyan economy, yet it is not established whether the usage of M-pesa services has any significant effect on the unit prices of MSEs' products in the informal sector. The mobile phone is the most widely used Information and Communication Technology tool in the informal economy. However, studies done on the role of mobile phones among the MSEs in the informal sector tend to concentrate on communication services rather than monetary services. This study attempted to address this knowledge gap. Cross-sectional survey research design and line transect sampling method was used to identify the 384 respondents from 8 sub-counties of Nairobi County. The linear regression model was used to estimate the results. The findings of the study show that the usage of M-Peas services, proper record keeping, and age of the owner manager have significant effect on the unit cost of the fast moving products of Mess On the other hand, education level was found to have a significant influence on the unit cost of the slow moving products. The study results show that the location of the MSEs does not have an influence on the unit price of products. Based on the cost benefit analysis, the research recommends the use M-Megaservices even if those services increase the unit cost of the fast moving product because their benefits such as security and convenience far outweigh the costs. MSEs should be trained on how to utilize the various M-Peas services for business transactions in the informal economy.

Keywords: M-Peas Usage, MSEs, Informal Economy, Product Unit Price, and Linear Regression Model.

Introduction

Mobile phone is the most commonly used communications devices in the world and its power ofattractionexceeds beyond any other communication tools(Saylor, 2012). The great appeal of mobile phone devices is derived from their efficient connectivity they provide for a wide range of activities. Mobiles are used not only to communicate with friends, relatives and business partners but also to keep abreast with current affairs, news stories, share photos, chatting, verify bank balances, among the many other uses(Mwaura, 2009&Wei, 2007).Since its inception, the

mobile phone device has motivated entrepreneurs to be more innovative and creative. Ker row(2016) explained that mobile phones are increasingly playing a key role in the lives of individuals of all walks of life in every corner of the world. One major point of concern is how mobile phone devices are quickly becoming integrated in business transactions all over the world. For instance, Nigeria has 150 million people with mobile phones and 17 million with face book account. The digital trade in Nigeria accounts for 10% of the GDP.

Iraki (2016) observed that Kenya is a renowned country because it is a country where there is immense talent in mobile phone application like M-Pesa. This Kenyan creativity and innovation has attracted western and eastern countries alike. What is surprising is how entrepreneurs can make so much money in a market that does not look sophisticated. This fact has made Kenya the centre of attraction to the entrepreneurs of the world like Mark Zuckerberg the founder of face book who came to Kenya for deeper understanding of mobile phone application of M-Pesa. M-Peas has developed a vast network of agents, attracted over 200 payment partners and has linked up with more than 50 commercial banks and other financial institutions to transfer funds. Ker row (2016) acknowledges that small businesses in Kenya are considered to be innovative and competitive especially in technology and therefore, the dynamism in technology has a significant effect on the performance of the Kenyan micro and small enterprises. In the largest emerging economies of the world, which include China, India, Brazil, Russia and Mexico, more than 95% of consumer-transactions are cash-based. This is an indication that there is high potential for mobile phone payments.

Mobile Financial Services

Banking customers are increasingly employing their mobile phones to check bank account balances, transfer funds between accounts and receive various types of account alerts. This shows transformation from what banking customers had been doing on their desktops to their mobiles (Pénicaud, 2013).In Kenya, basic banking is now exploiting the potential for mobile financial services. For example, enabling two parties to exchange money for goods and services using mobile devices is an industry that is on the rise and it is redefining traditional banking (Omwansa& Sullivan, 2012).Mobile phone industry is crowded broad field with a big number of interested players to capture a piece of the mobile phone payments market, foremost among them are mobile phone service providers, device manufacturers and commercial banks, in addition to technology companies and interconnectors of mobile service providers. Card associations, transit authorities, retailers and marketing companies are also eyeing mobile commerce market. In their quest for market success and acceptable returns on their investments, these organizations are coming together to exploit various business models, service delivery options and technologies(Hughes & Lonie, 2010). In transport industry for example, mobile payments providers and transport authorities are developing open-loop payment systems that enable travelers to pay for parking, subways and bus tickets, through mobile phones devices. In other cases, public agencies and employers are making payments to the mobile phones of workers who have created mobile phone accounts for receiving and sending money (Ndiwalana, Morawcynski & Popov, 2011).

Developing countries like Kenya are growth hot spots where there are large numbers of unbanked residents. Kenya has developed mobile networks but lack a widespread banking infrastructure; therefore, mobile phones are providing a safe and reliable alternative for making payments and transferring funds. United Nations Economic and Social Council (2009) report emphasized that mobile phones were important tool for development in poor countries because of their ability to bypass the infrastructure barriers in remote rural areas in Africa. Furthermore, the swift development in technologies and the ease of usage coupled with falling prices of cell phone handsets, present the mobile phone as a suitable and adaptable instrument to narrow the digital divide.

The Information Economy Report (2007-2009) discovered that mobile phones had emerged as the most important ICT tools for least developed countries, and their increased diffusion indicated that the mobile phone devices was important "digital bridge" between the low and high income nations. McCoy and Smith (2007) explained that people in developing countries were welcoming mobile phones as life changing instruments. They gave examples of fishermen in India who were using cell phones to inquire about prices from different markets; and saloons in Ivory Coast who used mobile phone to contact their customers. In both cases, mobile phones had a significant effect on the sales and the customer base increase.

Heyer and Mas (2009) explained that mobile phone business model depends on: a) volume – being able to capture a large number of relatively small transactions; b) speed – being able to generate momentum and trigger simultaneous interest among users and merchants; and c) coverage – being able to use it anytime, anywhere. They further explained that these features combined together indicate that the mobile phone business model needs to be scaled up for it to be successful.

Highlight, Zincous& Abdel-Mottle(2015) stated that cloud computing has advanced the ability of mobile payment partners to create new business and operating models, providing a platform for interconnecting multiple players. With cloud computing, both data storage and processing happen outside the mobile device. It provides both the technology platform and the business processes that are required to distribute investments across mobile money ecosystem participants and to respond to changing customer and regulatory requirements(Quay, 2011). The cloud processing environment creates standardization in addition to creating a cost-effective expenditure-based solution for entering a mobile money venture.

M-Peas

Runde (2015) described M-Peas an Unstructured Supplementary Service Data (USSD) application that runs on mobile phone devices and it is a leading player in Kenya's electronic commerce evolution. It was launched by Safaricom Company in the year 2007 as a mobile money transfer service.40% of Safaricom is owned by Vodafone, 35% by the Government of Kenya, and the remaining 25% is 'Free Float' on the Nairobi Stock Exchange. Vodafone, a British cellular enterprise enjoys a big share of M-PESA revenue. M-Pashed 25.2 million customers by May 2016 (Miami, 2016).M-Peas allows MSEs users to deposit, withdraw, transfer

money, pay utility bills, pay for goods and services, and even receive salary and benefits payments via their mobile phones. M-Peas can be described as a branchless banking service whereby customers deposit and withdraw money from a network of agents (Murithi, 2014).

M-PESA is one of the most successful ventures which have moved beyond the world of consumer payments, offering special payment services to corporate customers and providing interest-bearing accounts to individual account holders. These transactions are facilitated via PIN-secured SMS text messages to other users, including traders of goods and services, and to withdraw deposits. Clients are charged a small fee for the services of sending and withdrawing money (Mendes et. al 2007). Ndii (2016) stated that M-Pesa is used by 2/3 of adults in Kenya and has many small businesses agents who transact about Ksh. 2 billion daily. Iraki (2016) states that M-pesa fascinates everyone and it is the pride of Kenya, however, it is more fascinating to learn that it failed in the advanced economy on the African continent namely, South Africa. M-PESA offers a paperless banking service called M-share which enables MSEs to open and operate bank accounts through their mobile phone devices without having to visit any commercial bank. M-Shari is a product of commercial bank of Africa and Safaricom. Cook and McKay (2015) explained that M-pesa provides MSEs with the ability to move money in and out of their M-Shari savings account to another M-PESA account at no charge. It gives them an opportunity to save as little as Ksh.1 and earn interest on their savings. M-Shwari enable MSEs to access micro loans instantly on their M-PESA accounts. Therefore, using M-Pesa infrastructure, M-Shwari has managed to bring benefits of banking services to MSEs in the informal sector(Mirzoyants-McKnight & Artfield, 2014).

Billy and Suri (2012) observed that mobile money transfer services allow users to hold money in a virtual "stored value" account maintained in a server by a service provider and operated by users through their mobile phones. It should be noted that even if the owner of the account loses a handset, the money is still safe on the account. According to William et al (2009) M-Pesa is the most popular money transfer services in Kenya, and its growth is stronger than any other financial options of banks and postal services. Hughes and Lonie (2010)observed that the potential of mobile phones to revolutionize access to financial services in developing countries is exemplified powerfully by the success of the M-Pesa mobile money services in Kenya. Users of these services can withdraw or deposit money with an M-Pesa agent and use the available balance to, for example, a) buy airtime; b) debt payments; c) pay for goods; d) pay bills; e) send airtime to other mobile users; f) pay salaries; and g) store money for everyday use. Payments of M-Pesa play an important role in facilitating informal economic activities (Heyer and Mas (2009).

Suri (2009) argues that whether M-Pesa will boost the savings rate of the Kenyan population is a point of concern for researchers. However, in an economy in which entrepreneurial activity growth is often hindered by lack of access to capital, the prospect of such change is quite welcome. Nonetheless, mobile phone money transfer requires considerably higher entrepreneurial capabilities than airtime sales due to the higher working capital movements, and required treasury management expertise. He further stated that the ability of retail stores to

conduct agent businesses for mobile phone money transfer scheme will depend on how easily they can rebalance the liquidity portfolio, which would be hard to achieve if commercial bank penetration is too low.

William et al (2009) noted that some of the problems experienced by M-Pesa services users are: a) agents lacked funds; b) could not retrieve money gone astray; and c) users not knowing how to complain to customer service. It should be noted that these problems are acknowledged by service providers and are in the process of being eliminated. William et al (2009)further noted that compared to other alternatives of sending money, M-Pesa is quicker, safer, convenient, cheaper, and easy to use.

MSEs Products and their Costs

A product is an item that can be offered to a market to satisfy a human want or need (Kotler, Armstrong, Brown, and Adam, 2006). Litondo (2013) categorized MSE products as fast-moving consumer goods or slow moving consumer products. Fast moving consumer goods are products that can be sold quickly and at relatively low cost. In addition, Majumdar (2004) and Briefly (2002) classified fast-moving products as non-durable goods such as soft drinks, toiletries, over-the-counter drugs, newspapers processed foods and many other consumables like milk and bread while slow-moving products are durable consumer goods like fridges, TV sets, sofa sets, which are generally replaced over a long period of time. Products associated with MSEs in the informal sector include selling fruits and vegetables, food vendors, selling clothes and shoes (both second hand and new), kiosks, small retailers or hawkers or roadside sellers, small fabricators, production building carpentry and repair of goods (World Bank, 2006).

Product cost refers to the expense incurred to create a product. These expenses include direct labor, direct materials, consumable production supplies, and factory overhead recorded in monitory terms. Product cost can also be considered the cost of the labor required to deliver a service to a customer. In the latter case, product cost should include all costs related to a service, such as compensation, payroll taxes, and employee benefits.

The cost of a product on a unit basis is typically derived by compiling the costs associated with a batch of units that were produced as a group, and dividing by the number of units manufactured. The calculation is:

Product unit cost = (Total direct labor + Total direct materials + Consumable supplies + Total allocated overhead) / Total number of units

Product cost can be recorded as an inventory asset if the product has not yet been sold. It is charged to the cost of goods sold as soon as the product is sold, and appears as an expense on the income statement. Product unit price is the summation of total unit cost of production plus profit margin (Kotler, Armstrong, Brown, & Adam, 2006).

Micro and Small Enterprises

The Micro and Small Enterprises (MSEs) in Kenya are the small businesses employing less than 10 workers and largely found in the informal sector. Meier and Rouch (2000) described MSEs in the informal sector as characterized by ease of entry, reliance on indigenous resources, family ownership of enterprises, small scale of operations, labour intensive, and adapted technology, skills acquisition outside the formal education, unregulated and competitive markets. MSEs usually operate in the open sun under no roof. It is estimated that there are 8 million MSEs in Kenya that account to 50% of the GDP and employing over 80% of the Kenyan labour force (Kerrow, 2016). The government is focused to rejuvenate the sector as per the Kenya Vision 2030 to address the issue of poverty and unemployment in the country. Mitullah and Odek (2002) observed that many small and micro enterprises are using mobile phones for business transactions even in this era of globalization. This observation was made before the introduction of internet enabled mobiles, and therefore gave the impression that mobile phones could not be used for international business transactions. The mobile service providers in Kenya have made it possible for international money transfers to be affordable as their charges are reasonable. Frempong and Essegbey (2006) explained that formality plays an important role in the type of ICT facility used by MSEs in Ghana. The ownership of fixed lines computers and internet belonged to the formal category, while the usage of mobile phones was more pronounced in informal MSEs. The reasons given were that most informal sector players operate in temporary and makeshift structures, most often referred to as unauthorized places, therefore the nature of such structures require ICTs that can be carried along when the business relocates.

Informal Sector in Nairobi

Posta and Heifer (2014) described the informal sector or informal economy as a section of the economy where commercial MSEs are neither taxed nor monitored by government. They further stated that even though MSEs in the informal sector contribute a lot to the economy, their contribution is not included in the growth national product GNP. Informal sector employs a greater share of Nairobi's labour force, but it is not adequately regulated nor supported by the City Council. Kiosks and hawkers are still largely seen as threats to city development instead of opportunities and resources. Lack of services and infrastructure severely constrains the economic development of the informal sector, particularly in the slums" (UN-Habitat, 2006). Informal economy of Nairobi accounts for an estimated half of the city's labour force. Despite its economic importance, this sector is not given the right policy and urban planning treatment it deserves from the City. These traders often operate "illegally" in restricted areas where the City enforcement section is always having endless battles with them. Efforts to relocate traders in designated trading spaces have been unsuccessful mainly due to the approach and the sites identified. A striking phenomenon is the nature of informal street markets that have developed along the main entries of the low income and middle income neighbourhoods in the city. Roads entering the informal settlements are the best examples this phenomenon of peak street vending (Reinecke, 2002).

Street vending is dynamic and strategic; hence the successful regularization and integration the informal sector in the formal city functions need to be approached with significant consideration

on how street vending spatially manifests itself in the urban spaces. Street vendors locate their customers not the customers locating the street vendors-that is the core principal underpinning the street informal economy (Mitullah, 2003). The informal economy is also as a result of the markets and its existence is responding to a demand that the markets have created. The livelihood significance it has to millions of households in country and more for slum households cannot be ignored. The only option at disposal seems to be the adoption of planning that is responsive to the informal economy (Litondo, 2013).

Mitullah (2003) argues that the livelihoods of most inhabitants of Nairobi come from the informal economic activities. Bocquier (2005) contradicts this view by arguing that Nairobi remains one of the most formal urban labour markets in Sub-Saharan Africa, excluding South Africa, and that most urban income comes from the formal sector. Macharia (2007) explained that there exists a conflict for urban space in Nairobi between the informal economy representing the working class, and the formal economy belonging to those who own the means of production. The formal sector is recognized by the state and therefore, continues to yield privileges and preferences that the informal sector cannot afford to take for granted, and has had to fight for recognition as a sector that is making positive contribution to the economy. Mitullah (2006) observed that many attempts at addressing the informal sector have tried to formalize the sector, and therefore failed to recognize the fact that those operating within the sector have their own dynamics that require policy, legal, infrastructure and service support.

Macharia (2007) acknowledged that most of the MSEs in the informal sector, are owned by individuals who are well-off economically, mostly professionals and civil servants, or entrepreneurs who have been forced by a changing legal-political climate to exit the formal sector. Despite its limitations, the informal sector has become increasingly important in the Kenyan economy as a source of employment and income (Atieno, 2006). Kamunyori (2007) established that the informal sector activities in Nairobi, provide urban livelihoods and contribute substantially to the economy, and therefore, it is necessary to understand how the local government, formal businesses and informal MSEs can work together.

Muraya (2006) found out that MSEs in Nairobi cityhave been assisted by the government and donor funds in one way or another to attain their potential but more assistance is given to MSEs located in neighbourhoods that had security of tenure and open space for development. Mitullah(2003) explained that the creation of jobs within the informal sector in Nairobi is not necessarily dependent on direct public expenditure and commitment of public investment but more to the unemployment which is widespread among young urban dwellers.

Methodology

A cross-sectional survey research design was used because the study involved the investigations of attitudes feelings, opinions and perceptions. The target population was the MSEs operating in the informal sector in Nairobi County. Primary data was collected from 8 sub-counties of Nairobi County namely: Westland's, Amoretti, Makadara, Kamukunji, Embanks, Langat, Starehe, and Kasarani which are geographically dispersed. The choice was informed by the

variability in attributes of MSEs and the environment under which the MSEs operated. Without this variety, one would not be able to test the hypotheses postulated because the study would have concentrated in only one location, and attributes across MSEs may not vary sufficiently. Line transect sampling technique was used in collecting data from the respondents. Data was collected from 384 MSEs and Linear regression model was used to estimate the results. Ntale (2013) used linear regression model to estimate the effect of economic activity diversification on the livelihoods of smallholder agriculture in Thika. Correlation analysis was used to estimate the association of mobile phone usage with unit prices of products and business characteristic. The correlation coefficients were estimated using the following formula:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Where:

        r = Sample correlation coefficient

        n = Sample size

        x = Mobile phone usage

        y = Unit price of the product

Regression analysis was used to estimate the effect of M-Pesa usage on the price of products of MSEs as it is assumed that use of M-Pesa has an effect on the prices of products. For easy interpretation of the results, the log of unit prices of products was used as a dependant variable, i.e. log of unit cost of fast and slow moving products. The linear regression model of the unit cost of products of MSEs is expressed in the following equation:

$UC_i = \beta_0 + \beta_1 MU_i + \beta_2 PC_i + \beta_3 BC_i + \beta_4 L_i + e_i$

Where:

UC_i stands for the log of unit cost of products of MSE i. UC_i is a dummy variable that takes a value of one if unit cost of a product were reported to have increased prior to the survey and a value of zero if otherwise. MU_i represents a dummy variable for mobile usage for payment of goods. PC_i and BC_i are vectors for personal characteristics of the owner manager and MSE characteristics' respectively; while L_i represents location dummies. In the linear model, the parameters $\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 in the linear regression model were estimated by OLS.

Results and Discussions

Correlations of mobile phone usage and unit prices of products with selected variables

Table 1shows correlation coefficients of mobile phone usage with characteristics of owners and the businesses. It should be noted that a correlation only estimates an association and not causality. For example, one cannot say that one variable is causing the other variable to change. The correlation shows the strength of association between variables and it ranges from +1 to -1, indicating that the variables can move in the same or opposite directions.

In the ensuring discussion, a 10% change in a variable is used as an arbitrary base for determining the degree of association between variables. Correlation of the use of mobile phone with the unit price of an MSE products shows that a 10% rise in the probability of increase in unit prices of product is associated with a 3.97% increase in the probability of using a mobile phone for business. Similarly a 10% increase in the probability of mobile usage is associated with a 3.97% increase in the probability of the unit price increasing. These results show that there is a strong relationship between mobile usage for business and unit price going up although one cannot tell if mobile usage is the one causing an upward movement in unit price or when unit prices go up MSEs tend to use mobiles to transact businesses.

A 10 percent increase in the number of employees of an MSE is associated with an 8.1% increase in the probability of using a mobile phone for e-commerce, or a 10 percent increase in the probability of using a mobile phone for business is associated with an 8.1% increase in the number of employees. These results indicate that there is some relationship between mobile phone usage in e-commerce and the number of employees of an MSE, the number of employees in the MSE could be the reason for mobile usage or the mobile usage could be the factor affecting employment.

Apart from a 10% base, a 100% base can also be used to assess the degree of association between variables. The correlation of the number of calls made in the last 2 days (to the interview date) with mobile usage for business transactions gives a positive relationship although not as strong as would be expected. A 100% increase in the number of calls made, e.g. a doubling of calls from 3 to 6, is associated with a 23.6 percent increase in the probability of using a mobile phone for e-commerce. Since one cannot tell what is causing this relationship, it can also be said that a 23.6 percent increase in the number of calls is associated with a 100% increase in the probability of using a mobile phone to transact business.

Using a comparison base of 1% change in a variable in a discussion of correlation coefficients of age of the business and the mobile usage for e-commerce shows some positive relationship, although not a very strong one. A 1% increase in the mean age of a business is associated with a 0.0216% increase in the probability of usage of mobile phone in e-commerce. The relationship of total sales and the use of mobile phone for business transactions is not very strong, whereby a 1% increase in total sales is associated with a 0.146% increase in the probability of using a mobile phone. Education and mobile usage have a positive correlation although not a very strong one, as a 1% increase in the average education of the owner manager of an MSE is related to a 0.146% increase in the probability of using a mobile phone for e-commerce.

Gender and mobile usage have a positive but weak relationship, whereby a 10% increase in the proportion of men in the sample is associated with a 0.36 % increase in the probability of using a mobile phone. The age of the owner is negatively correlated with the chance of a mobile being used for business. A 10% increase in the average age of business owners is associated with a 0.84% decrease in mobile phone usage. A 10% increase in education of owner managers is associated with a 2.23% decrease in the average age of business owners. The correlation coefficients give some idea about the strength of association between selected variables and the usage of the mobile phone for e-commerce. The correlations can serve as rough guides in formulating models for analyzing determinants of mobile usage in e-commerce as well as models for assessing effects of the models on performance of MSEs.

Table 1: Selected correlation coefficients of mobile use with attributes of business and owner characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Mobile used in business transactions (1 = yes)	1.0000									
2. unit priceincrease due to mobile usage (1 = unit cost increased)	0.3966	1.0000								
3. Number of employees	0.0809	0.0063	1.0000							
4. Number of calls made in the last 2 days	0.2360	0.1599	0.1908	1.0000						
5. The age of the business	0.0216	-0.0288	0.2676	0.1074	1.0000					
6. Total sales in Kenya shillings.	0.1464	0.1584	0.1359	0.1497	0.1342	1.0000				
7. Education of owner manager	0.1463	0.0677	0.0982	-0.0144	-0.2088	0.1234	1.0000			
8. Gender (1 = male)	0.0360	0.0360	0.1461	0.1455	0.1521	0.1882	-0.1098	1.0000		
9. The age of business owner	-0.0842	-0.0098	0.0975	0.0611	0.5196	0.0049	-0.2234	0.1007	1.0000	
10. Export/import (1 = uses mobile phone to export/import)	-0.0782	-0.0887	0.0428	-0.0487	0.0269	0.0222	-0.1258	0.0163	0.0271	1.0000

Source: Compiled by Author

In table 2 unit cost from fast and slow moving products were transformed into log unit cost of fast and slow moving products respectively for easy interpretation. The results show that MSEs that use M-Pesa for business transaction increase log ofunit costof fast moving products and slow moving products 104.2% ($t = 4.38$) and 107.4% (3.32) respectively as compared to MSEs that are not using the phone to businesses transaction. On controlling for the effects of other variables, such as owner and business attributes and location of the MSEs, the effect of M-Pesaincrease the log of unit cost from fast moving products is 80% (3.18) while that of the log unit cost for slow moving products is 61.6% (1.80). OLS estimates show that MSEs using M-Pesa in e-commerce are able to increase the unit prices of first moving items significantly while those using mobile phones to pay for slow moving items do not have a significant effect on slow moving items. The reason could be that M-Pesa payment services enable MSEs to reach niche markets and therefore, to charge premium prices. Most of the slow moving products require large amounts of money that cannot be held in an M-Pesa account and therefore, payments are done using other channels such as cash or cheques although the later is rare in the informal sector.

Men in the informal sector experience an increase of 41.5% ($t = 1.96$) in unit price of fast moving products as compared to women. Having business records increases the unit price of products of fast moving items by 72.5% ($t = 2.92$), the unit price of slow moving items by 473% ($t = 1.4$). Keeping records of business transactions has a positive impact onunit price of products. The locations of MSEs have no effects on unit priceof products.It should be noted that Kamukunji was one of the sub-counties where some sales ran into millions of shillings; the division is specifically identified with metal fabrication activities. The model for the effect of mobile usage onunit prices of thefast moving items has an $R^2$of 0.0611 while the R^2 of the equation of fast moving items controlled by the other independent variables is 0.113 and for total amounts equation. The p-values for F-statistics suggest that the hypothesis that M-Pesa usage for e-commerce has no effect on sales amounts should be rejected. R^2 for the slow moving product model is 0.0360 before controlling for the other variables and 0.0873 after controlling for the other variables. Meaning that,8.73% of the changes in the slow moving items can be explained by all the variables included in the model. The R^2 forthe goodness of fit of the equation for the fast moving items is 0.036% and that for equation of the slow moving items is 0.0873%. Therefore, null hypothesis that all variables jointly have no effect on unit prices of products is rejected since the p - values are all equal to almost zero.

Table 2: The effect of M-Pesa Usage on Unit Prices of products

(Absolute-Statistics in parentheses)

Variables	Specifications							
	Unit Cost (Ksh) from fast moving products		Unit Cost (Ksh) from slow moving products		Log Unit Cost from fast moving products		Log Unit Cost from slow moving products	
Communication Technology								
M-Pesa (1 = Usage of M-Pesa)	804.45 (1.89)	739.43 (1.61)	841.98 (1.58)	552.06 (0.96)	1.0419 (4.38)	.8000 (3.16)	1.0738 (3.32)	.6167 (1.80)

Owner and business attributes							
Owner Age		50.95 (2.51)		28.89 (1.14)		.0179 (1.61)		.0106 (0.70)
Education level		53.16 (0.75)		88.45 (1.00)		-.0040 (-0.10)		.1569 (2.96)
Business account (1 = keeps accounts)		793.33 (1.75)		753.90 (1.34)		.7254 (2.92)		.4731 (1.40)
Gender (1 = male)		151.52 (0.39)		818.44 (1.70)		.4152 (1.96)		.1829 (0.64)
Sub-county dummies (Kasarani is omitted)							
Westlands		-493.29 (-0.60)		65.19 (0.06)		.5175 (1.15)		.8659 (1.42)
Dagoretti		-601.63 (-0.73)		-307.35 (-0.30)		.1531 (0.34)		.3275 (0.53)
Makadara		-889.30 (-1.07)		-691.15 (-0.67)		.1181 (0.26)		.0228 (0.04)
Kamukunji		401.63 (0.49)		83.79 (0.08)		.1389 (0.31)		.1812 (0.30)
Embakasi		-34.22 (-0.04)		1119.26 (1.07)		.2294 (0.50)		.7862 (1.26)
Langata		-870.62 (-1.06)		-595.45 (-0.58)		-.3823 (-0.85)		.3266 (0.53)
Starehe		-229.27 (-0.28)		-29.00 (-0.03)		.2827 (0.64)		.7619 (1.27)
Constant	127.7083 (0.34)	-2345.12 (-1.89)	203.92 (0.44)	-2440.98 (-1.58)	3.9694 (19.17)	2.6964 (3.95)	3.4491 (12.24)	.9553 (1.03)
R^2	0.0120	0.0562	0.0084	0.0462	0.0611	0.1113	0.0360	0.0873
F - statistics (p-value)	3.57 (0.0597)	1.38 (0.1729)	2.51 (0.1141)	1.13 (0.3376)	19.19 (0.0000)	2.91 (0.0008)	11.01 (0.0010)	2.22 (0.0110)
Observations	297	292	297	292	297	292	297	292

Source: Compiled by Author

Conclusion and Recommendations

Mobile phone application of M-Pesa has brought in a new dynamism in Kenyan trade and hence paradigm shift in the way MSEs operate. M-peas is inessential element in wealth creation of MSEs and it is one of the biggest evolutions in the banking industry. For public and private enterprises in Kenya, M-Pesausage is transforming trade since it is able to by-pass the barriers of the tradition commercial bank account. The dynamism in communication technology together with the falling prices of mobile phones has made it easy and convenient for MSEs to pay and also receive payment for their products. M-Pesais providing a safe and reliable means for receiving and making payments for products. In Kenya, M-Pesa allows

MSEs to deposit, withdraw, transfer money, pay utility bills, purchase goods and services, pay salaries and benefits via the mobile phones. M-Pesa infrastructure therefore, has managed to bring commercial banking services to the MSEs in the informal sector. M-Pesa is enabling MSEs in the informal sector to reach niche markets and therefore charge premium prices for their products and hence make more profits.

The study recommends that MSEs should be sensitized to use B2B platforms such as e-bay, Amazon, Alibabaand M-Pesafor efficient and effective business transactions. Kenya should strive to build capacity through training in e-commerce.

Government should encourage MSEs to use M-pesa in their business transitions to reduce trade barriers, increase efficiency. Mobile phone applications increases access to market information that is necessary for MSEs to effectively engagenichemarketsto improve their profits. In order to achieve these goals, MSEs require new revenue-sharing models, such as those in which all MSEs who contribute to a solution receive transaction-based revenues as opposed to the commonly used models where technology providers are paid upfront which is a capital expenditure-based scenario.

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