Transaction Costs and Project Performance Micro-Enterprises in Machakos County, Kenya

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ARTICLE INFO	ABSTRACT
	Purpose: The purpose of the study was to establish the influence of transaction costs on project performance of micro-enterprises in Machakos County, Kenya. **Methodology:** The study adopted a descriptive research design. Purposive sampling technique was used to select the sample for the study. Questionnaire was used for data collection as it was cost effective as opposed to other instruments. The research instruments were tested for reliability using the split half method. This was done by collecting data from 60 respondents. Data was verified and edited for completeness and consistency. Content analysis and descriptive analysis was employed. Regression analysis was applied to establish the relationship between the variables. **Results:** The findings revealed that there was a negative Pearson correlation of -.279 (or -27.90%) between transaction costs and project performance implying that an increase in transaction costs reduces the level of project performance among the micro-enterprises. The results also revealed that transaction cost and project performance are negatively and significantly related (β=-0.091 p<0.002). From hypothesis testing the study found that transaction costs have a significant effect on project performance of micro-enterprises. In addition transaction costs have a significant effect on financial services technology innovation of micro-enterprises. **Unique contribution to theory, practice and policy:** The study recommended that owners of micro enterprises should use mobile banking since it makes it easier for them to carry out their businesses operations. In addition use of internet banking makes it easier for owners of micro-enterprises to carry out their businesses operations. In addition, the study recommends that owners of micro enterprises should adopt use of internet banking since it does not require a lot of technical knowledge since it is simple to use hence convenient for business owners.

1.0 INTRODUCTION

Transaction costs associated with information asymmetry and market frictions contribute immensely towards influencing key decisions regarding human and physical capital accumulation and occupational choices. The market frictions are important in generating persistent income inequality or poverty traps. As noted by Demirguc-Kunt, Asli, Beck (2009) and Honohan (2008), in theories stressing capital accumulation, financial market imperfections determine the extent to which the poor can borrow to invest in schooling or physical capital.

In theories stressing entrepreneurship, financial market imperfections determine the extent to which talented but poor individuals can raise external funds to initiate projects. Thus, the evolution of financial development, growth and intergenerational income dynamics are closely related. Finance influences not only the efficiency of resource allocation throughout the economy but also the economic opportunities of individuals from moderately rich or poor households. The use of mobile banking attempts to reduce these market frictions for low income groups. Information asymmetry is a situation where by the one party has more or better information than the other (Chibba, 2009). Dermirguc-Kunt and Levine (2009) argue that reducing financial market imperfections to expand individual opportunities creates positive but not negative incentive effects. Mobile banking and internet banking is not influenced by these transaction costs.

The reason behind including perceived cost in the framework is because it plays an important role for micro enterprises in determining adoption of ICT in their business. The costs of the service was considered as one of the most vital factors in the decision making process. This is because it determines the ability of the customer to use the service depending on availability of the specified amount and the set budget. Perceived cost is the quantifiable costs of acquiring and use of technology (Koenig-Lewis, Palmer, & Moll, 2010). Referring to Luarn & Lin's, (2005) definition, perceived financial cost is "the extent to which a person believes that using mobile banking and internet banking was to cost money." The Micro enterprises were less likely to adopt ICT when its initial set-up cost was high. Poon & Swatman (1996) and Reynolds (1994) stated that micro enterprises often have difficulty in obtaining financial resources. Any new technology like Information and Communication Technology may be considered too expensive to many micro enterprises because of their lack of financial resources.

Tidd (1997) established that micro enterprises face specific problems in the formulation of their innovation strategies due to their limited resources and range of technological competencies. Mobile and internet banking provide technological services that reduce costs; increase income and increases and the mobility of financial resources. They can help to extend social as well as business networks and they clearly substitute for journeys, brokers, traders and other business intermediaries (Donner, 2005; Hughes & Lonie 2007). According to Ivatury (2006), mobile banking systems provide good money transfer and payment services to mobile and internet users. There was however the need to ensure that better marketing and training was involved to help consumers understand what the systems are capable of,, improve policy measures and that the benefits of mobile banking are distributed across all banking and consumer sectors.

1.1 Statement of the Problem

The Kenya financial sector is still under-developed as compared to other developed economies even with the invention of mobile and internet banking. Financial services including credit, payment of services and savings are currently being offered to Micro enterprises through mobile and internet banking thus increasing project performance. The highest percentage (about 65%) of the Kenyan population resides in the rural areas though only 5% of the rural populations have access to banking facilities. This implies that majority of the micro-enterprises run by the rural population may also be excluded from financial services.

In view of the increasing innovations in the financial sector and increase in adoption of mobile and internet banking, it is desirable that these technologies are adopted for purposes of project performance of the rural unbanked population where a number of micro enterprises are setting up. Many of the micro-enterprises operating in rural areas in Kenya remain 'unbanked' with majority being excluded in the mainstream financial services due to some factors that have been cited as; inaccessibility, inconvenience and high costs (World Bank, 2015).

In Kenya for instance, internet banking has been ranked as less important than other channels such as mobile banking (World Bank, 2013). The slow adoption of technology in the banking sector has received little attention in the empirical literature. Although mobile and internet banking have been found to contribute to project performance, there is scarce empirical literature that focuses on the antecedents of financial services technology adoption and their influence on project performance among micro-enterprises. Specifically, it is not clear how the need for transaction cost influences project performance There is also very little empirical clarity on how mobile banking and internet banking influence project performance in the Kenyan context and more specifically in Machakos County which is one of the largest rural counties in Kenya. Consistent with the identified knowledge gaps, the study sought to establish the relationship between transaction costs and project performance of micro-enterprises in Machakos County, Kenya.

1.2 Objective of the Study

The study sought to establish the relationship between transaction costs and project performance micro-enterprises in Machakos County, Kenya.

1.3 Research Hypothesis

H_0: Transaction costs has no significant influence on project performance of micro-enterprises in Machakos County, Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Diffusion Innovations Theory

According to Rogers (1995) who developed this theory, innovation is an idea, act, or instrument that is new to an individual or a group of people while diffusion is a process in which new technology is transferred through certain channels of communication in time among individuals

who are targeted to use new Information System. Diffusion Innovations Theory has five innovation characteristics thus relative advantage, compatibility, complexity and observability. These variables may look different and unrelated to each other but in reality have everything to do with each other in the context of Information system, others have argued that Technology Acceptance Model and Diffusion Innovations Theory are only theoretically related to each other. Moore and Benbasat (1991) established that the relative advantage construct Diffusion Innovations Theory is similar to the notion of the PU in Technology Acceptance Model, and the complexity construct in Diffusion Innovations Theory captures the Perceived Usefulness in the technology acceptance model, although the variables sound different. According to Medlin, (2001) and Parisot, (1995) Rogers' diffusion of innovations theory is the most appropriate theory among all theories for investigating the adoption of technologies in higher education and educational environments.

Rogers came up with five critical attributes that have a great influence on the rate of adoption. These attributes include relative advantage, compatibility, trialability, complexity and observability. If a financial institution sees the benefits that come with mobile and internet banking, they adopt these innovations provided other factors like availability of the required tools. Adoption of mobile and internet banking is faster in areas and organizations that have internet access and information technology departments than those without (Rogers, 2010).

It might seem like these models are different and unrelated with each other but they are related in the context of information systems. Some researchers have argued that TAM and DIT are only related theoretically. Moore and Benbasat (1991) found out that the relative advantage construct in DIT is similar to the notion of the PU in TAM, and the complexity construct in DIT captures the PEU in the technology acceptance model, although the variables sound different.

The main aim of this theory in the entire research is that the person must perceive the idea, behavior or product as new or innovative, this makes diffusion possible. Diffusion of innovation theory tries to explain and describe ways in which new inventions which in our case is mobile and internet banking are adopted and become successful. Innovations can take a long time before they get adopted and not all inventions get adopted regardless their quality. We can also state that resistance to change may hinder diffusion of innovation although it might not stop the innovation, it will slow it down.

2.2 Empirical Review

2.2.1 Transaction Costs

Transaction costs associated with information asymmetry and market frictions play a central role, influencing key decisions regarding human and physical capital accumulation and occupational choices. These market frictions are critical in generating persistent income inequality or poverty traps. According to Demirguc-Kunt, Asli, Beck and Honohan (2008) in theories stressing capital accumulation, financial market imperfections determine the extent to which the poor can borrow to invest in schooling or physical capital. In theories stressing entrepreneurship, financial market imperfections determine the extent to which talented but poor individuals can raise external funds to initiate projects. Thus, the evolution of financial development, growth and intergenerational income dynamics are closely intertwined.

Finance influences not only the efficiency of resource allocation throughout the economy but also the comparative economic opportunities of individuals from relatively rich or poor households. The use of mobile banking attempts to reduce these market frictions for low income groups. Information asymmetry is a situation where by the one party has more or better information than the other (Chibba, 2009). Dermirguc-Kunt and Levine (2009) argue that reducing financial market imperfections to expand individual opportunities creates positive, not negative, incentive effects. Mobile banking is not influenced these transaction costs.

The reason perceived cost is included in the framework is because it plays an important role for SMEs in determining adoption of ICT in their business. The costs of the service is considered as one of the most imperative factors in the decision making process. This is because it determines the customer's ability to use the service depending on availability of the specified amount and their set budget. Perceived cost is the perceived quantifiable costs of acquisition and use of technology (Koenig-Lewis, Palmer & Moll, 2010).

According to behavioral decision theory, the cost-benefit pattern is significant to both perceived usefulness and ease of use of technology (Mohan & Potnis, 2015). This is because if consumers perceive the cost of mobile money service as acceptable, they will adopt it easier, and then use it. According to Yu (2012) economic motivations and outcomes are most often the focus of financial services technology but service cost consideration may prevent many people from choosing mobile money service. Furthermore, hardware/software and financial resources are important for users of an information system (Micheni, Lule, & Muketha, 2013). Financial cost is likely to directly influence the user's intention to use digital financial services.

Kpodar and Andrianaivo (2011) found a positive correlation between project performance and mobile penetration. They note that mobile phone penetration improves credit allocation process, leading to broader presence in the financial system. ICT and mobile network services guarantee a better flow of information. This helps decrease both information asymmetry and transaction costs of providing financial services to the deprived (Donovan 2012; Kpodar and Andrianaivo 2011b). This reduction in transaction costs between lenders and creditors is made possible as it ensures timely availability of information (Demirgüç-Kunt et al. 2008).

Mobile banking and mobile payments have the ability to expand financial services to the unbanked and under-banked by reducing transaction costs and growing the accessibility of financial products and services (Woodhouse, 2016). While financial system regulators can use their legal powers to force project performance on the population, the consequence of such action is that the population may register on a digital finance platform but may not use it to perform basic transactions. This then creates a new problem for digital finance providers that hope to make profit from large volumes of financial transaction via digital Fintech platforms (Shaikh, 2017). Furthermore, smart individuals and businesses can suspect that there are ulterior motives behind involuntary inclusion because they know that inclusion should be voluntary. It is still unknown whether forced inclusion will be effective. Assuming forced project performance can be imposed on the 'banked' population by enforcing financial ultimatums, the enforcer will sooner or later realize that ultimatums only

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works for the population that have formal bank accounts, not for the unbanked population (Khan, 2011).

Digital finance has improved access to financial services by under-served groups by reaching remote locations. The promise of digital finance to reach scale, reduce costs and broaden access is unparalleled (Han & Melecky, 2013). Financial services could be provided to more people with greater speed, accountability, and efficiency. It may also be a means of coping with change in the regulatory environment and driving down the costs involved in meeting the corresponding requirements (Lim & Kang, 2014). Innovations from FinTech players may speed up transfers and payments and cut their costs. In the area of cross-border transfers, FinTech companies can provide faster banking services at lower cost as well as be a means of coping with change in the regulatory environment and driving down the costs involved in meeting the matching requirements.

By utilizing the technology advancement, Fintech has facilitated numerous financial services with better user experience and lower cost (Malady, 2016). This financial services technological sector, despite being recently developed, has instituted its solid ground for building the imminent financial products. Due to their lower fixed costs, improved customer experience, and efficiency improvements, Fintech companies are threatening the banking and investment sphere. FinTech innovations have helped banks deliver enhanced risk assessment, lower fixed asset investment requirements, reduce transaction costs, make operational back offices more efficient and enter new markets. At the same time, banks can help FinTech innovators address their target markets (Russel, 2017).

3.0 METHODOLOGY

The study adopted a descriptive research design since it seeks to build a profile about the relationship between antecedents of technology adoption (mobile and internet banking) to project performance in Kenya. The study was targeting micro enterprises operating in Kenya with a special focus to Machakos County. Purposive sampling technique was used to select the sample for the study. Questionnaire was used for data collection as it was cost effective as opposed to other instruments. Pilot testing involved 60 businesses which were not included in the final sample. To enhance validity in this study, content related validity of the questionnaire was used. On the other hand, reliability was assessed using the test-retest method and was done alongside the pilot study. The researcher selected a pilot group comprising 10% of the sample. The research instruments were tested for reliability using the split half method. This was done by collecting data from 60 respondents. Data was verified and edited for completeness and consistency. Content analysis and descriptive analysis was employed. Regression analysis was applied to establish the relationship between the variables.

4.0 FINDINGS AND DISCUSSIONS

4.1 Transactions Costs in micro-enterprises

The study was to determine the extent to which respondents agreed with factors relating to transaction costs in micro-enterprises. The response was rated on a scale of 1-5 on which: 1=

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Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree. The findings are presented on Table 1

Table 1: Transaction Costs

	Mean	Standard Deviation
It is expensive for micro-enterprises to buy own a mobile phone to facilitate mobile banking transactions	2.24	1.31
It is expensive for micro enterprises to facilitate internet banking transactions	2.39	1.17
M-banking transaction fee is expensive while executing business transactions	3.66	1.14
Internet banking transaction fee is expensive while executing business transactions	3.55	1.05
The costs of undertaking business transaction via the mobile banking platform in affordable to micro-enterprises	3.69	1.13
The costs of undertaking business transaction via the internet banking platform in affordable to micro-enterprises	3.95	1.00
Mobile service providers have affordable cost of sending or receiving money.	3.78	1.10
Internet service providers have affordable cost of sending or receiving money.	3.83	1.06
M-banking is affordable to the customers of the micro-enterprises	3.73	1.12
Internet banking is affordable to the customers of the micro-enterprises	3.93	1.08
Average	**3.48**	**1.12**

Based on the findings presented on Table 1, majority of the respondents disagreed with the statement that it is expensive for micro-enterprises to buy own a mobile phone to facilitate mobile banking transactions (M=2.24; SD=1.31). The results also showed that majority of the respondents disagreed with the statement that it is expensive for micro enterprises to facilitate internet banking transactions (M=2.39; SD=1.17). The results also showed that majority of the respondents agreed with the statement that M-banking transaction fee is expensive while executing business transactions (M=3.66; SD=1.14). The results showed that majority of the respondents agreed with the statement that internet banking transaction fee is expensive while executing business transactions (M=3.55; SD=1.05).

The results showed that majority of the respondents strongly agreed to the statement that the costs of undertaking business transaction via the mobile banking platform in affordable to micro-enterprises (M=4.55; SD=0.934). The respondents agreed with the statement that the costs of undertaking business transaction via the internet banking platform in affordable to micro-

enterprises (M=3.95; SD=1). The results showed that majority of the respondents agreed with the statement that mobile service providers have affordable cost of sending or receiving money (M=3.78; SD=1.1). Majority of the respondents agreed with the statement that internet service providers have affordable cost of sending or receiving money (M=3.83; SD=1.06). Further respondents agreed with the statement that M-banking is affordable to the customers of the micro-enterprises (M=3.73; SD=1.12). The results revealed that majority of the respondents agreed with the statement that internet banking is affordable to the customers of the micro-enterprises (M=3.93; SD=1.08).

The findings are in line with the findings by Jack and Suri (2014) that revealed a great reduction in transaction costs and entrepreneur's ability to conduct financial transactions over the phone without having to travel to banks. Omwansa (2009) in his study also established that micro-enterprises adopt mobile and internet banking because of affordability as compared to other banking services at the banking hall.

4.2 Correlation between Transaction costs and project performance
Table 2 gives the results of overall correlation between the study variables. The results of each variable have been explained under its own subheading.

Table 2: Full correlation of antecedents and project performance

		FI	TC
Project performance	Pearson Correlation	1	
	Sig. (2-tailed)		
Transaction cost(TC)	Pearson Correlation	-.279**	1
	Sig. (2-tailed)	<0.001	

** Correlation is significant at the 0.01 level (2-tailed).

There was a negative Pearson correlation of -0.279 (or 27.90%) between transaction cost and project performance of micro-enterprises. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs.

4.3 Regression Analysis

4.3.3 Transaction costs and project performance

The regression analysis between transaction cost and project performance among micro-enterprises in Kenya was done on the data and the results presented in Table 3.

Table 3: Model Summary of transaction costs and project performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

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| 1 | .279a | 0.078 | 0.076 | 0.59907 |

Dependent Variable: **project performance**

From Table 3 presents an R^2 result of 0.078 or 7.8%, meaning that the independent variable, transaction cost alone can explain up to 7.8% of the total variability in the dependent variable, project performance of micro-enterprises in Kenya. The remaining 92.2% of the variation in the dependent variable is unexplained by this one predictor model but by other factors not included in the model. Similarly an ANOVA test was performed on the influence of transaction costs and the results obtained are presented in Table 4 ANOVA result was obtained as presented in Table 4.33

Table 4: ANOVA for Transaction costs and project performance

	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**
Regression	14.333	1	14.333	39.938	P<0.001
Residual	169.754	473	0.359		
Total	184.087	474			

From the ANOVA Table 4 the model is statistically significant as the p-value is less than .05. The values of $F_{(1, 473)} = 39.938$, $p < 0.05$, shows that transaction costs statistically and significantly predicts project performance of micro-enterprises (i.e., the regression model is a good fit of the data) and that transaction costs significantly influence the project performance of micro-enterprises. This means that alternative hypothesis that transaction costs influence project performance of micro-enterprises is accepted. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs. The findings further agrees with that of Kim et.al., (2015) who argued that financial services technology has disrupted the financial services industry and is creating opportunities by providing accessibility, new ways to transact, and more convenient retail banking experience for consumers worldwide

Table 5: Coefficients of Transaction costs and project performance

	β	**Std. Error**	**t**	**Sig.**
(Constant)	4.310	0.131	32.982	< 0.001
Transaction cost	-0.242	0.038	-6.32	< 0.001

Dependent Variable: **project performance**

Optimal Model

project performance = 4.310 – 0.242 Transaction Cost + ε

To complement the ANOVA findings on Transaction costs and project performance of micro-enterprises in Kenya presented in Table 5, Pearson's correlation coefficients were also generated. The results of the Pearson's correlation are presented in Table 5. These results show that transaction costs contributes a statistically significant value (p-value< 0.001) of -.242 to the regression model. The value of transaction cost is statistically significant (t=-6.32, p<.05). From

the coefficient Table 5, Transaction costs and project performance of micro-enterprises in Kenya contributes a statistically significant value (p-value< .001) of -.068.

The multiple regression analysis results indicate that transaction cost has a negative statistically significant predicts project performance; $p < 0.05$ (p<0.001) i.e. an increase in mean index of transaction cost increases the project performance of micro-enterprises by a negative unit mean index value of -6.8% per cent. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs. The findings further agrees with that of Kim et.al., (2015) who argued that financial services technology has disrupted the financial services industry and is creating opportunities by providing accessibility, new ways to transact, and more convenient retail banking experience for consumers worldwide

4.4 Hypothesis testing of Transaction Cost and project performance of micro-enterprises

The results in Table 5, above indicated the acceptance rule was that, if the p value is greater than 0.05, the Ho_1 is not rejected but if it's less than 0.05, the Ho_1 fails to be accepted.

The null hypothesis was that there is no significant relationship between transaction cost and project performance of micro-enterprises. Results in Table 5 above show that the p-value was 0.015<0.05. The results in Table 5 further revealed that tcal (6.32)> tcritical (1.96) and thus the null hypothesis was rejected. This indicated that the null hypothesis was rejected hence there is a significant relationship between transaction cost and project performance of micro-enterprises. Therefore the study concluded that transaction cost influence project performance of micro-enterprises. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs. These findings agreed with that of (Ketterer, 2017) who found that FinTech applications in financial services have the ability to multiply outsourcing opportunities, further helping to reduce transaction costs. Therefore;

There is a significant relationship between transaction costs and project performance *of micro-enterprises.*

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The findings revealed that there was a negative Pearson correlation of -.279 (or -27.90%) between transaction costs and project performance implying that an increase in transaction costs reduces the level of project performance among the micro-enterprises. The results also revealed that transaction cost and project performance are negatively and significantly related (β=-0.091 p<0.002). The regression model showed that transaction cost negatively affects the project performance of micro-enterprises, that is, an increase in mean index of transaction cost decreases the project performance of micro-enterprises by a negative unit mean index value of -0.242. The multiple regression analysis results indicate that transaction cost has a positive statistically significant predicts project performance; $p < 0.05$ (P=0.001) i.e. an increase in mean index of

transaction cost increases the project performance of micro-enterprises by a negative unit mean index value of -24.2% per cent.

This model summary presented an R^2 result of 7.8 or 7.8%, meaning that the independent variable, transaction cost alone can explain up to 7.8% of the total variability in the dependent variable, project performance of micro-enterprises in Kenya. The remaining 92.2% of the variation in the dependent variable is unexplained by this one predictor model but by other factors not included in the model. From hypothesis testing the study found that transaction costs have a significant effect on project performance of micro-enterprises. In addition transaction costs have a significant effect on financial services technology innovation of micro-enterprises.

5.2 Conclusion

The study concluded that transaction cost has a negative and significant effect on project performance. The use of mobile and internet banking has reduced transaction costs for enterprises hence high levels of profitability. For instance, most enterprises can check their financial statements using mobile devices without having to travel physically to the banking halls.

5.3 Recommendations

The study recommended that owners of micro enterprises should use mobile banking since it makes it easier for them to carry out their businesses operations. In addition use of internet banking makes it easier for owners of micro-enterprises to carry out their businesses operations. In addition, the study recommends that owners of micro enterprises should adopt use of internet banking since it does not require a lot of technical knowledge since it is simple to use hence convenient for business owners.

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