

## Mobile Banking Accessibility and Growth of MSEs: A Case of Licensed MSEs in Makueni Sub- County

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**Purpose:** The current study focused on the influence mobile banking systems on the growth of the MSEs in Makueni Sub- County..

**Methodology:** The descriptive research design was employed to conduct the study and targeted 2000 licensed MSEs in Makueni Sub-County. Then, a purposive sampling technique was used to obtain 200 micro and small entrepreneurs who utilize mobile banking, a 10% sample size of the entire population. The study used primary data obtained using survey questionnaires. Descriptive data analysis was the conducted using averages, counts, percentages and deviations. Inferential statistics were also used to present the causal influence between the variables.

**Results:** The findings further indicated that m-banking accessibility results in a significant and positive influence on growth of MSEs ( $\beta=0.182$ ,  $p=0.000$ ).

**Contribution to policy and practice:** In the wake of the COVID-19 pandemic, the use of mobile money transactions is recommended to the MSEs since it has been shown to have a significant reduction influence on insecurity issues, cost of transactions and improve accessibility to financial services. It means that mobile money services help MSEs in Kenya achieve greater financial inclusivity and therefore, an assured and sustained growth. To the policy makers, the findings suggest that there is need to solidify and enforce strong digital policy that promotes cashless payment. This goes a long way to encourage the firms and small-scale entrepreneurs in the country to integrate financial developments in their businesses such as PayPal in websites, social media marketing, e-wallets, mobile banking etc. the policy can encourage MSEs to go regional and even global by utilizing the web-based platforms and acquiring markets across-borders.

## INTRODUCTION

Mobile banking solutions have permitted the accessibility and transportation of funds from financial firms to disadvantaged individuals in remote and industrial areas at transactional rates far lower than those given by banking industry, allowing banks to serve the cashless economy (Jenny, 2010). Financial institutions may now access very many new clients than ever before, while also offering them with financial solutions at their comfort wherever in the nation, thanks to enhanced safety and cost-effectiveness (Porteous, 2006). Information and communication innovation have a massive impact on the financial industry, resulting in ever more adaptable transaction options and user-friendly financial solutions. Since the 1980s, key technologically upgraded goods and services ranging from automated teller machines (ATMs) to e-banking are now accessible worldwide, round the clock, each day of the week (Liao & Cheung, 2002). More than a decade ago, it seemed apparent that the web projected a major transformation in consumer banking, with Business Week emphasizing that “financial sector is necessary to a modernized business, banks are not optional” (Tan & Teo, 2000).

Mobile banking is beneficial to various categories of users, telecommunication providers and financial institutions. In light of best practices in mature mobile banking markets, (Goswami and Raghavendran, 2009) noticed the accompanying benefits to end-clients; secure verification, exchange and information transmission, easy to understand interface, contactless instalments, dynamic record checking, constant admittance to account data, extraordinary obligation and bill instalment and omnipresent admittance to banking administrations. These advantages have prompted expanded incomes in different endeavours. In terms of benefits to the m-banking, mobile financial promotes client loyalty and retention by providing new improved services.

There have been somewhat a couple of studies zeroing in on how mobile innovation is utilized to improve efficiency among clients in the creating scene (Doner, 2005). The World report noted that the rise of mobile phone use in non-industrialized countries resulted in a 0.8 percent increase in these countries economic growth (World Bank, 2012). As a result, mobile cash entry has had its own responsibility, notably relating to financial representativeness. The efficiency and security of mobile banking systems has facilitated easy and fast money transfers. This has sparked the growth of various financial activities, notably in rural areas, by increasing currency flow and promoting local use (Zutt, 2010).

In UK, while consideration as of late has been on serving the purchaser market, the SME market creates c.£14bn in financial income and ten to fifteen per cent profit from value return on equity addressing a critical chance for existing and arising monetary foundations. There is presently more grounded rivalry in the UK small and medium enterprise banking scene. 10 years prior, a small and medium enterprise would go to the customary banks or to specialty experts for wellsprings of money. Today, there is a lot more extensive scope of choices, with every supplier taking a stab at basic portion of the overall industry. This came after the UK Government proposed subbing the 2014 responsibilities with a changed bundle of measures, with the goal of advancing rivalry on the lookout for banking administrations to small and medium enterprise. The Alternative Remedies Package was concurred on a basic level in July 2017 and officially supported by the European Commission on 18 September 2017 (EY, 2018).

Proof proposes that many individuals in non-industrial nations have restricted admittance to formal monetary administrations, and this is valid for most SMEs (FINMARK Trust, 2017; Tengeh, 2011). While a few components form the structure part of the small and medium

enterprise advancement bundle, the requirement for simple admittance to back has arisen over and over (Tengeh and Gahapa Talom, 2020). Despite the fact that SMEs in Cameroon utilize around 72% of the labor force, not many are primarily and monetarily steady (National Institute of Statistics, 2018). Small and medium enterprise in Cameroon are generally family-claimed organizations and are exceptionally cash-subordinate. Subsequently, this makes it undeniably challenging for these organizations to execute with a provider without going to their premises, also the danger of losing cash or robbery (Gual, 2018).

For those small and medium enterprise with bank account holders, in addition to bank fees, paperwork, and transportation charges, an entrepreneur must go and often line for hours at least before collecting cash, rendering it difficult to take full leverage of any potential that may come that necessitates funding. Since most of small and medium enterprises are family-claimed or sole-proprietor organizations that work in an extremely informal way (for instance, just the proprietor or one of his relatives traded out), the proprietors are regularly constrained to leave their premises unattended for various hours daily when they visit the bank or really close down, missing out on deals and accordingly contrarily affecting their endurance (Mararo, 2018).

In Kenya, research show that the convenience of cash transfer technologies, as well as its openness, cost, backing, and security aspects, are associated with the societal aim to utilize and actually employ mobile instalment by SMEs to increase their sales and profitability (Mbogo, 2010). It has also been noticed that SMEs in Kenya benefited significantly from the m-banking since they can make expenditures and access multiple clients and agents (Arunga & Kahora, 2007).

The exceptional advances towards cell phone access have resulted in seen a consistent improvements and developments all from the new and continuous innovations. A fitting financial climate is viewed as a vital column just as an empowering agent of monetary development (Koivu, 2002). With the ever-increasing surge of the data-driven industry, Kenya's banking sector has clearly demonstrated that it is unable to fight creative enthusiasm. The constant growth and modification of banking systems has resulted from the demand for useful means of gaining access to monetary assets beyond the conventional norms. With the high demand for finance-related operations, traditional banks have entered the fray, attempting to also benefit from this opportunity in the economic industry. The testimony has been that the cell device will be the primary single access requirement or boundary to the resulting m-banking (Sarker & Wells, 2003).

Cellular payment is used in numerous nations across the globe when connectivity is lacking, particularly in distant and remote regions. This m-commerce phenomenon is also prevalent in nations where the general populace is financially excluded. In Kenya, micro-enterprises have begun to use mobile payments resulting in increased financial inclusion such as savings, deposits, healthcare, and exchanges. The original study goal is to evaluate the influence mobile banking has on microenterprises in rural regions, with an emphasis on Makueni Sub-County.

### **Statement of the Problem**

Lack of access to banking and other financial services by MSEs operators is a major hindrance to the economic growth of many developing countries (Eton et al., 2021; Madan, 2020; Osano & Languitone, 2016). Majority of MSEs are found in rural and semi-urban areas where there is no proper infrastructure to access banking services thus cannot safely mobilize their savings and access credit facilities which are key ingredients to business expansion (Madan, 2020).

Eton et al. (2018) note that SMEs have less constitutional immunity and stimulation from all players, and as a result, they are unable to prolong development of the economy. Collateral requirements continue to be a major consideration for banks in extending credit to MSMEs in 2020 as was the case in 2017 (Central Bank of Kenya, 2021). Approximately half of them experience the challenge of lack of capital; lacking access to grant funding and inability to sustain cash flow (SESOK, 2018). This makes the mortality rate of SMEs extremely high as 5 out of 7 new businesses SMEs fail in their first year (Eton et al., 2021). This high failure rate has a direct impact on the National GDP and also contributes to unemployment. The cost of providing banking services has remained exceedingly high due with the average cost of recovery to MSMEs, as a percentage of the outstanding loan amount, standing at 6.3 percent for commercial banks and 12.9 percent for microfinance banks (Central Bank of Kenya, 2021).

Despite increase in usage of m-banking by MSEs operators, there is no obvious evidence of growth in MSE's. Mutisya (2016) conducted a study in Kitui County but did not take into consideration the impact of financial accessibility among micro businesses in the informal sector in other Counties like Nairobi. Kirui (2016) looked into mobile money services and sales of MSEs in Nakuru Town. Muhandachi (2020) investigated the adoption of m-banking and financial performance of MSEs in Bungoma county. Kitigin et al. (2021) focused on E-Banking and Performance of MSEs in Kenya. Karanja (2020) investigated the use of mobile financial services among SMEs In Kiambu County. The above-mentioned studies indicate the clear gap that exists especially in the case of MSEs in Makeni Sub-County, Kenya. This warrants the current study to determine the impact of m-banking accessibility on the growth of MSEs in Kenya.

## Theoretical Background

### TAM (Technology Acceptance model)

TAM is technologically skewed model that was first modelled by Fred Davis to inform the acceptance and usage of technological systems by users (Davis, 1985). The TAM is utilized for displaying client acknowledgement of data frameworks. TAM's goal is to clarify the factors of PC acceptance (Davis, 1989) based on two assumptions (perceived usefulness and perceived ease of use) (Davis, 1989). This model is for the most part used to consider customer affirmation of the development. According to TAM, seen esteem PU and saw comfort PEU sway one's demeanor towards structure use, which impacts one's direct assumption to use a system, which, subsequently, chooses genuine system use (Venkatesh & Davis, 2000).

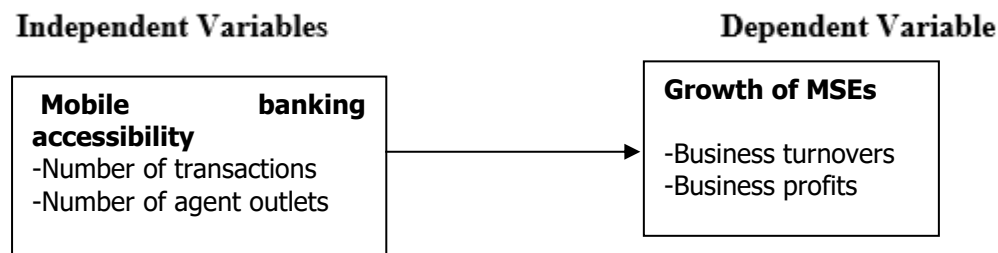
The model has been progressed and utilized in numerous business and pioneering settings, for example, the medical care, training, banking and public assistance areas. The development of m-banking has empowered clients to accept E-trade with the utilization of portable exchanges. This includes web-based shopping, appointments, e-tickets, utilization of credit/charge cards, the development of M-wallet and cryptography among others (Madan, 2016; Lee, 2017). The model is exceptionally instrumental to the review since it establishes a framework on which organizations and people can see the value in development in the financial area Davis, 1989).

The model is found instrumental in the study since it informs the principles underlying user acceptance of digital systems towards improvement of financial accessibility, inclusion and performance in general. With the inclusion of digital systems and developments in the Micro and Small enterprises (MSEs), it implies that the MSEs will have better accessibility and inclusivity to financial services.

## METHODOLOGY

The descriptive research design was employed to conduct the study and targeted 2000 licensed MSEs in Makueni Sub- County. Then, a purposive sampling technique was used to obtain 200 micro and small entrepreneurs who utilize mobile banking, a 10% sample size of the entire population. The study used primary data obtained using survey questionnaires. Descriptive data analysis was the conducted using averages, counts, percentages and deviations. Inferential statistics were also used to present the causal effect between the variables.

### Conceptual Framework



**Figure 1: Conceptual Framework**

## FINDINGS

### Descriptive statistics

The descriptive results in this part represent the mean/averages, percentages, counts and their summary in form of deviations of the variable statements and questions.

### Mobile banking Accessibility

The study sought to indicate the extent to which access to financial services is affected by m-banking (Table 1):

**Table 1: Accessibility of m-banking services**

To what extent do you access financial services through m-banking?	Frequency	Percentage
Very Great extent	103	63.2
Great extent	4	2.5
Moderate extent	15	9.2
Less extent	41	25.2
<b>Total</b>	<b>163</b>	<b>100</b>

From the 163 responses drawn from the study, 65.7% of them acknowledged that there is a great extent of them accessing m-banking services. The study also sought to indicate the extent to which their customers transact through m-banking has affected their access financial services through m-banking (Table 2):



**Table 2: Customers transaction through m-banking**

<b>6. To what extent do you access financial services through m-banking?</b>	<b>Frequency</b>	<b>Percentage</b>
Very Great extent	36	22.1
Great extent	13	8.0
Moderate extent	71	43.6
Less extent	43	26.4
<b>Total</b>	<b>163</b>	<b>100</b>

From the 163 responses drawn from the study, 43.6% of them accepted that their customers access financial services through m-banking to a moderate extent. The study also sought to indicate the extent to which accessibility of m-banking services has affected the growth of MSEs whose results are in Table 3:

**Table 3: Descriptive findings for accessibility of m-banking services**

<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>M</b>	<b>S D</b>
I am able to pay my suppliers through mobile banking with ease	10%	15%	9%	34%	31%	3.62	1.33
I am able to access my bank account for savings deposits and cash withdrawals with ease at any time of the day.	4%	5%	5%	45%	40%	4.13	1.01
I am able to borrow a loan and pay through my mobile phone with ease	24%	28%	9%	15%	24%	2.88	1.53
Mobile banking transaction amount limits per transaction need to be increased to widen access to banking	4%	3%	22%	47%	24%	3.83	0.97
I get banking services within expected time at my convenience from our nearest agents through mobile banking	5%	12%	26%	41%	15%	3.50	1.05
<b>Average</b>						<b>3.59</b>	<b>1.18</b>

From Table 3, 65% of the subjects agreed that they are able to pay my suppliers through m-banking with ease (mean=3.62≈4, SD=1.33). Likewise, 85% of the subjects agreed that they are able to access my bank account for savings deposits and cash withdrawals with ease at any time of the day. (mean=4.13≈4, SD=1.01). Likewise, 52% of the subjects agreed that they are not able to borrow a loan and pay through my mobile phone with ease (mean=2.88≈3, SD=0.97).

In addition, 71% of the subjects agreed that m-banking transaction amount limits per transaction need to be increased to widen access to banking (mean=3.83≈4, SD=0.97). 56% of the subjects agreed that they get banking services within expected time at my convenience from our nearest agents through m-banking (mean=3.50≈4, SD=1.05). Generally, given the accessibility of m-banking services, the average mean of 3.59 and an SD of 1.18 indicates that accessibility of m-banking services has affected growth of MSEs.

These findings correspond to Musango (2018) who indicated that time, privacy, control and economy are among the important aspects that enterprises are concerned with in banking transactions. Likewise, according to Wentz and Tressler (2017), new technological

applications in the banking and money framework could start to address a portion of the issues identified with openness and security. For instance, one arising space of safety innovation is voice biometrics, which breaks down individual voice exhibits to verify the individual.

### Growth of MSEs

The study sought to indicate the extent to which the growth of MSEs in Makueni Sub-County, Kenya has performed (Table 4):

**Table 4: Descriptive findings for growth of MSEs**

Statements	1	2	3	4	5	M	SD
Improving sales turnovers for the business	2%	1%	22%	51%	24%	3.94	0.82
Improving business profitability	2%	11%	25%	43%	19%	3.66	0.97
Improving access to financial services like savings, loans, insurance	7%	6%	31%	12%	45%	3.81	1.27
Improves on loan repayment management and reduces default on loans.	1%	0%	5%	58%	37%	4.30	0.62
Improves on maintenance of financial records in the business	7%	4%	9%	46%	34%	3.96	1.10
<b>Average</b>						<b>3.93</b>	<b>0.96</b>

From Table 4, 75% of the subjects agreed that there has been improving sales turnovers for the business (mean=3.94 $\approx$ 4, SD=0.82). 62% of the subjects agreed that there has been improving business profitability (mean=3.66 $\approx$ 4, SD=0.97). 57% of the subjects agreed that there has been improving access to financial services like savings, loans, insurance (mean=3.81 $\approx$ 4, SD=1.27).

Likewise, 95% of the subjects agreed that there has been an improvement on loan repayment management and reduces default on loans (mean=4.30 $\approx$ 4, SD=0.62). 82% of the subjects agreed that there has been an improvement on maintenance of financial records in the business (mean=3.96 $\approx$ 4, SD=1.10). Generally, given the growth of MSEs, the average mean of 3.93 and a SD of 0.96 indicates that a positive growth of MSEs in Makueni Sub-County, Kenya.

The findings correspond to Coffie et al. (2020) who noted that banking technological advancements in developing nations make it a lot simpler and less expensive for ventures to look into items and to build up different financial associations. The availability and/or accessibility of M-banking is one of the fundamental benefits of M-banking administrations. SMEs are among the most likely to benefit from m-banking (Coffie et al., 2020). The SMEs visit the bank less frequently and devote more time and effort to the upkeep of their businesses. Likewise, many financially excluded businesses individuals in Africa's non-industrial economies will now be able to obtain or transfer money from wherever in the region. The majority of SMEs are aware of the employment of flexible financial operations because they are simple to use and do not necessitate any traditional arrangement before use (Pinchot et al., 2016). Pinchot et al. (2016) found a statistically significant relationships between access to m-banking and intention to use mobile payments.

## Regression between m-banking and growth of MSEs in Makueni Sub-County in Kenya

**Table 5: Fitness of the model**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877a	0.769	0.763	0.191

Table 5 presents a coefficient of determination of 0.769 (76.9%) indicating that the four variables in the study are good predictors of growth of MSEs in Makueni Sub-County, Kenya, thus represent a statistically fit model.

**Table 6: Analysis of variance**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.068	4	4.767	131.287	.000b
Residual	5.737	158	0.036		
Total	24.804	162			

Table 6 presents a significant model where the F statistic is greater than F critical values at significance ( $F_{\text{statistic}} = 131.287 > F_{\text{critical}} = 2.463 (4, 158)$ ). This implies that m-banking accessibility, costs of m-banking services, security of m-banking transactions and the efficiency of m-banking services are significant and satisfactory factors affecting growth of MSEs in Makueni Sub-County, Kenya ( $p = 0.000$ ).

$F_{\text{statistic}} = 131.287 > F_{\text{critical}} = 2.463 (4, 158)$ .

**Table 7: Regression of coefficients**

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	Beta		
(Constant)	-0.440	0.193		-2.282	0.024
Accessibility of mobile banking services	0.182	0.042	0.199	4.289	0.000
Costs of mobile banking services	0.191	0.043	0.203	4.466	0.000
Secure mobile banking transactions	0.450	0.045	0.446	10.089	0.000
Efficiency of mobile banking services	0.330	0.044	0.331	7.534	0.000

Table 7 revealed that m-banking accessibility has a positive and significant influence on growth of MSEs in Makueni Sub-County, Kenya ( $\beta = 0.182, p=0.000$ ), indicating that 1 unit of m-banking accessibility leads to an improvement in growth of MSEs in Makueni Sub-County, Kenya by 0.182 units. These findings correspond to Wentz and Tressler (2017), new technological applications in the banking and money framework could start to address a portion of the issues identified with openness and security. For instance, one arising space of safety innovation is voice biometrics, which breaks down individual voice exhibits to verify the individual.



## CONCLUSION AND RECOMMENDATIONS

### Conclusions

On an average majority of the respondents agreed that there is a great extent of them accessing m-banking services. Likewise, to a moderate extent, they indicated that their customers access financial services through m-banking. Therefore, given the accessibility of m-banking services, the average mean of 3.59 and an SD of 1.18 indicates that accessibility of m-banking services has affected growth of MSEs.

The findings further indicated that m-banking accessibility results in a significant and positive impact on growth of MSEs in Makueni Sub-County, Kenya ( $\beta = 0.182$ ,  $p = 0.000$ ), indicating that 1 unit of m-banking accessibility leads to an improvement in growth of MSEs in Makueni Sub-County, Kenya by 0.182 units. These findings correspond to Wentz and Tressler (2017), new technological applications in the banking and money framework could start to address a portion of the issues identified with openness and security. For instance, one arising space of safety innovation is voice biometrics, which breaks down individual voice exhibits to verify the individual.

### Recommendations of the Study

There is need for an intensified campaign to sensitize the MSEs on the importance of mobile money transfer services owing to their flexibility and improved security as compared to carrying physical cash. This is evident especially in the current 21<sup>st</sup> century where technology has exploded to many developing countries.

Amidst the COVID-19 pandemic, the use of mobile money transactions is recommended to the MSEs since it has been shown to have a significant reduction influence on insecurity issues, cost of transactions and improve accessibility to financial services. It means that mobile money helps Kenyan MSEs achieve greater financial inclusivity and therefore, an assured and sustained growth.

To the policy makers, the findings suggest that there is need to solidify and enforce strong digital policy that promotes cashless payment. This goes a long way to encourage the firms and small-scale entrepreneurs in the country to integrate financial developments in their businesses such as PayPal in websites, social media marketing, e-wallets, mobile banking etc. the policy can encourage MSEs to go regional and even global by utilizing the web-based platforms and acquiring markets across-borders. For instance, by social media marketing, online selling, and online payments.

### References

- Achieng, B. M., & Ingari, B. K. (2015). Factors influencing the adoption of mobile banking in Kenya's commercial banks: A case of Kenya Commercial Bank (KCB) Kilindini branch. *International Journal of Scientific and Research Publications*, 5(10), 1-14.
- Adewoye, J. O. (2013). Impact of mobile banking on service delivery in the Nigerian commercial banks. *International Review of Management and Business Research*, 2(2), 333.
- Akinyede, R. O., & Esese, O. A. (2017). Development of a secure mobile e-banking system. *International Journal of Computer (IJC)*, 26(1), 23-42.

- Arunga J. and Kahora B. (2007). Cell phone Revolution in Kenya. *International Policy Network*.
- Banerjee, Abhijit; Duflo, (2006) *Addressing Absence, Journal of Economic Perspectives* 20(1):117–132.
- Bare, M. A. (2017). *Provision Of Banking Services and Financial Performance of Small and Micro-Enterprises In Garissa County, Kenya* (Doctoral Dissertation, Kenyatta University).
- Beck, T., Demirgüç C., Laeven L., and Vojislav M., (2006). “The Determinants of Financing Obstacles.” *Journal of International Money and Finance* 25 (6): 932–52.
- Belsky, G., & Gilovich, T. (2010). *Why smart people make big money mistakes and how to correct them: Lessons from the life-changing science of behavioral economics*. Simon and Schuster.
- Bowen, M., Morara, M., & Mureithi, S. (2009). Management of Business Challenges Among Small and Micro Enterprises in Nairobi Kenya. *KCA Journal of Business Management*. Vol.2(1) 16-31
- CBK. (2020). Banking Sector Innovation Survey 2020. [https://www.centralbank.go.ke/uploads/banking\\_sector\\_reports/1232186390\\_Banking%20Sector%20Innovation%20Survey%202020.pdf](https://www.centralbank.go.ke/uploads/banking_sector_reports/1232186390_Banking%20Sector%20Innovation%20Survey%202020.pdf)
- Central Bank of Kenya. (2021). 2020 MSME FinAccess Business Survey Report. [https://www.centralbank.go.ke/uploads/banking\\_sector\\_reports/1275966539\\_2020%20Survey%20Report%20on%20MSME%20Access%20to%20Bank%20Credit%20-%20Final%20-%202015%2007%2021.pdf](https://www.centralbank.go.ke/uploads/banking_sector_reports/1275966539_2020%20Survey%20Report%20on%20MSME%20Access%20to%20Bank%20Credit%20-%20Final%20-%202015%2007%2021.pdf)
- Chao, C. M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in psychology*, 10, 1652.
- Coffie, C. P. K., Zhao, H., & Adjei Mensah, I. (2020). Panel econometric analysis on mobile payment transactions and traditional banks effort toward financial accessibility in Sub-Saharan Africa. *Sustainability*, 12(3), 895.
- Davis, F D (1989) “Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology”. *MIS Quarterly* 13 (3), 319-339.
- Dewan, S. M. and Dewan, A. M. (2010) Modelling choice of mobile technology for m-banking. *The 2010 International Conference on Industrial Engineering and Operations Management*.
- Drexelius, K. & Herzig, M., “Mobile Banking and Mobile Brokerage – Successful Applications of Mobile Business?”, *International management & Consulting*, Vol.16, No. 2 (2001): 20-23.
- Durkin, M., Howcroft, B., O'Donnell, A., McCartan-Quinn, D. (2003), Retail bank customer preferences: personal and remote interactions, *International Journal of Retail & Distribution Management*, Vol. 31 No.4, pp.177-89.
- Eisenmann, T., Parker, G., Van Alstyne, M.W. (2006), Strategies for two sided markets, *Harvard Business Review*, No.11October.

- Eton, M., Fabian, M., Benard, P. O., Edaku, C., & Dennis, O. (2018). Financial Inclusion and Women Empowerment in Uganda A Case of Lango Sub Region, Northern Uganda.
- Eton, M., Mwosi, F., Okello-Obura, C., Turyehebwa, A., & Uwonda, G. (2021). Financial inclusion and the growth of small medium enterprises in Uganda: empirical evidence from selected districts in Lango sub-region. *Journal of Innovation and Entrepreneurship*, 10(1), 1-23.
- EY. (2018). *The future of SME banking Minds made for redefining financial services December 2018*. <https://www.smefinanceforum.org/sites/default/files/blogs/EY-The-future-of-SME-banking.pdf>
- FINMARK Trust. (2017). *Cameroon Pocket Guide; FINMARK Trust*: Johannesburg, South Africa.
- Florina Bran, 2009. "[The Roll Of Financial Assistance In The Implementation Of Environmental Policy](#)," *Management Research and Practice*, Research Centre in Public Administration and Public Services, Bucharest, Romania, vol. 1(1), pages 58-61, December.
- Gesare, S. (2020). *Factors Affecting Adoption of Mobile Banking by Commercial Banks in Kenya* (Doctoral dissertation, University of Nairobi).
- Goswami D. and R. Raghavendran (2009) "Mobile-banking: can elephants and hippos tango?" Deloitte Development LLC Accessed 25 June 2009.
- Govindarajan, Vijay, and Chris Trimble. [The Other Side of Innovation: Solving the Execution Challenge](#). Boston, MA: Harvard Business School Publishing, 2010.
- Gual, E. (2018). *The Critical Issue of Cash Flow for SMEs*. Available online: <https://blog.strands.com/cashflowand-smes> (accessed on 5 December 2019).
- Gupta, Anil K., Vijay Govindarajan, and Haiyan Wang. [The Quest for Global Dominance: Transforming Global Presence into Global Competitive Advantage](#). 2nd ed. San Francisco, CA: Jossey-Bass, 2008.
- Hardigan, P. C., Popovici, I., & Carvajal, M. J. (2016). Response rate, response time, and economic costs of survey research: a randomized trial of practicing pharmacists. *Research in Social and Administrative Pharmacy*, 12(1), 141-148.
- Heath, C., & Soll, J. B. (1996). Mental budgeting and consumer decisions. *Journal of consumer research*, 23(1), 40-52.
- Higgins, D., Kendall, J., & Lyon, B. (2012) Mobile Money Usage Patterns of Kenyan Small and Medium Enterprises. *Innovations: Technology, Governance, Globalization, Spring*. 7 (2), 67-81.
- Holbrook, M. B. (Ed.). (1999). *Consumer value: a framework for analysis and research*. Psychology Press.
- Hughes, N., & Lonie, S. (2007). M-PESA: mobile money for the "unbanked" turning cellphones into 24-hour tellers in Kenya. *Innovations: technology, governance, globalization*, 2(1-2), 63-81.

- International Finance Corporation. (2010). *The SME Banking Knowledge Guide IFC Advisory Services / access to financ.* <https://www.ifc.org/wps/wcm/connect/c6298e7b-9a16-4925-b6c0-81ea8d2ada28/SMEE.pdf?MOD=AJPERES&CVID=jkCVrZU>
- Jack, W., & Suri, T. (2014). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. *The American Economic Review*, 104(1), 183–223. <http://www.jstor.org/stable/42920692>.
- Jamgun, J. I. (2018). Effect Of Mobile Banking on Financial Performance Of Small Scale And Medium Enterprises In Kakamega County. *Strategic Journal of Business & Change Management. Strategic*. 4(55), 923 – 941.
- Jamgun, J. I. (2018). Effect Of Mobile Banking on Financial Performance Of Small Scale And Medium Enterprises In Kakamega County. *Strategic Journal of Business & Change Management. Strategic*. 4(55), 923 – 941.
- Jenny, C.A. & Isaac, M. (2010). Mobile Phones and Economic Development in Africa, *Journal of Economic Perspectives*, 24(3), 207-232.
- Jolly, V. (2016). The influence of internet banking on the efficiency and cost savings for banks' customers. *International Journal of Social Sciences and Management*, 3(3), 163-170.
- Jonsson, S., Gunnarsson, C. (2005), Internet technology to achieve supply chain performance, *Business Process Management Journal*, Vol. 11 No.4, pp.403-17.
- Karanja, K. K. (2020). *Utilization Of Mobile Financial Services Among Small Scale Businesses in Kiambu County, Kenya.* (Doctoral Dissertation, Kenyatta University).
- Karjaluoto, H. (2002), Selection criteria for a mode of bill payment: empirical investigation among Finnish bank customers, *International Journal of Retail & Distribution Management*, Vol. 30 No.6, pp.331-9.
- Khatun, M. N., Mitra, S., & Sarker, M. N. I. (2021). Mobile banking during COVID-19 pandemic in Bangladesh: A novel mechanism to change and accelerate people's financial access. *Green Finance*, 3(3), 253-267.
- Kimani, N. H., Ngugi, P. K., & Orwa, G. (2015). Challenges of Micro and Small Enterprises“(MSEs”) Finance Accessibility on Participation in Public Procurement Market in Kenya. *International Journal of novative Fance and Economics Research*, 3(4), 1-15.
- Kinyanzui, K. F., Achoki, G., & Kiriri, P. (2018). Effect of mobile credit on operational efficiency in commercial banks in Kenya. *Open Journal of Business and Management*, 6, 833-849. <https://doi.org/10.4236/ojbm.2018.64062>
- Kirui, R. K. (2016). *Effect of mobile money services on sales of micro and small enterprises in Nakuru Town, Kenya* (Doctoral dissertation, Egerton University).
- Kitigin, B., Korir, M., & Chepkwony, K. (2021). E-Banking Technology Characteristics and Performance of Micro and Small Enterprise in Kenya: A Moderated Mediation Model of Adoption and Innovative Behavior. *SEISENSE Journal of Management*, 4(1), 13-30.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques.* New Age International.

- Laukkanen, T. and Pasanen, M. (2008). Mobile banking innovators and early adopters: how they differ from other online users? *Journal of Financial Services Marketing*, vol. 13, no.2, pp. 86-94.
- Laukkanen, T., Lauronen, J. (2005), Consumer value creation in mobile banking services, *International Journal of Mobile Communications*, Vol. 3 No.4, pp.325-38.
- Lauren, P. and Lin, H. (2005). Towards an understanding of the behavioural intention to use mobile banking. *Computers in Human behavior*,21(6),873-891.
- Laws of Kenya (2009). *Banking Act Chapter 488. National Council for Law and Reporting*. WWW.Kenyalaw.org Accessed 18th August 2013
- Lee, M.S., McGoldrick, P.J., Keeling, K.A. and Doherty, J. (2003) Using ZMET to explore barriers to the adoption of 3G mobile banking services, *International Journal of Retail & Distribution Management*, vol. 31, ( 6), pp. 340-348
- Liao,Z. and Cheung M.T (2002).Internet based e-banking and consumer attitudes,*an empirical study*, *Journal of information management sciences* 39: 283-295
- Lin, Z., & Tang, Y. (2019). Distributed multi-channel MAC protocol for VANET: An adaptive frame structure scheme. *IEEE Access*, 7, 12868-12878.
- Long, H. (2014). An empirical review of research methodologies and methods in creativity studies (2003–2012). *Creativity Research Journal*, 26(4), 427-438.
- Madan, N. (2020). *A review of access to finance by micro, small and medium enterprises and digital financial services in selected Asia-Pacific least developed countries*. United Nations, ESCAP.
- Mallat, N. (2007). Exploring Consumer adoption of Mobile Payments- A Qualitative Study. *The Journal of Strategic Information Systems*, 16 (4), 413-432.
- Mararo, M. W. (2018). *Influence of mobile money services on the growth of SME in Nakuru Town Kenya* (Doctoral dissertation, JKUAT).
- Mas, I., & Radcliffe, D. (2010). *Mobile payments go viral: M-PESA in Kenya*. [https://books.google.com/books?hl=en&lr=&id=4LlaYqIyAWAC&oi=fnd&pg=PA353&dq=Ignacio+Mas+and+Dan+Radcliffe,Bill+and+Belinda+Gates+Foundation+\(2010\),+Mobile+Payments+go+viral:Mpesa+in+Kenya&ots=DVFvI6gE8w&sig=LAFYZkrNCUiZhy1aAZpmJcxdvXY](https://books.google.com/books?hl=en&lr=&id=4LlaYqIyAWAC&oi=fnd&pg=PA353&dq=Ignacio+Mas+and+Dan+Radcliffe,Bill+and+Belinda+Gates+Foundation+(2010),+Mobile+Payments+go+viral:Mpesa+in+Kenya&ots=DVFvI6gE8w&sig=LAFYZkrNCUiZhy1aAZpmJcxdvXY)
- Mathwick, C., Malhotra, N. K., & Rigdon, E. (2002). The effect of dynamic retail experiences on experiential perceptions of value: an Internet and catalog comparison. *Journal of retailing*, 78(1), 51-60.
- Mbogo, M. (2010). The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-Pesa in Kenya. *The Journal of Language, Technology & Entrepreneurship in Africa*, Vol2 (1), 182-203
- Momanyi, N., W. (2017). *An Assessment of Roles of Effective Distribution Channel On Customer Satisfaction In Retail Procurement Process: A Case Study Of Ouru Super Stores In Kisii Town, Kisii County, Kenya*. (Doctoral Dissertation, Kisii University).



- Muchiri, J. W. (2018). Effect of mobile banking adoption on the performance of small and medium enterprises in Nairobi County. *International Journal of Economics, Business and Management*, 2(4), 445-486.
- Mugenda, O. M., & Mugenda, A. G. (2003). Qualitative and quantitative approaches. *Research Methods Africa Center for Technology Studies (Acts) Press. Nairobi Kenya*.
- Muhandachi, G. (2020). *Adoption of mobile banking and financial performance of micro small and medium enterprises in Bungoma county, Kenya* (Doctoral dissertation, University of Nairobi).
- Muiruri, K., Richu, S., & Karanja, G. (2015). Role of Mobile Banking in Enhancing Financial Performance of Micro and Small Enterprises in Kenya: A Case Study of Nakuru Town. *International Journal of Economics, Commerce and Management*, 3(10), 604-618.
- Musango, D. M. (2018). *Mobile Banking Services and Financial Inclusion Among Commercial Banks in Nairobi City County, Kenya* (Doctoral Dissertation, Kenyatta University).
- Musavi, V. L., & Maingi, J. (2017). *Effect of credit and education on performance of micro and small enterprises in Kenya*. (Unpublished Doctoral dissertation, Kenyatta University).
- Mutio, F. M. (2019). *Influence of Mobile Banking Services on Performance of Micro Businesses in the Informal Sector in Kenya: A Case Study of Jua Kali Artisans in Nairobi County* (Doctoral dissertation, United States International University-Africa).
- Mutisya, R. (2016). *The Role of Mobile Banking on the Growth of Micro and Small Enterprises in Kitui County* (Doctoral dissertation, University of Nairobi).
- Mwenda, R. W. (2015). *Service Delivery Technologies and Performance of Commercial Banks in Kenya* (Doctoral dissertation, University of Nairobi).
- National Institute of Statistics. (2018). *Recensement General des Entreprises 2016; National Institute of Statistics: Yaoundé, Cameroon*. Available online: [http://slmp-550-104.slc.westdc.net/stat54/downloads/2018/Projet\\_de\\_rapport\\_preliminaire\\_RGE2\\_du\\_29\\_decembre\\_2017\\_final.pdf](http://slmp-550-104.slc.westdc.net/stat54/downloads/2018/Projet_de_rapport_preliminaire_RGE2_du_29_decembre_2017_final.pdf) (accessed on 4 December 2019).
- Ndubisi, N. O. (2007). Evaluating the Direct And Indirect Impact of Traits And Perceptions On technology Adoption By Women Entrepreneurs In Malaysia. *Academy of Entrepreneurship Journal*, 13 (2), 1-20.
- Ndubisi, N. O. (2007). Evaluating the Direct And Indirect Impact of Traits And Perceptions On technology Adoption By Women Entrepreneurs In Malaysia. *Academy of Entrepreneurship Journal*, 13 (2), 1-20.
- Ngaruiya, B. (2014). *Effects of mobile money transactions on financial performance of small and medium enterprises in Nakuru central business district* (Doctoral dissertation, Egerton University).
- Ngugi, E. W. (2016). *E-Commerce Security and Performance of SMEs in Nairobi, Kenya. Masters project. University of Nairobi*.

- Njanja, A. (2019, July 03). Kenya cyber-attacks rise to 11.2 million in first quarter. Daily Nation.
- Njenga, A. (2009). *Mobile phone banking: Usage experiences in Kenya*. (Unpublished MBA thesis, Catholic University of Eastern Africa).
- Normalini, M. K., Ramayah, T., & Shabbir, M. S. (2019). Investigating the impact of security factors in E-business and internet banking usage intention among Malaysians. *Industrial Engineering & Management Systems*, 18(3), 501-510.
- Nwosu, A. O. (2017). *E-commerce adoption by small and medium enterprises in Nigeria* (Doctoral dissertation, Walden University).
- Nyaga, K. M. (2017). *The impact of mobile money services on the performance of small and medium enterprises in an urban town in Kenya* (Doctoral dissertation).
- OECD. (2018). *Enhancing SME access to diversified financing instruments Plenary session 2*. <https://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Plenary-Session-2.pdf>
- Omwansa, T. (2009). M-PESA Progress and Prospects. *Innovations case discussion*. <http://www.strathmore.edu> (accessed 19th Oct. 2012).
- Osano, H. M., & Languitane, H. (2016). Factors influencing access to finance by SMEs in Mozambique: case of SMEs in Maputo central business district. *Journal of innovation and entrepreneurship*, 5(1), 1-16.
- Pagani, M. (2004). Determinants of adoption of third generation mobile multimedia services. *Journal of interactive marketing*, 18(3), 46-59.
- Paisner, J., Castonguay, A., & Collins, C. (2009). Mobile banking creates a bright spot within the struggling financial services industry. *White paper from Yankee Group*.
- Palen, L., Salzman, M., & Youngs, E. (2001). Discovery and integration of mobile communications in everyday life. *Personal and ubiquitous computing*, 5(2), 109-122.
- Peterson, R. A., Rudelius, W., & Wood, G. L. (1972). Spread of marketing innovations in a service industry. *The Journal of Business*, 45(4), 485-496.
- Petrova, K. (2002). Mobile banking: Background, services and adoption. In *Proceedings of the 2002 International Conference of the Global Business and Technology Association* (pp. 928-939).
- Pinchot, J. L., Mishra, S., Pullet, K. L., & Kohun, F. G. (2016). Exploring Barriers To Adoption Of Mobile Payments For University Students: Lack Of Awareness, Lack Of Availability, And Perceived Security Risks. *Issues in Information Systems*, 17(3).
- Pittruzzello, S. (1998). Integration of Telecommunications and Information Technology in the Finance industry. *Telecommunications Journal of Australia*, 48(1), 10-16.
- Poon, W.C. (2008). Users' adoption of e-banking services: the Malaysian perspective, *Journal of Business & Industrial Marketing*, vol. 23, (1), pp. 59-69.
- Popescu, C. R., Popescu, V. A., & Popescu, G. N. (2015). The Impact of Electronic Commerce on the Development of Nowadays Society: an Economic and a Managerial Perspective—A Case Study on Romania's Experience. *Manager Journal*, 22(1), 208-216.

- Porteous, D. (2006). *The enabling environment for mobile banking in Africa*. London: DFID.
- Pousttchi, K. (2003). Conditions for acceptance and usage of mobile payment procedures. *MPRA Paper 2912*. <https://mpr.aub.uni-muenchen.de/id/eprint/2912>
- Pousttchi, K., & Schurig, M. (2004, January). Assessment of today's mobile banking applications from the view of customer requirements. In *37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of the* (pp. 10-pp). IEEE.
- Qingfei, M. I. N., Shaobo, J. I., & Gang, Q. U. (2012). Mobile Commerce User Acceptance Study in China: A Revised UTAUT Model. *Methodology*, 374, 382.
- Quartey, P., Turkson, E., Abor, J. Y., & Iddrisu, A. M. (2017). Financing the growth of SMEs in Africa: What are the constraints to SME financing within ECOWAS?. *Review of development finance*, 7(1), 18-28.
- Reidenbach, R. E., & Moak, D. L. (1986). Exploring retail bank performance and new product development: a profile of industry practices. *Journal of Product Innovation Management*, 3(3), 187-194.
- Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, 36(3), 350-366.
- Rogers, E.M, Agarwala-Rogers, R (1976), *Communication in Organizations*, London. The Free Press
- Said, F. H., & Kaplelach, S. (2019). Mobile Banking Innovation and Financial Performance of Selected Commercial Banks in Kenya. *Journal of Finance and Accounting*, 3(3), 228-254.
- Samuel, W. W., & Kepha, O. (2021). Effects Of Technological Innovation Strategy In Performance Of Commercial Banks In Kenya. *International Journal of Entrepreneurship and Innovation*. 5(2), 69-79.
- Sarker, S., & Wells, J. D. (2003). Understanding mobile handheld device use and adoption. *Communications of the ACM*, 46(12), 35-40..
- SESOK. (2018). *The State of social enterprise in Kenya*. [http://socialenterprise.or.ke/assets/files/state\\_of\\_social\\_enterprise\\_in\\_kenya\\_british\\_council\\_final.pdf](http://socialenterprise.or.ke/assets/files/state_of_social_enterprise_in_kenya_british_council_final.pdf)
- Sessional Paper No. 2 (2005). *Development of Micro and Small Enterprise for Wealth and Employment Creation for Poverty Reduction*. Government printers, Nairobi
- Shafee, N. B., Suhaimi, S., Hashim, H., & Mohamed, Z. S. (2017). Customer Preferences in Selecting Commercial Bank in Malaysia. *Advanced Science Letters*, 23(11), 10925-10928.
- Siano, A., Raimi, L., Palazzo, M., & Panait, M. C. (2020). Mobile Banking: An Innovative Solution for Increasing Financial Inclusion in Sub-Saharan African Countries: Evidence from Nigeria. *Sustainability*, 12(23), 10130.

- Tan, M., and Teo, T.S.H. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for information Systems*, Vol. 1 No. 5, pp. 1-42.
- Tengeh, R. K. (2011). *A business framework for the effective start-up and operation of African immigrant-owned businesses in the Cape Town Metropolitan area, South Africa* (Doctoral dissertation, Cape Peninsula University of Technology).
- Tengeh, R. K., & Gahapa Talom, F. S. (2020). Mobile money as a sustainable alternative for SMEs in less developed financial markets. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 163.
- Thaler, R. (1985). Toward a positive theory of consumer choice. *Vodafone Policy paper series, No.2*.
- Thio, R. (2006). *The impact of microfinance on micro and small enterprise's performance and the improvement of their business opportunity* (No. 200601). Department of Economics, Padjadjaran University.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the association for Information Systems*, 17(5), 328-376.
- Wambari, A., & Mwaura, P. (2009). *Mobile Banking in Developing Countries , A Case Study of Kenya. Information Technology*, (Doctoral dissertation, Vaasan Ammattikorkeakoulu University of Applied Sciences).
- Wang, X., Truong, V. A., & Bank, D. (2018). Online advance admission scheduling for services with customer preferences. *arXiv preprint arXiv:1805.10412*.
- Wazid, M., Zeadally, S., & Das, A. K. (2019). Mobile banking: evolution and threats: malware threats and security solutions. *IEEE Consumer Electronics Magazine*, 8(2), 56-60.
- Wentz, B., Pham, D. (June), & Tressler, K. (2017). Exploring the accessibility of banking and finance systems for blind users. *First Monday*, 22(3). <https://doi.org/10.5210/fm.v22i3.7036>.