

# **Mobile Credit and Performance: Experience and Lessons from Micro and Small Enterprises in Kenya**

## **Abstract**

*Micro and small enterprises sector is considered as very important in growing the economies of many countries, especially the developing nations. In Kenya, the Micro and small enterprises sector is an important contributor to the growth of the economy through facilitation of trade and creation of employment. While various interventions have been made to grow this sector, the enterprises have continued to perform poorly, struggle to survive and a large number die off. This study sought to investigate the effect of mobile credit on performance of micro and small enterprises. The study was to determine the effect of accessibility, the effect of the cost, the effect of mobile credit loan amount and the effect of regulation on performance of micro and small enterprises. The study was anchored on various theories of Resource based view, Dynamic capabilities, Diffusion of technology, Credit rationing, and the asymmetry of information. The study found out that the accessibility of mobile credit, the Loan amount and the regulation have significant positive effect on performance while the cost of mobile credit has a significant negative effect on the performance of micro and small enterprises. The study concluded that mobile credit is an essential source of credit to micro and small enterprises.*

*Key words: Mobile credit, Micro and small enterprises, performance, Resource based view, Dynamic capabilities theory.*

## **1.0 Introduction**

Micro and Small Enterprises (MSE) have been identified as a major driver to the economy in many countries (Muathe, 2010). Worldwide the sector contributes up to 99% of the business enterprises, generates 50% to 60% of value creation and creates up to 70% of job opportunities in many economies (OECD, 2016b). Most developing nations especially in Africa derive an average of 33% of their economic growth from the MSME sector (IFC, 2010). Small businesses greatly contribute to the growth of economies in developing economies when the incomes of the populations begin to rise (Sveinung *et al.*, 2010).

In Kenya, the MSE sector contributes heavily to the countries social and economic goals by creating jobs, alienating poverty, and facilitating transition of goods and services to the market (Muteti, 2007). The Economic Survey report by the Central Bank of Kenya, (2016) demonstrated the contribution of MSE to the country's economy. The sector accounts for 85% of the businesses, contributes to 30% of the jobs created annually and contributes to up to 18% of the GDP. Rapidly growing economies have been associated with fast growing MSME among other factors (IEG, 2008)

The optimal performance of MSEs can only be attained when they access the required resources that support them. Since no single business has all resources, external actors who include government agencies, banks, suppliers, friends, and relatives provide the additional resources (Premaratne, 2001). Many of the micro and small enterprises however face obstacles and challenges that limit their access to these resources which eventually affects their performance and growth. The IFC survey (2010) on obstacles faced by Micro, Small and Medium enterprises done across 132 countries identified Financing, electricity, formal market access, taxes and political instability as the leading challenges that limit growth. These challenges affect businesses differently and may vary depending with the size of the business.

The source of finances is the greatest challenge faced at the micro and small business level (Khrystyna *et al.*, 2010). Reddy (2007) lists lack of several factors that include security, skills and capital as main factors impeding the income potential and growth of MSMEs in developing nations. MSMEs in East Africa struggle with many challenges which affect their performance. The challenges include accessing appropriate finance, business support as well as attracting qualified human resources (Brethenoux & Mulder, 2015).

Capital and financing are by no doubt the single most important factors that is necessary for the enhancing good performance in MSE. Unfortunately, most of this business face limited opportunities of accessing enough capital and credit to finance their operations. Commercial banks have for long held the misconception that lending to low income businesses and persons is risky and unsustainable. They believe that this BOP individuals do not save and are bad borrowers (Kimenyi & Ndungu, 2009). This premise has locked out many small businesses from financial services. Some attempts made by the banks to advance credit to MSEs has also been frustrated by various factors which include: High transaction costs incurred due to the small loan amounts hence unequal return to the administrative cost, poor structures of information in MSEs to facilitate credit appraisal (Information asymmetry), lack of collateral for loan security and difficult to separate the owner from the business (Thompson, 2013).

Most small business owners are in the low-income bracket and largely unbanked (Harnandez, 2011). The microfinance attempts to finance this small business owners worldwide has not been very successful since it could only reach a small fraction of the population (Kimenyi & Ndungu, 2009). Some growing MSE have been pushed to self-reliance by using retained earnings to finance operations (Julia & Marnix, 2015). The recent years have however seen innovation that have taken advantage of the financing gaps and have come up with mobile banking solutions which are assumed to offer financial services and inclusivity to the MSE. Technological innovations are continually making it possible to extend financial services both savings and credit to many people who were generally excluded from the banks.

The mobile loans provide a unique credit market and credit type that had not been addressed by the other formal lenders (Gubbins & Tololo, 2016). This has opened opportunities for the low-income individuals and businesses to access diversified financial services which were previously out of their reach. The large number of mobile users in low income countries who have adopted mobile banking solution have made it possible for financial institutions to form relationships and distribute services on the platform (Porteous, 2016). Records of recent developments in banks shows a total revolution mostly focused on mobile banking to deliver new products and services

(Anyasi & Otubu, 2009). Muasya (2013) observed that service delivery on mobile phones could help overcome some of the challenges faced by financial institutions in serving customers

The exponential growth of mobile banking services led to growth of mobile credit as a source of short-term loans for businesses and households. Mobile credit comes with several advantages to financial institutions, which includes the lowering of the transaction costs incurred since loans can be disbursed through mobile phones money and accessed as cash from the network's agents, Speed of disbursement increases greatly, and digital credit providers use non-traditional data like mobile money transactions and airtime values for credit scores. This credit scoring method makes it possible to extend credit to large groups of individuals without collateral or traditional appraisals (Eilin *et al.*, 2007).

The popularity of the mobile credit is attributed to the features that make it easy to access. Chen and Mazer, (2016) lists the 3 attributes of instant access, automated process, and remote access as the differentiator of digital credit from the conventional loans. These features make it easier for low end borrowers to access loans faster where it would have costed more processes. The loan eligibility decision of mobile credit is automated hence eliminates the human judgement (Gurbins & Tololo, 2016) The loan terms of mobile credit have an impact on the uptake by business owners and equally on the business performance. This term includes the cost of the credit and the loan amount. According to Nyumba (2015) the cost of credit which includes the interest charged and the transaction costs has a significant effect on the performance of business enterprises. Wamalwa *et al.*, (2019) attributes the high fees charged by mobile credit providers in Kenya to cost of infrastructure and the associated high default risks. The loan amount is also essential in meeting this the business requirement. Favorable amounts have significant impact on performance of the businesses (Auma, 2017). The average mobile credit Loan amount in Kenya is Kshs 4,000 to 10,000. The figures have been growing over the years based on increased demand and repayment history (Gurbins & Tololo, 2016)

Mobile credit in Kenya has grown from the mobile banking explosion experienced in the country in the recent years. Mobile banking enables customers to interact with a bank via a mobile device such as a phone (Barnes & Corbitt, 2003). There are more than half a billion mobile money accounts spread across 90 countries with higher numbers in developing nations (GSMA, 2016). Mobile banking has enhanced financial deepening and inclusion in Kenya (Burns, 2015). A research by IPSOS Kenya in (2016) found out that financial inclusion in Kenya has increased to 82% from 56% in 2012 which is attributed to the contribution by mobile banking. The increased penetration of mobile telephony has created products like digital credit. Additionally, complex conditions associated with the traditional lending left a gap that was filled by the digital credit (IPSOS Kenya, 2018).

Mobile money and digital banking history in Kenya dates to 2007 when the telecommunication leader Safaricom launched the mobile funds transfer wallet- *Mpesa*. The success of *Mpesa* led to the development of the lending solution-*M-shwari* in 2012 being a partnership between Safaricom and CBA. The uptake of mobile credit was initially slow between 2012-2015 due to constrain faced by the providers and gaps in the regulatory framework. With the enactment of the National payment act 2011 the regulatory framework was harmonized leading to an environment

suitable for growth of the mobile credit sector (Wamalwa *et al.*, 2019). With this development, many mobile lending applications both by banks and independent technology companies have been launched.

Mobile credit in Kenya takes three dynamic forms according to Kagendo and Shigoli (2018): The bank powered mobile lending platforms, Mobile applications (Apps) by technology firms and finally the non-banking institutions like SACCOs and microfinance. The mobile loans in Kenya take the characteristics of other digital loans which include instant credit access, automated appraisal decision, remote disbursement, access, and repayment (Kaffenberger *et al.*, 2018). Banks are leading in the provision of the mobile credit services but are receiving considerable competition from the emerging technological companies offering credit only services.

Micro and Small enterprises are major drivers of many economies in the world. According to OECD (2019) report, SME contribute to more than 99% of businesses in the world and account for 60% of the jobs. In Kenya MSE are estimated to constitute between 80-85% of all business enterprises and account for more than 30% of jobs created annually. Micro enterprises account for close to 12.06 M jobs in Kenya (KNBS, 2016). The manufacturing sector has many micro and small enterprises. According to KIPPRA (2017), 95% of the manufacturing firms in Kenya are MSE. These firms further contribute approximately 20% of the GDP attributable to the manufacturing sector.

The MSE sector in Kenya has grown tremendously since the country got her independence. This has resulted from the recognition of the sector by the government through enactment and implementation of supporting regulatory environment. The Sessional paper no. 2 of 1992 on small enterprise and *juakali* development in Kenya and the sessional paper number 2 of 2005 on development of MSE for wealth and employment came up with provisions that have supported the growth of the sector. The enactment and operationalization of the micro and small enterprises act 2012 was a major legislative step towards focusing on formalization of the sector. The act functions like the micro and small enterprises authority (MSEA), Micro enterprises tribunal and registrar of micro and small enterprises which on full operation should contribute massively to growth and performance of MSE.

There are estimated 7.4 million MSME in Kenya with the micro enterprises taking an average of 92.2% of this population. Small enterprises account for 7.1% while medium enterprises take 0.7% of the population (KNBS, 2016). Most of the businesses are unregistered and unlicensed but spread throughout the country. Most of the MSE and SME are known to operate in the service industry which is characterized by lower entry costs and resources required to manage them (OECD, 2019). The large number of SME also operate in the wholesale and retail sector. The MSE business in Nairobi city controls over 15% of the entire population in the country (KNBS, 2016). This leaves the other 47 counties to share the remaining 85% of the business's population.

The Kenya's vision 2030 has recognized the MSME sector as one of the growth drivers of the economy. This sector is expected to increase productivity and create job opportunities, especially in the informal sector. MSME is also the largest contributor to the manufacturing agenda under the big four agenda. The government projects to grow 1,000 manufacturing micro enterprises

into SME's in 5 years. The government therefore hopes to grow the MSE in the manufacturing sector to become medium sized thereby growing the productivity of the manufacturing sector. Growing MSE will contribute more to job creation and distribution of goods and services which eventually results to growth of the economy.

The growth of the MSE sector in Kenya is hampered by several factors which include low technological capabilities to compete with the larger enterprises, inadequate human resources, and lack of finances (Visser, 2013). The MSE owners in Nairobi city however have greater access to technology and other infrastructures than their counterparts in the rural setup. Interventions like mobile banking are therefore essential in promoting technological uses and providing financial solutions to MSEs in Nairobi. The adoption of use of technology in Nairobi will also trickle down to the rest of the country due to the interconnection that the city enjoys.

## **1.2 Statement of the Problem**

The MSE sector in Kenya is an important contributor to the growth of the economy through facilitation of trade and creation of employment (Muteti, 2007; KNBS 2016; Snodgrass & Biggs, 1996; Abayo, 2015; Kedogo, 2013). The sector is estimated to constitute about 85% of the business enterprises, provides more than 65% of employment and contributes between 18-25% of the total GDP (KNBS, 2016; UNDP, 2015; KIPPRA, 2019). Besides these contributions, the sector continues to perform poorly, struggle to survive and a large number die off. Statistics by KNBS, (2017) survey show that, 46% of MSE fail in the first year alone and a further 34% fail between second and fifth year. The KIPPRA 2018 economic survey report showed that MSE contribution to the economy has been declining since 2015.

Mugure, (2017), found out that access to credit significantly affected performance of business enterprises however many small enterprises have challenges in accessing this credit due to collateral, long processes, and other unfriendly requirements placed by financial institutions. This finding is supported by Bronwn, (2015) who contents that small and micro enterprises in Kenya hardly thrive beyond the startup stage as they encounter business difficulties resulting from challenges in accessing finances.

MSE financing in Kenya remains an issue that affects their performance and growth (Brethenoux & Mulder, 2015). Despite this, most financial institutions consider MSE as less credit worthy and thus deny them credit (Atieno, 2009). The financing gaps have therefore contributed heavily to the failures in MSE in Kenya. The growth of mobile credit may be a timely intervention to address this financial problem in MSE. According to Kaffenberger and Totolo (2018) digital credit has reached millions of borrowers in Kenya since it was launched in 2012. The key characteristics of digital credit is, instant loan access, automated credit decisions, remote disbursement, and repayment. These characteristics make it fast, private, and convenient option for many borrowers.

The focus of this study was to review how mobile credit effects the financing and credit gaps of MSE's and if this effect has an impact their performance. The study was inspired by the desire to find solutions to address the problems faced by MSE's especially financial gaps which may be affecting their performance and resulting to high number of failures. Abayo, (2015) found out that the knowledge, ease of access, the regulatory framework and the risk of micro credit

environment affects the growth of the business assets. Thomas (2017) makes the study of mobile credit a timely intervention when he suggested that that different mechanisms of credit access need to be explored and implemented to help solve the problems facing MSE's while. Gichuki (2014), went further to recommend further studies on the effect of technology on MSE's access to credit.

## **2.0 Review of Literature**

### **2.1 Theoretical Review**

The study was guided by various theories which include, Resource based view theory, Dynamic capabilities theory, Diffusion of innovation theory, Credit rationing theory, asymmetry information theory.

#### **2.1.1 Resource Based View**

The Resource Based View (RBV) states that the performance of a business enterprise is determined by its core competencies which form a sustainable competitive advantage (Wenerfelt, 1984; Barney, 1991). The competitive advantage is achieved when the resources are valuable, rare, inimitable, and non-substitutable (Wernerfelt, 1984). When the firm strategically capitalizes on this resource, it gains an upper hand against competitors in the market. This would then affect performance positively. Dyer & Singh (1998) proposed that the potential of a firm is to create competitive advantage both from its own resources, and on its relational assets which includes other related firms. This creates a network of competitiveness.

Competitive advantage is accumulated and created over a period. The RBV makes attempt to clarify the background of an enterprise existence as well as the successes or achievements (Vitolina *et al.*, 2013). A resource is an attribute that can be deployed by a business to enable it produce value that is acceptable in its market segment. Resources can be both financial and non-financial and may include physical, human, intellectual, or financial (Hunt,2000). The rapid and optimal resource deployment by a firm leads to the sustained competitive advantage over the others. The resultant effect is achieving long-term performance (Snoj *et al.*, 2007).

The argument for RBV theory resonates well with the adoption of mobile credit by MSE's. Firms which can quickly acquire the finances when required and use optimally in the business may take advantage of business opportunities and enhance their competitive advantage over their competitors. Ng'ang'a, (2017) urged that while resources are critical to enhance the performance of an organization, some resources may not have significant contributions. An entrepreneur must therefore understand which resources to deploy optimally to enhance performance. The performance of MSE's is depended on how they identify their unique resources and exploit them for advantage over the competition.

RBV has received a fair share of critics on its application to SME's and more so to MSE's. Li (2016) emphasizes that the focus of RBV on VRIN does not support the survival of MSE businesses in the competitive global marketplace. MSE's are generally small, young and starter up business which have not obtained resources that can be clarified as VRIN which would enable them gain competitive advantage, (Tahseen *et al.*, 2021). MSE's are however known to acquire

their completeness in their small size and single management centers and enhance quick adoption to changes like technology.

MSE's are characterized by the advantage resulting from the owner-based control. This control results in elimination of the agency problem which is associated with larger organizations. The resultant effect is attainment of quick decision making in MSE's. Growth of MSE's is premised on the personal characteristic of the owners or managers, the location, and the innovation which when optimally exploited it results in competitive advantage over the other firms (Tarfasa *et al.*, 2016).

Exploitation of the emerging technology and financing sources like mobile credit is a critical resource that can give MSE's competitive advantage over the large firms. Vitolina, (2013) found out that exploitation of technological resources has a significant contribution to the performance of a business. MSE's have limited access to technological platforms but they are quick adopters and uses of technology which enhance performance. Accessibility of credit over mobile platform may become a valuable resource that MSE's can take advantage to enhance liquidity and cash flows. This is mostly supported when the credit is accessed as and when required in the business.

### **2.1.2 Dynamic Capabilities Theory**

While RBV theory is important in addressing the utilization of resources like credit to achieve competitive advantage, it ignores factors leading to acquisition and sustainability of the resources. Teece *et al.* (1997) developed the dynamic capabilities theory which focuses on the integrating, building, and reconfiguring the resources to fully utilize them. The dynamic capabilities theory fills the gap of resource mobilization and the changing business environment. Helfat *et al.* (2007) explained the theory as the ability of an organization to create, extend and modify its resource base through conscious decision. In the dynamic and changing business environment, resources cannot be assumed to exist waiting to be exploited for competitive advantage (Teece, 1997).

The dynamic capabilities theory resonates well with the access of mobile credit by MSE's. While credit is available in the marketplace from different sources, businesses must make conscious decision of identifying and applying for the funds for utilization of meeting business needs. The correct, timely and enough financing is necessary to achieve competitive advantage. Avcikurt *et al.*, (2016) sees the environment that firms operate in currently to be rapidly fluctuating. This calls for businesses not to focus on market orientation alone but to carefully consider capabilities through which they succeed. MSE's can only hope to perform well if they adopt to new ways of doing things in the dynamic environment. Mobile credit is a new trend whose accessibility at friendly terms may be exploited for competitive advantage.

Barney (1991) has criticized the DCT as an extension of RBV and hence does not address the performance of MSE's. He argues that the theory emphasis of on an organizations ability to create, modify and extend resources cannot apply to small business which have not yet created such unique resources. Tahseen *et al.* (2021) supports this argument indicating that the theory places the management capability at the center of achieving the competitive advantage. This advantage may not be achieved by MSE's which in most cases rely the owner-based control. While this criticism is necessary, the theory cannot be ignored especially when explaining the

quick adoption to the changing environment which greatly favors MSE's and SME's compared to their counterparts in larger corporations.

### **2.1.3 Diffusion of Innovation Theory**

The theory was developed by Rogers (1962) in his attempt to explain the rate of the spreading of new ideas, technology, and the mediums. The theory explains how idea diffuses or a product gets momentum and spreads over time (Diffusion) through a population. The end is that people adopt the idea, product or behavior as an innovation leading to the diffusion. The diffusion of innovation theory examines how innovation is infused within a population through a simple but comprehensive model (Rambocas, 2012). The DIT is basically an elaborate process that describes what occurs as populations adopt to new product, idea, systems, or philosophy (Kaminski, 2011).

Rogers (2003) identified five stages to the process of adoption of innovation. The first stage is knowledge where individuals become aware of the innovation, Then the persuasion stage where the individuals actively seeks information about the innovation. The third stage is decision after weighing the pros and cons of the innovation. The individual then adopts the use of the innovation in the implementation stage. Confirmation is the final stage where the individual decides whether to continue using the innovation or not based on their personal experience.

Dash *et al.*, (2013) analyzed the DIT on the adoption of mobile banking technologies among customers in India found out that most customers are late adopters of technology. They take time to view, understand and gain information on the performance before engaging it. It is only the young tech savvy customers who test the product first. Sohail (2012) collaborates this finding by urging the mobile financial services providers to develop products that are easy to adopt and are perceived to bring higher value to the customers. This will enhance adoption and usability of the product.

Many sectors of an economy which includes, businesses, administrators, information technologists can be served by the diffusion of information theory in achieving great performance (Kaminiski, 2011). The adoption of mobile technology and mobile banking generally followed the patterns of diffusion just like other technologies in the early states. The rapid changes in this technology and introduction of new products like credit have seen unprecedented uptake especially in developing countries in the last few years (Jack & Suri, 2011). The speed of adoption is may however become slow due to factors like speed, backup, cost, and records.

Higgins *et al.*, (2012) expressed concern on the slow adoption of mobile money transactions technology among SME's in Kenya with only 28% recorded as accepting payments through the technology. The businesses sighted the high cost of transaction and lack of supported back end records as reason for slow adoption. This argument agrees with the findings of Kapoor *et al.*, (2007) who pointed out that the future of mobile finance would rise or fall on its cost implications. The SME's may therefore be the missing link in completing the mobile money technology diffusion. The massive use of the mobile technology at SME and MSE levels may lead to its massive adoption (Higgins *et al.*, 2012)

The adoption of mobile banking and mobile credit in Kenya has diffused through the population over the years to become a dependable platform highly relied on for business. According to Ngugu *et al.*, (2017) the use of the power of the early adopters in pushing the technology has been very successful. These early adopters push the technology through the existing social structures at relatively low cost. It is necessary for existing financial service providers to leverage on technology like *MPESA* and serve the low segments of society in a profitable manner (Ngugi *et al.*, 2017). The success of the adoption of this technology must however address 2 critical factors that include the cost and the ease of accessibility (Kapoor *et al.*, 2007))

Mobile credit like other technologies follows the pattern of DIT theory. The adoptability by MSE is based on factors like the benefits and compatibility. The cost of the service and cost of the transaction is however very critical in enhancing the adoption. The findings of (Higgins *et al.*, 2012) supports that the cost of credit offered on the mobile platform is critical for its adoption or not. The spread of the use of this technology is anchored on the experience of the business owners about the cost element. The cost also extends to the acquiring of the mobile phones and the associated applications to support the service. The cost of mobile credit has been urged to be high due to the high cost of establishing the infrastructure by the lenders (KBA, 2019)

#### **2.1.4 Credit Rationing Theory**

Credit rationing happens when consumers are not able to access credit even when they are willing to pay market rates. This analogy is based on theory of commodity markets with uncertainty (Azziz & Cox, 1976). The theory was developed by the work of Stiglitz and Weiss, (1981) who urged that lenders seek to impose limits on the borrower's access to loans. Other contributors to the theory include Freimer (1965) and Myron (1965), Dwight and Modigliani (1969) all who believed that there exist rejected loans at market rates. The theory is based on the reasoning that an offer to pay the market rate of interest is taken to be an effective demand for credit. Azziz and Cox (1976) urged that the demand of a borrower for credit depends on other factors in addition to interest rates. These other factors include: the amount of collateral offered and the lenders equity.

Several authors agree with the credit rationing theory however some like De Meza and Webb (2000) have contradicted it by urging that there exists a possibility of excessive and over lending in the markets. The supply of credit to MSE may be affected by the various factors which align to the credit rationing theory. These factors affect the amount of loan accessed, the cost of the credit and regulations attached to the access of the credit. The theory may also explain on the ease of the MSE accessing credit from the market.

Market imperfections are the main contributors to the credit rationing especially in developing countries. The imperfections include enforcement problems, information problems like adverse selection, moral hazards, and high transaction costs, (Malhotra, 2015). Stiglitz and Weiss (1981) argued that the bank's best interest is to identify borrowers who are more likely to pay back the loans. Interest rates is a good instrument for them in separating the good and the bad borrowers. Jaffee and Modigliani's (1969) argued that the lender can act as the discriminating factor by charging the same interest rate for different demand curves of credit.

The credit rationing in the financial markets adversely affects micro and small enterprises which are the most likely to be eliminated than the large enterprises (Jin & Zhang, 2019). Asymmetry of information, transaction costs, agency problems, undocumented credit history, poor records or financial statements and tendency of being undercapitalized limit access to credit by small businesses and start-ups (OECD, 2013). MSE sector is generally classified as informal and therefore needs lenders who understand the sector. Informal lenders have enough information relating to characteristic of borrowers and accept collateral which is not considered by formal financial institutions (Ghosh *et al.*, 2013).

The Mobile credit market is run based on understanding the borrower's characteristic, social collateral, and repayment history. The ability to access the loans and the amounts accessed is clearly determined by the credit rationing theory. Mobile credit seeks to eliminate the bottlenecks such as loan application, appraisal processes, collateral requirements, bookkeeping, and risk profiling that MSE have faced over long period in accessing credit from financial institutions.

According to Musau *et al.* (2018), banks pursue inclusivity to achieve growth of numbers in accounts and loans by increasing their availability, accessibility, and usability. Banks are advised to increase branches, ATM's and adopt mobile technology in addition to agency banking to further increase financial inclusivity. Musau *et al.* (2018), further concluded that use of digital finance is a cost cutting measure that can ensure bank stability and deepen financial inclusion. This finding is supported by Gebrekiros, (2017) who notes that SME's are now able to access formal financing to enhance their businesses. This confirms that developments in banks policies, emergence of microfinance and investment in digital platforms like mobile credit are now bridging the credit rationing gap.

### **2.1.5 Asymmetry Information Theory**

Akerlof, (1970) was the first proponent of the theory of asymmetry of information. Other contributors are Spence (1973) and Stiglitz (1961). The theory explains the imbalance in the market where the one party has more information about the products or service than what is available to the other parties. If the seller has more information than the buyers, it gives them advantage to offer the product for a price that is different- mostly higher from the actual value. Asymmetric information is a problem in financial sector especially in dealing with credit. MSE owners as borrowers tend to be informed about their financial state than the lenders. Loan applicants sometimes tend to hide information required by banks for loan assessments. This may be intentional or due to lack of record keeping (Sansa, 2019).

Lack of enough information make lenders have challenges in developing suitable products and their pricing due to the uncertainties. The lenders may rely on credit history and cash flow to bridge the gap of information. This factors however are rear among MSE due to lack of business records. Lenders therefore result in charging premium interest to compensate themselves against uncertainties (Tarver, 2018). The result is affecting the cost of credit which in turn translates to higher operation costs hence affecting business performance.

In a perfect market setting, with costless and perfect information available to both parties, the parties do not suffer from market failure. Information in the real world however, rarely perfect nor costless. Small businesses finance market is also considered to have the characteristics of

risk and uncertainty especially regarding future conditions. When the lender has incomplete information regarding MSE firms, it gives rise to the problem of adverse selection (Stiglitz & Weiss, 1981). When MSE owners fail to perform to their full responsibilities, we result to the problem of moral hazard.

Information asymmetry is a factor that makes financial institutions introduce credit rationing which is skewed against MSE since they are the most challenging to collect enough information from (Stiglitz & Weiss, 1981). Imanzade *et al.* (2017) suggested that the establishment of credit reporting systems can effectively address the problem of information asymmetry. The institutionalized systems act like information agents and enhance credibility of information by completing the data chain. Complete information enables efficient credit decisions, reduced risks and hence the cost of the borrowing. CRB's are currently playing this crucial role and have also facilitated effective mobile credit in countries like Kenya (Dalal, 2018).

The asymmetry of information theory explains this study through regulations of mobile credit and the cost of mobile credit. MSE owner's information about the terms of credit determines their decision making through interpretation of the terms and understanding their expectations. Information asymmetry is demonstrated in several ways: acceptance of the loan but at a higher than market interest rate to cater for the risk, acceptance of the loan but with strict collateral requirements; or rejection of the loan application altogether (Bester, 1987; Stiglitz, 1981). To address this adverse effect of asymmetry especially against MSE's dynamic credit solutions like mobile credit have come along and are continually appealing to the MSE owners. The government through policies like MSE act 2012 and MSC authority can also enact regulations that address borrowing needs of MSE's hence reduce effects of information asymmetry.

## **2.2 Empirical Review**

Ease of access occurs when a system provides navigation tools that are easy to learn and encourage service usage hence enabling the full exploitation of product features (Pagani, 2004). People perceive that there's ease of access when the use of a system is free of effort. Availability of savings and financial facilities that support easy access have been found to accelerate the businesses ability to borrow (Ellis *et al.*, 2010).

MSE's have reported multiple challenges in accessing financing from conventional banks. Tarfasa *et al.* (2016) in a study in Ethiopia found out that up to 72% of micro and 76% of small enterprises face challenges in accessing financing from financial institutions. The micro enterprises are considered too small and complicated for banks while the small enterprises cannot fit in MFI's. They therefore rely more on the limited self-financing. Musau *et al* (2018) however expresses a different opinion in the study on financial inclusion, GDP, and credit risk of commercial banks in Kenya. The study concluded that there was increase accessibility and financial inclusion of banks in Kenya since 2005. Banks had increased branch networks, products and channels that enabled them to reach and lend to the previously excluded population.

While banks have increased accessibility of credit, Ndungu (2016) lamented that the need to provide collateral as security to minimize risk has limited this access by micro and small businesses. This thought agrees with the findings of Buckley (1997) who confirmed that commercial banks do not take interest in financing microenterprises and the consumers are also

aware of this. Most micro enterprises therefore do not bother applying for credit from commercial banks. Those who apply have had to deal with many requirements that make it difficult for the access.

Ndungu, (2016) suggests that banks should consider alternative lending methods that consider individual credit score and risk in the approach to enhance borrowing by MSE's. Her argument pitches support for mobile credit which is generally based on individual credit score that considers factors like social media, credit use and psychometric factors. The accessibility created by mobile technology is said to improve market efficiency both in trade and financial (Akar & Mbiti, 2010). Mobile money score can help increase accessibility of finance to underprivileged micro business borrowers (Hendricks & Budree, 2019).

Mobile credit has opened remote villages and far flung entrepreneurs to accessing finance for the businesses which enables equitable growth in a country. This finding is supported by Plyler *et al*, (2010) who found out that mobile banking in Kenya a case of *MPESA* has overreaching economic effects of security at community setup, business growth and capital accumulation at business level. Kapoor *et al.*, (2007) however noted that the future of mobile credit will depend on the cost of the service. The transaction costs on *MPESA* for example were highlighted as a major hinderance to small borrowers.

The accessibility of mobile credit is supported by its 3 distinctive attributes: instant, automated, and remote access that make it unique and easy to access as compared to other conventional loans (Chen & Mazer,2016). The traditional way of getting a loan would typically involve travelling long distances to the bank, gathering requirements, submitting the application, and waiting hoping for the best. A simple loan application would take not less than 10 days (Gubbins & Totolo, 2018). The Mobile loans have therefore eliminated the uncertainty of the exhaustive and time-consuming complex credit appraisals of conventional loans.

This case of accessibility of mobile credit is supported in funding's of the study by Mararo, (2018) on Influence of mobile money services on the growth of SME's in Nakuru town Kenya. The study found out that the accessibility of mobile finance has an effect of enabling traders to quickly respond to the customers' needs. This in turn has a significant relationship between access to mobile finance and the performance of SME's. The findings of this study are collaborated by the findings of Omwanza (2009) who agree that micro business owners can now spend more time running business instead of going to the bank to follow up loans,

Many studies have confirmed that accessibility of credit significantly affects the performance of the businesses (Abayo,2015; Mbugua, 2008; Osoro, 2013). Mbogo, (2010) found out that the perceived ease of access had a significant impact on the usage of the mobile banking services. In the study which was carried out in Nairobi from a sample of 409 businesses concluded that more businesses are continuously using mobile banking & payment services because of the convenience and perceived advantages of technology. The MSE owners are increasingly adopting mobile technology for transactions, payments as well as credit. It is important for business owners to have source of credit that is easily accessible, convenient, and available when needed.

The cost of credit includes the fees charged by the lender and the transaction costs involved in accessing the financing. The lenders fees- mostly charged as interest is determined by the financing cost, operating cost, and acceptable rate of return (Levasseur, 2002). Brigit *et al*, (2004) identified 3 costs to be covered in the cost of money: The cost of the funds, the risk of loss (risk cost) and administrative costs. The cost of credit provided to small enterprises tends to be higher than large firms. This is contributed by the small loan amounts which increase administrative costs, lack of collateral and information asymmetry that causes them to be viewed as high risk.

Small borrowers equally incur high transaction costs through the negotiations, paperwork, transport, and opportunity cost on time spent outside the business in following up the loan processes. Micro credit programs have been successful in the last few decades in financing millions of businesses and individuals however the industry has faced major huddles due to high overhead costs of administration of the small loans (Kendall & Voorhies, 2014)

Micro loans heavily depend on relationship between the borrower and the client. This increases the management costs unlike the large corporate loans that can be reduced to one transaction (Berger & Udell, 2006) Transaction costs not only make the small borrowers non desirable customers to financial institutions but also increase the costs a borrower incurs to access credit. The strategy of personal relationship with small business owners may prove very costly to financial institutions in terms of staff involved.

Financial institutions should develop and rely on electronic technology that would efficiently deliver the services at affordable cost (Bricks & Ennew, 1997). Modern technology like Mobile credit cuts off the administrative costs of the lenders through the automated processes and remote appraisal which opens opportunities for financial institutions to extend credit to the small borrowers. Reduced costs of offering credit have a direct impact on the pricing of the loans.

A study by Odongo, (2014) on lending terms and financial performance of small enterprises in Uganda, found out that cost of credit contributed positively to the performance of small businesses than the other lending terms. The study found out that there is less significance placed on the cost of money when traders evaluate the access to finance. The researcher further urged that most small businesses are concerned with the access to credit and are willing to pay high cost because it is the only source of finance easily available.

The access to finance assures the growth of businesses which in turn increases assets and profits. The cost does not determine the borrowing decisions however the money received is used to grow the business to realize more income. Gichuki, (2014) supported these findings by agreeing that the cost of credit does not have a significance effect on performance of MSE's since it is not a major consideration in the borrowing decisions by enterprises. He however noted that the high repayments costs of credit limited the uptake of credit by MSE's and recommended a reduction in the interest rate to enable increased borrowing.

The failure to evaluate the cost of credit may have a negative impact on the business as noted by Nyumba, (2015) who urged that the cost of credit (interest) has a significant negative effect on the performance of Small enterprises. In his study on loan interest rate and performance of small

and medium enterprises in Kenya, Nyumba, (2015) found that the cost of credit and specifically the interest rate increases the cost of operations significantly. This eventually affects the income and cash flows of the business. While this study did not analyze the other costs like transaction, opportunity, and negotiation costs, it was able to establish how high interest affects the performance of the business.

The mobile credit loans are generally small in amounts and often graduated at every successful repayment. According to FSD research in 2016 the average digital loans taken by Kenyans is between Kshs 4,000 to Kshs 9,000. In Nairobi, only 10.1% of the borrower's access loans above Kshs 10,000. The loan size in some cases is determined by the lenders graduated levels and not necessarily the borrower's needs (Gonzalez & Rosenberg, 2006). This has a negative impact on the cash flow resulting from insufficient finances or resources which eventually affect the performance of a business.

To run business activities effectively, it is recommended that business proprietors get enough budget allocation (Tawane & Muathe, 2019). The budget can only be achieved by enough and reliable financing. To meet the financial gap some borrowers have resorted to borrowing from multiple credit providers. Multiple borrowing may put a strain on the ability to pay by the borrowers. In some cases, borrowers use loans from one lender to pay off the matured loans of another lender in what is referred to as debt cycling (Gordon & Lyon, 2017). The debt cycle is not sustainable in the long run, and eventually leads to high chances of default (Christopher, 2008).

Amsi *et al.* (2017) in the study on Effect of microfinance credit on SMEs financial performance in Kenya found out that loan amount available to a business significantly affected the performance of the business's enterprises. The study demonstrated that when enterprises receive amount of credit that is enough, they meet their business needs which eventually leads to financial sustainability of the businesses. The study which was carried out in 5 markets in Nairobi with a sample size of 210 SME's agrees with an earlier study by Odongo, (2014) who also pinned the importance of the loan amount in contributing to the performance of small enterprises.

While several authors have pitched for enough financing to enhance performance of the business (Wanambisi, 2013, Odongo, 2014, Amisi., 2017), excess funding can negatively impact the businesses as well. According to Abaidoo (2015) excess amount of loan relative to the business can lead to funds diversions or misuse which negatively impact the repayment ability. Small or insufficient amounts of credit relative to business needs equally increase the chances of funds diversions. Wamalwa *et al.*, (2019) notes that small amounts of credit greatly reduce the ability of borrowers in making business investments since such investments require large amounts of money.

Reduced investments may lead to poor growth and struggle in cashflows eventually hampering growth of businesses. Diversion of funds is likely to happen when the funds available to purchase a desired asset is insufficient. Such funds are easily diverted to finance other needs which may not be related to the business. The loan eventually has no impact on the business and may lead to financial constraints, default, loss and poor performance or eventual closure (Salifu

*et al.*, 2018). To avert the tendency of diversions of funds, financial institutions should analyze the loan amount based on business capacity and needs.

The level of funds disbursed on mobile loan platforms are generally small (Gubbins & Totolo, 2017). This casts doubt on the ability to meet the business financial needs and make viable investments (Wamalwa *et al.*, 2019). Olutunla and Obamuyi (2008) however pitch for the case of the mobile credit by their argument that the performance of MSE's does not just depend on accessing credit but accessing the right amount of credit at the right time. It therefore draws attention to the need of MSE's to access enough loan amount at the appropriate time to influence their performance.

Mobile credit is mostly used to finance working capital and operational needs (KNBS, 2017). This need requires short term, easily accessible and fast available source of funds. It is by no doubt that mobile credit which meets these criteria is increasingly penetrating the MSE sector. MSE which access the right amount of loans have reported growth in sales and incomes than their counterparts who do not access loans (Wanambisi, 2013). Where loans are large, and repayments exceed the profit margin business experience negative cash flow which eventually threaten its performance and sustainability (Brown & Weaver, 2015).

Regulators worldwide have been grappling with control of new and rapidly changing technologies in the recent years. They learn from their own and industry forerunners of the new technologies, while some operate innovation hubs to test the new technologies before releasing to the market (EY Global, 2018). According to OECD, (1998) regulation and innovation cannot be easily separated. Regulation affects innovation process while innovation has impact on the development of regulation.

A regulation regime with minimal restrictions may encourage innovation but fail the test on clarity or safety while strict and very comprehensive regulations can protect the consumer but stifle the innovation (Tan, 2014). Regulatory formulation must therefore take into consideration developments that create working relationship between innovation and the associated regulations (OECD, 1998). Policy framework is required to address potential spill overs of mobile banking and the related effects (Anderson, 2010).

The adoption of Mobile credit in Kenya started at a slow rate with minimal uptake in the years 2012 to 2014. This has partly been blamed to lack of legislation and regulatory environment for control of the operations framework of the innovative sector (Wamalwa *et al.*, 2019). Although the sector is still under regulated, some developments like the enactment of the National Payments Act in 2011 and complementary regulation in 2014, has provided some framework which has encouraged the tremendous growth of mobile credit services (Wamalwa *et al.*, 2019).

There is a huge challenge however for the government in regulating mobile credit service since the providers cannot be distinctively classified as financial service, telecommunication service, technology service or even insurance service providers for those that offer insurance connections (Mman, 2019). The telecommunication industry regulators face challenges in regulating the financial services provided on mobile platforms (Anderson, 2010). Self-regulation through bodies like DLAK is slowly gaining traction in mobile credit industry. DLAK seeks to offer fair

competition, information sharing, training to consumers, control of exploitation, and control of overborrowing (Letiwa, 2019). Banks and MFI's providing the service are regulated by CBK.

A publication by Makin (2009) in OECD on regulations in the mobile banking sector with *MPESA* as a case study explains the importance of regulations on three fronts: First the regulator attempts to ensure financial stability in the economy by standing between the financial chaos, Secondly the regulator protects the consumer and finally the regulator promotes the countries social objectives by ensuring suitable financial products are available to the citizens.

Regulation protects the entrepreneurs from exploitation by the service providers resulting from misinformation due to nondisclosure of the lending terms and overpriced loan. Secondly regulation controls over borrowing and multiple borrowing a practice that could land a business into debt cycle leading to collapse. Regulation may however stifle innovation and limit opportunities that could have been developed to enhance credit to businesses. Indongesit (2013) encourages the stakeholders in the industry to form a coalition with the aim of developing the network and regulatory environment that supports the business rather than stifle it.

Tarazi and Breloff, (2010) evaluated how several countries are grappling with regulating mobile service providers who also offer financial services. In their publication on Nonbank E-money users: regulatory approach to protecting customer funds, they noted that mobile service operators have a wide network and reach many customers with financial services. They are instrumental in bridging the financial access gap. They however do not exist under strict prudential guidelines like banks in managing customers funds. This has made authorities in some countries decline to allow them to operate financial services.

The gaps in the regulations allows some players to take advantage and perpetuate practices that can hurt customers. Unregulated players like mobile credit providers may enjoy undue advantage over the highly regulated banking sector in providing credit services (Tarazi & Breloff ,2010). Cases of the public complains on misuse of data by the unregulated mobile credit providers have been reported in Kenya in the recent past. In April 2020 CBK was forced to revoke the licenses of some mobile credit providers from listing loan defaulters on the credit reference bureaus. CBK is currently proposing more regulation for the mobile credit providers through the draft bill, Central bank amendment Act 2020. Through the act, CBK will have an authority to ensure fair marketplace access to credit free from any form of discrimination (CBK, 2020). A regulated lending system is expected to support the growth of MSE sector though access to fair credit.

A study by Abayo (2015) concluded that regulation of the emerging mobile lending industry had a significance influence on the asset growth of business enterprises. The study which examined the basic regulatory guidelines on the relationship between the borrowers and the lenders found out that a significant number of borrowers understood their obligation and the contractual terms including the loan terms. Each party was found to respect their contractual obligation. The regulatory framework contributes to the borrowing decision hence the effect on the business performance. This study added knowledge to the emerging mobile credit field. The study however narrowed to only one product- *M-swari* thereby failing to address information in multiple borrowing, traders using different providers and competition among the providers.

Based on the research gaps identified several hypotheses were drawn,

(H01). *Accessibility of mobile credit has no significant effect on performance of micro and small enterprises in Nairobi city county.*

(H02). *Cost of mobile credit has no significant effect on performance of micro and small enterprises in Nairobi city county.*

(H03). *Mobile loan amount has no significant effect on performance of micro and small enterprises in Nairobi city county.*

(H04) *Mobile credit regulation has no significant effect on performance of micro and small enterprises in Nairobi city county.*

### **3.0 Research Methodology**

This research adopted explanatory research design. Explanatory design goes beyond the descriptive design to explain the casual relationships between the independent and the dependent variables. The study employed the collection of primary data that was analyzed to determine the casual relationships between the variables in a structured manner (Dudovskiy, 2018). The explanatory research design was suitable for this study as it sought to establish the relationship between the factors of mobile credit as the independent variable and performance of the MSE's as the depended variable in Nairobi City County, Kenya. The study critically examined the impact levels that the mobile credit variables have in affecting the performance of MSE's.

The target population of the research was the MSE's in Nairobi City County, Kenya. The study was conducted in 5 market towns spread across the city which include, Ruai, Ngumo and Uhuru market, Kangemi and Babadogo. The number of registered MSE's in the 4 markets according to a licensing officer in NCC licensing office in Nairobi is 2,890. This formed the target population. The MSE's operate in all sectors of the economy which includes wholesale and retail shops, vegetable vendors, boutiques, restaurants, transport, real estate, telecommunication, schools, and timber.

The researcher adopted stratified random sampling technique to arrive at the sample. The population was first divided into homogenous strata from which samples were picked at random. Random sampling is the method of sample selection that gives equal probability of picking any of the item, in the sample. This ensures that each item in the sample has an equal chance of being picked (Kothari, 2008). Supported by the argument of Ajay and Masuku, (2014) on determining the sample size, the researcher settled for a sample size of 289 enterprises which is 10% of the target population of 2,890 enterprises. The research further adopted primary data collection methods. The primary data was collected directly from respondents through administering semi structured questionnaires through the drop and pick method.

Once the data collection process was completed, the data was edited and reviewed to ensure completeness and reliability. Quantitative data was cleaned, tabulated, and analyzed using

computer software SPSS Version 26.0. To facilitate this analysis, the data was chronologically arranged and coded according to the questionnaire which ensured that the variables are correctly captured. To ensure effective use of this computer packages, the researcher ensured that proper data was entered since the computer does not think, it only can execute the instructions of a thinking person (Kothari, 2008). Content analysis was employed in analyzing the Qualitative data.

The researcher further employed descriptive and inferential statistics such as mean score, percentages, average, and frequencies to analyze the quantitative data of the variables. The study applied the regression analysis to test the extent to which the independent variables of mobile loan predict the performance of MSE's in Nairobi. The regression equation that used to measure the relationship is as shown below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where: Y is the dependent variable, (Performance)

$X_1$  = Ease of access

$X_2$  = Cost of credit

$X_3$  = Loan amount

$X_4$  = Regulations

$B_0$  is a constant while  $\beta_1$  to  $\beta_4$  coefficient of regression which measures the how strong each independent variable impacts the dependent variable.  $\epsilon$  is the error term.

The researcher also used the ANOVA Model analysis of variance and coefficient of determination to help determine the power of the influence of independent variables on the dependent variable. A qualitative data checklist which will be clustered along the main themes of research will be developed for ease of consolidation and analysis of the qualitative data. The analyzed data will be presented in graphs, tables and charts graphs for easy understanding and interpretation.

## 4.0 Findings and Discussion

### a) Hypothesis testing

To determine the relationship between the independent and the dependent variables multiple regression analysis was used to test the hypothesis. The results presented in the model summary below.

**Table 1. Model Summary**

Item	Value
Model	1
R	0.872
R Square	0.760
Adjusted R Square	0.751
Std. Error of the Estimate	0.573

**Source: Survey Data, 2021**

The model indicates that there is a strong correlation between the variables as indicated by R value of 0.872. This value which is the multiple correlation coefficients shows a quality prediction of the dependent variable by the independent variables. This is a good indication since it points to a strong correlation. The *R-Square* shows that the four independent variables in the model explain 76.0% of performance of the MSEs in Nairobi County. This demonstrates that the variables have significant effect on the MSE performance. Further, the Adjusted R-Squared it is evident that after adjusting the model for inefficiencies the independent variables can explain 75.1% of performance of the MSEs in Nairobi County.

**b) Analysis of Variance**

The Analysis of variance (ANOVA) was used to determine whether there was a regression relationship between the study variables. The results presented in the table below gives the ANOVA results which show the reliability of the model developed in explaining the relationship between the study variables. The significance of the model was tested at 5% level with a 2-tailed test.

**Table 2 ANOVA**

<b>Model</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	0.804	4	3.216	3.436	.015(a)
Residual	0.026	258	6.708		
Total	0.830		0		

**Source: Survey Data, 2021**

The results from the table show that F was 3.436 and at significance value of 0.015 which is less than the critical value at 5% level in a 2-tailed test. Since F calculated is greater than the F critical (at 4 258, F critical= 2.41), it is concluded that the overall model was significant. This means that is, there is a significant relationship between mobile credit and performance of MSEs in Nairobi City County. This results further reveal that the regression model developed is statistically significant and the variation in the results is insignificant that cannot result to a much difference in case of a change in the study units (population) and therefore the model can be relied upon to explain the effect of accessibility of mobile credit, cost of mobile credit, loan size, and mobile credit regulation on performance of MSEs in Nairobi County.

**c) Regression Coefficients**

The regression coefficients were calculated to measure the effect of each independent variable and the level of significance. The results are presented in the table below.

**Table 3 Regression Coefficients**

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		

(Constant)	4.778	0.453		10.5475	0.0429
Accessibility of mobile credit	0.862	0.114	0.024	7.5614	0.0150
cost of mobile credit	-0.879	-0.108	-0.029	8.1389	0.0133
Loan amount	0.646	0.173	0.086	3.7341	0.0463
Mobile credit regulation	0.712	0.137	0.064	5.1971	0.0264

**Source: Survey Data, 2021**

The testing of the significance of the coefficients at 95% confidence level as derived from the table shows that all the variables had a significance value less than 0.05. This confirms that all the variables have significant effect on performance of MSE, hence in overall reject the null hypothesis. Based on these coefficients, the regression model ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ) therefore becomes.

$$Y=4.778 +0.862X_1-0.879X_2+0.646X_3+0.712X_4$$

The model indicates that, holding the predictor variables constant, the performance of MSEs would have a coefficient of 4.778. From the results, the regression coefficient for accessibility of mobile credit is 0.862. This had a significant value of 0.015 which is less than 0.05 depicting the significance of the relationship between accessibility of mobile credit and performance of MSE's. These results agree with Hendricks and Budree (2019) who stated that that mobile banking score can increase the accessibility of finance to the underprivileged micro businesses. The results also agree that accessibility of credit significantly affects the performance of businesses (Abayo,2015; Mbugua, 2008; Osoro, 2013). This finding shows how a critical resource like credit can be integrated and configured in a process that is easily accessed for it to be fully utilized to bring value as presented by the dynamic capabilities' theory. Further, accessibility of credit through mobile credit addresses the gaps of moral hazard as contended in the asymmetry of information theory.

The results also show that the performance of MSE is negatively and significantly related to the cost of mobile credit. This is indicated by a regression coefficient of 0.879 which is a negative coefficient and a p-value of 0.0133 less than 0.05. This finding agrees with Nyumba (2015) that cost of credit has significant negative effect on performance of enterprises. The findings however differ with Odongo 2014 and Gichuki (2014) both of whom though that cost has no significant impact on performance as it does not an important consideration in the borrowing decision of MSEs. Since mobile credit addresses some of the transaction costs and processes that make financial institutions shy away from micro enterprises, the credit rationing theory gaps are well addressed by the adoption of this mobile credit model.

The regression model further found out that the mobile credit loan amount significantly affects the performance of MSEs. This is demonstrated by a regression coefficient of 0.646 which is a negative coefficient and a p-value of 0.0463 less than 0.05. This finding is supported by Amsi *et al.* (2017 and Odongo (2014) who pitched for sufficient financing for business enterprises which eventually affects their performance. Wamalwa *et al.*, (2019) notes that small amounts of credit

greatly reduce the ability of borrowers in making business investments since such investments require large amounts of money. The regression model as well shows that mobile credit regulation is positively related to performance of MSE's. The regression coefficient for this was obtained to be 0.7120 with a significant value of 0.0264 less than 0.05 indicating a significant effect of mobile credit regulation on performance. The findings therefore agree with Abayo (2015) on the significance of government regulation in affecting the performance of MSEs.

## **5.0 Conclusion and Policy Recommendation**

### **5.1 Conclusion**

This study sought to determine the effect of mobile credit on the performance of MSEs in Nairobi City county. To achieve these, four variables namely accessibility of mobile credit, cost of mobile credit, Loan amount of mobile credit and regulations of mobile credit were analyzed to determine the relationship with performance. The study found out that all the four variables have significant effect on the performance of MSEs. The three variables of accessibility of mobile credit, loan amount of mobile credit and regulation of mobile credit have a positive significant effect while cost of mobile credit has a significant negative effect. It is therefore concluded that Mobile credit is an important contributor to the performance of MSEs in Nairobi city county. Policy makers, stakeholders, and players in the MSE sector should therefore consider these factors in the attempt to solve the access to finance for MSE's for meeting the needs of the businesses. Although mobile credit has attempted to address this factors, there are gaps such as the repayment period, the low amount of loans disbursed on the platforms, the cost of the credit and the insufficient regulations of the sector which needs to be addressed for it to effectively meet the needs of MSE's.

### **5.2 Policy Implications**

The study demonstrated the importance of MSE to the economy of Kenya and other developing countries. The performance of MSE can be enhanced by providing an environment that creates access to credit easy, reliable, and affordable. The study has proved that delivering credit services on mobile banking platform technology is essential tool to reach out to the MSE needs. Financial institutions and other lenders can therefore address the borrowing needs of MSE by investing in suitable mobile credit products.

Effective management of the credit market demands for enactment and implementation of necessary regulations governing the sector. The study therefore recommends the government, policy makers and other relevant stake holders to be involved more regulation of the credit industry especially mobile credit. The Kenyan government through arms like CBK must urgently create policy and legal framework that effectively governs mobile and other digital credit services. While regulation can stifle innovation as contended by Tan (2014), proper regulation can positively affect the business environment. Regulation should be fair to both the borrowers and the lenders. The study encourages stakeholders in the mobile credit sector to consider coalitions and self-regulation structures to enhance fair playground among themselves.

MSE performance is significantly affected by the cost of credit and the loan amount offered by the lenders. The study therefore advises that the financial institutions should develop policies and structures that are dedicated to supporting the access to credit by MSE. Through such initiatives, credit terms can be reviewed to improve on the offer available to this MSE. Further the government and other stakeholders can come in in offering incentives like tax breaks or cheap finances to support the lending to MSE. The government should provide an environment that will encourage competition among financial institutions which will lead to more value to the MSE customers.

### **5.3 Limitations and future research**

The study focused on micro and small enterprises in selected markets in Nairobi city county. Nairobi may not exclusively give the full picture of the effect of mobile credit on MSEs in the whole country. The conclusions of this study may be localized to the city and may not address other cities, towns but more so the enterprises in the villages. Policy directions to be taken based on these findings may therefore not adequately address all the enterprises in the country Kenya. It is therefore recommended that a further research be conducted in the country to enhance the generalization of this findings. This study also assumed that the MSE owners have knowledge, understanding and have used mobile credit before. Such an assumption may lead to biased findings especially where one is not exposed to the service. It is therefore recommended that further research be done to evaluate the knowledge levels of mobile credit which will enhance the findings of this study.

### **References**

- Abayo, J. A., (2015). Effect of Micro-Credit on Growth of Small Business enterprises, case of M-shwari at Kibuye market in Kisumu county, Kenya, *International Journal Economics, Commerce and Management*. UK
- Akhtar, I.t, (2016). Research Design, *Jamia Millia Islamia University, New Delhi*
- Amsi, F. Ngare, P. Imo P., & Gachie, M., (2017). Effect of Microfinance Credit on SMEs Financial Performance in Kenya, *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 8(1):48-61
- Anderson, J., (2010). M-banking in developing markets: Competitive and Regulatory implications, Vol. 12 No. 1, pp. 18-25. <https://doi.org/10.1108/14636691011015358>
- Anyasi, F., & Otubu. P., (2009). Mobile Phone Technology in Banking System: Its Economic Effect, *Research Journal of Information Technology*, 1(1), 1-5
- Asakania, F. M., (2016). Influence of Financial literacy on Performance of Small and Medium enterprises: a case of Butere sub county Kakamega county Kenya. *Africa International Journal of Management Education and Governance*
- Atieno, R., (2009). Access to Finance and the Performance of Small Scale Enterprises in Kenya. United Nations University.
- Atkinson, A., & Messy, F., (2005). Assessing financial literacy in 12 countries an OECD Pilot Exercise. Paris: OECD Financial Affairs Division

- Auma, A.L., (2017). Factors affecting the Effectiveness of Bank credit in enhancing the Performance of Small and Medium enterprises in Kenya: a case of Kisumu city. Jomo Kenyatta University of Agriculture and technology.
- Babajide, A., (2012). Effects of Microfinance on Micro and Small Enterprises (MSEs) Growth in Nigeria” *Asian Economic and Financial Review*
- Brethenoux, J., & Mulder, M., (2015). Unleashing the full potential of the Kenyan SME sector,
- Brown, G., & Weaver, E., (2015). Notes from the Frontlines in the Small Business Finance Revolution: A microlenders view.
- Buckley, G., (1997). *Microfinance in Africa: Is it Either the Problem or the Solution?* Department for International Development, London, UK, 1997
- Buldyrev, S. Riccaboni, M. Growiec.J. Stanley, H., & Pammolli, F., (2007). The Growth of Business Firms: Facts and Theory. *Journal of the European Economic Association*, 5(2/3), 574-584. Retrieved from <http://www.jstor.org/stable/40005060>
- Burkley.G., (1997). *Microfinance in Africa Is it either the Problem or the solution*, UK, *World development Publication*.
- Burns,S., (2015). *Mobile money and Financial development: The case of M-PESA in Kenya*, George Mason University.
- Central Bank of Kenya., (2016). *Fin Access household Survey report*, retrieved from [https://www.centralbank.go.ke/uploads/financial\\_inclusion/736331048\\_FinAccess%20%20Household%202016%20Key%20Results%20Report.pdf](https://www.centralbank.go.ke/uploads/financial_inclusion/736331048_FinAccess%20%20Household%202016%20Key%20Results%20Report.pdf)
- Chen, G., & Mazer, R., (2016). Instant, Automated, Remote: The Key attributes of Digital credit, retrieved from <https://www.cgap.org/blog/instant-automated-remote-key-attributes-digital-credit>
- Christoph, K., (2008). *Is More Credit Always Good Credit?* (online) Available: <http://microfinance.cgap.org/author/christoph-kneiding>
- Deloitte., (2016), *The story behind the numbers, The Kenya Economic Outlook 2016 report*. Nairobi.
- Dinh, H.T. Mavridis, D., & Nguyen, H., (2010). "The binding constraint on firms' growth in developing countries", *World Bank Policy Research Paper* 5485
- Elilin.F, Blumenstockz, J., & Robinsonx J.,(2007). *Emerging landscape of Digital credit*, [http://newcarsjn.com/The\\_Emerging\\_Landscape\\_Of\\_Digital\\_Credit.pdf](http://newcarsjn.com/The_Emerging_Landscape_Of_Digital_Credit.pdf)
- Eresia-Eke, C., & Raath, C., (2013). SMME Owners’ Financial Literacy and Business Growth. *Mediterranean Journal of Social Sciences*. 4. 10.5901/mjss. 2013.v4n13p397.
- Gichuki, J. A., (2014). *Challenges Facing Micro and Small Enterprises in Accessing Credit Facilities in Kangemi Harambee Market in Nairobi City County, Kenya*
- Githaiga, P., (2015). *Debt Financing and Financial performance of Small and Medium size enterprises: evidence from Kenya*. *Pressacademia*. 2. 473-473. 10.17261/Pressacademia.2015312967.
- Gosh, P. Mookherjee. D., & Ray, D., (2013). *Credit Rationing in Developing Countries: An Overview of the Theory*
- Gracia Machel Trust., (2016). *Survey to explore growth barriers faced by female entrepreneurs in east Africa*,
- Gubbins & Totolo, E., (2018). *Digital Credit in Kenya: Evidence from demand side surveys*, FSD Kenya publication, Nairobi.
- Hendricks, M. K., & Budree, A., (2019). Can a mobile credit-scoring model provide better accessibility to South African citizens requiring micro-lending?" *International Journal of Electronic Finance*, Inderscience Enterprises Ltd, vol. 9(3), pages 157-16
- Higgins D. Kendall, J., & Lyon, B., (2012), *Mobile Money Usage Patterns of Kenyan Small and Medium Enterprises*, [ht.tps://www.mitpressjournals.org/doi/pdf/10.1162/INOV\\_a\\_00129](https://www.mitpressjournals.org/doi/pdf/10.1162/INOV_a_00129)

- Idongesit, W., (2013). Regulatory frameworks and Implementation patterns for Mobile Money in Africa: The case of Kenya, Ghana and Nigeria.
- International Finance Cooperation., (2010); IFC definition of Targeted sectors, retrieved from [https://www.ifc.org/wps/wcm/connect/industry\\_ext\\_content/ifc\\_external\\_corporate\\_site/financia+institutions/priorities/ifcs+definitions+of+targeted+sectors](https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financia+institutions/priorities/ifcs+definitions+of+targeted+sectors)
- Jin, Y., & Zhang, S., (2019). Credit Rationing in Small and Micro Enterprises: A Theoretical Analysis, *School of Public Policy and Administration, Xi'an Jiaotong University, Xi'an 710049, China*
- Kagendo, P., & Shigoli, P., (2018). Mobile Lending has Expanded Kenya's Credit Market, but Regulation is Necessary, *Publication of Young Professionals, Private Sector Department, Nairobi*. Found at <https://kippra.or.ke/mobile-lending-has-expanded-kenyas-credit-market-but-regulation-is-necessary/>
- Kaminski, J., (2011). Diffusion of Innovation Theory *Canadian Journal of Nursing Informatics*, 6(2). Theory in Nursing Informatics Column. <http://cjni.net/journal/?p=1444>
- Kapoor, M. Morduch, J., & Ravi, S., (2007). From Microfinance to M-finance, Innovation case discussion: MPESA. <https://www.mitpressjournals.org/doi/pdf/10.1162/itgg.2007.2.1-2.82>
- Kenya Bankers Association., (2019). Digital Credit, Financial Literacy and Household Indebtedness, *KBA Centre for Research on Financial Markets and Policy, Nairobi*
- Kenya Institute of Public Policy Research and Analysis., (2017). The Kenya Economic report 2017, retrieved from <https://kippra.or.ke/index.php/tenders/summary/4-kenya-economic-report/8-ker-2017>.
- Kenya National Bureau of Statistics., (2016). Micro, Small, and Medium establishments. Basic report 2016
- Kiama, P.W., (2009). Relationship lending and Credit availability to Small and Medium manufacturing enterprises in Nairobi Kenya. *University of Nairobi repository*
- Kimenyi, S., M & Ndung'u, N., (2009). Expanding the Financial Services Frontier: Lessons from Mobile Phone Banking in Kenya, Washington DC. Brookings journal.
- Kisila E. J., (2014). Factors influencing the adoption of Mobile Credit system in Kenya, United States International University repository, Nairobi.
- Kothari, C.R., (1990). Research Methodology, Methods, and Techniques-Second edition. *New age international Publishers. Jaipur- India*.
- Kotzé, L., & Smit, A., (2008). Personal financial literacy and personal debt management: the potential relationship with new venture creation. *The Southern African Journal of Entrepreneurship and Small Business Management*,
- Letiwa, P., (2019). Mobile loan firms shield borrowers in new guidelines, *Sunday Nation 27<sup>th</sup> October 2019, pg 10, Nairobi*.
- Lusardi, A., & Tufano, P., (2009). Debt literacy, financial experiences, and over indebtedness (Working Paper Series/ National Bureau of Economic Research). Cambridge, MA: National Bureau of Economic Research.
- Makin, P., (2009). Regulatory Issues around Mobile banking, OECD 2009 publication on ICTS for development.
- Mamn Advocates., (2019). Regulation of Mobile Lending Entities in Kenya, retrieved from <https://mman.co.ke/content/regulation-mobile-lending-entities-kenya>
- 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, Vol. 2. No.1. 2010*,

- Muasya, I. K., (2013). Relationship between the adoption of mobile banking services and the income levels of the Kenyan population: *University of Nairobi repository*.
- Muathe, S.M.A., (2010). The Determinants of Adoption of Information and Communication Technology by Small and Medium Enterprises within the Health Sector in Nairobi, Kenya. *Unpublished PhD Thesis*, Kenyatta University, Kenya
- Musau, S. Muathe, S., & Mwangi, L., (2018). Financial inclusion, GDP, and credit risk of commercial banks in Kenya. *International journal of Economics and Finance*. 10. 181. 10.5539/ijef.v10n3p181.
- Mutindi, M.K., (2017). Factors influencing the adoption of Mobile banking technology by Bank customers in machakos town, South Eastern University, Kenya.
- Ngugi, B. Pelowski, M., & Ogembo, J. G., (2017). M-PESA: A case study of the critical early adopters' role in the rapid adoption of mobile money banking in Kenya. <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1681-4835.2010.tb00307.x>
- Nyumba, E.O., (2015). Loan interest rate and performance of Small and Medium enterprises in Kenya, *International journal of management research and review* Volume 5/Issue no 10.
- OECD., (2017). Enhancing the contributions of SME's in a global and digitalized economy, Meeting of the OECD Council at Ministerial Level Paris, 7-8 June 2017
- Olutunla, G. T., & Obamuyi, T., (2008). An empirical analysis of factors associated with the profitability of Small and Medium enterprises in Nigeria, *African Journal of Business Management*, Vol. 2,
- Porteous, D., (2007). Just how transformational is m-banking? *FinMark Trust journal* Pg6. South Africa. via <https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-just-how-transformational-is-m-banking-feb-2007.pdf>
- Rahim, A.G., Ofuani, A. B., & Olonode, O.P., (2008). Trends in business performance measurement: a literature analysis, *International Journal of Social Sciences and Humanities Reviews Vol.8 No.1, April 2018; p.151 – 160*, Lagos.
- Rogers, E.M., (2003). Diffusions of innovations, 5<sup>th</sup> edition, New York free press.
- Salifu, A. Tofik, A. Z. Rahman, A., & Sualihu M., (2018). Determinants of Loan Repayment Performance of Small and Medium Enterprises (SMEs) in Ghana: The Case of Asante Akyem Rural Bank. *Journal of African Business*. 19. 1-18. 10.1080/15228916.2018.1440460.
- Sansa, N. A., (2019). A Critical Analysis of Effects of Loan Conditions on Accessibility to Loans by Small Businesses in Tanzania. Available at SSRN: <https://ssrn.com/abstract=3315124>
- Shamoo, A.E., & Resnik, B.R., (2003). Responsible Conduct of Research. Oxford University Press. Third Edition. Newyork.
- Śledzik, K., (2013). Schumpeter's view on Innovation and Entrepreneurship in Management Trends in Theory and Practice. Stefan Hittmar, Faculty of Management Science and Informatics, University of Zilina & Institute of Management by University of Zilina
- Sveinung, F. Grünfeld, L.A., & Green, C., (2010). SME's Growth in Sub-Saharan Africa, -Identifying SME roles and obstacles to SME growth, *MENON Business Economics*
- Tan, J.A., (2014). Regulatory Challenges of Electronic Payment Systems and Electronic Money, retrieved at <https://www.joylaw.com/content/06-news/30-regulatory-challenges-of-e-payment-systems-and-e-money/regulatory-challenges-of-e-payment-systems-and-e-money-081215.pdf>
- Taouab, O., & Issor, Z., (2019). Firm Performance: Definition and Measurement Models, Laboratory of Management Sciences, ENCG Kenitra, Ibn Tofail University, Morocco

- Taranzi, M., & Breloff, P., (2010). Nonbank E-Money Issuers: Regulatory approaches to protecting customer funds, CCAP publication
- Tarfasa, S. Ferede, T. Kebede, S., & Behailu, D., (2016). Determinants of growth of Micro and Small enterprises (MSE's): Empirical evidence from Ethiopia, Swiss program for Research on global Issues for Development
- Tawane, I.A., & Muathe, S.M., (2019). Strategy Implementation and Growth of Small and Medium Enterprises in Garissa County, Kenya.
- Tehseen, S. Muneeb, D. Mahmoud, A. B. Hack-Polay, D. Yan, Y. H., & Nawaz, F., (2020). SMEs in the digital business sector: Examining six theories about digital SME success. In R. Ho, A. Ng, & M. Nourallah (Eds.), *Impact of Globalization and Advanced Technologies on Online Business Models*. IGI Global.
- Thomas, C., (2017). Examining significant factors in Micro and Small enterprises performance case study in Amhara region, Ethiopia. *Journal of Industrial Engineering International*, doi 10.1007/s40092-017-0221-y.
- Vitolina, I. B., (2013). Theoretical framework for using resource-based view in the analysis of SME innovations, *European Scientific Journal* December 2013 /SPECIAL/ edition vol.1
- Williamtamunobelega, N., (2014). Money is the lifeblood of any business entity, Coventry University Publication. [https://www.academia.edu/8696145/Money\\_is\\_the\\_Life-Blood\\_of\\_any\\_Business\\_Entity](https://www.academia.edu/8696145/Money_is_the_Life-Blood_of_any_Business_Entity)
- Huang, R. Marquardt, C., & Zhang, B., (2013). Using Sales Revenue as a Performance Measure. *SSRN Electronic Journal*. 10.2139/ssrn.2311349.