DIGITAL CREDIT BORROWING AND THE FINANCIAL RISK EXPOSURE OF MICRO AND SMALL ENTERPRISES IN NAIROBI CITY COUNTY, KENYA

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DECLARATION

This research project is my original work and it has not been presented for any other award/degree in any other university.

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DEDICATION

My research project is dedicated to Almighty God my Father, my source of inspiration, Knowledge, Wisdom and Understanding. The Lord has been the source of my strength throughout this program and on His wings only have I ascended. I also dedicate this project to my Husband Arnold and Children for their inspiration, encouragement and love throughout my academic life. I owe you my love. Thank you very much, God bless you abundantly.

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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
APRs	Annual Percentage Rate
CBA	Commercial Bank of Africa
CBD	Central Business District
CBK	Central bank of Kenya
CGAP	Consultative Group to assist the poor
CRB	Credit Reference Bureau
DLAK	Digital Lenders Association of Kenya
ERM	Enterprise Risk Management
Fintech	Financial Technology
FSD	Financial Sector Deepening
GDP	Gross Domestic product
GOK	Government of Kenya
KCB	Kenya Commercial Bank
KYC	Know Your Customer
KIHBS	Kenya Integrated Household Budget survey
MFIs	Microfinance institutions
MNOs	Mobile Network Operators (Wireless Telecommunications)
MOSPI	Ministry of Statistics & Program Implementation
MSEs	Micro and Small Enterprises
NACOSTI	National Commission for Science, Technology and Innovation
NCC	Nairobi City County
NHIF	National Hospital Insurance Fund
NPL	None performing Loans
NSSF	National Social Security Fund
SACCOS	Savings & Credit Co-operative Societies
SMEs	Small and Medium Enterprises
SMS	Short Message Service (Cellular phone text Messaging)
SPSS	Statistical Package for Social Sciences
TVET	Technical Vocational Education and Training Institutions

OPERATIONAL DEFINATION OF TERMS

Collateral base: It is the amount of security against which a lender will advance funds to A business/individual. It presents a maximum cap on how much asset-Founded debt a business can obtain.

Cost of Borrowing: The amount of money paid in interest on a digital loan debt.

Credit Appraisal Monitoring: It is a process by which a digital credit lender checks the feasibility, economic viability and creditworthiness of a prospective digital borrower.

Credit Information Sharing: It is a process where digital credit providers exchange Information on their outstanding loans and advances through Credit Reference Bureaus (CRBs).

Credit Risk Management: Are procedures or processes put in place to contain the default rate by borrowers.

Default: Is a risk inception that states the point in the borrower's settlement history where he/she neglected at least three repayments within a 24-month period

Digital Credit Borrowing: This refers to virtual expertise to initiate and refurbish Loans in order to deliver faster and more efficient decisions. Money is received from the digital app in exchange for Commitment to pay back at usually greater value at stipulated time.

Financial risk Exposure The probability of losing money by a digital credit borrower as a result of non-payment of the digital debt within a stipulated Period.

Interest Rate Charge: This is the amount of money a digital lender charges a digital Borrower to access the digital loan. It is the rate beyond the Principal a digital borrower pays to gain access to digital loan.

Micro Enterprises: Enterprise that employs a maximum of 10 employees and has Sales maximum of Ksh. 500,000.00 per year.

Multiple Digital Borrowing: This is whereby the borrower is able to access more than two consecutive digital loans within 30 days from various digital platforms.

Small Enterprises: Enterprise that employs maximum of 49 employees with annual Turnover of between Ksh. 500,000 and 5 Million per annum.

ABSTRACT

Micro and Small Enterprises have specific funding needs in terms of their business growth. Financial institutions that lend MSE's generally tend to develop long-term relationships, which may further expose lenders to environmental and social issues associated with the enterprise posing financial risks. Digital credit has currently developed as an alternative instrument for providing short-term loans to uninformed borrowers. In free or loosely regulated markets, the use of digital credit may pose serious menaces to consumers, including manipulation, accidental leakages over-indebtedness, identity theft, and fraud. Driven by this knowledge gap, this study sought to investigate the financial risk exposure and the use of the Digital credit borrowing on the Micro and Small Enterprises in Nairobi City County in Kenya. The objectives of this study were to find out through research the Design & Delivery of Digital Credit Loans, Cost of Borrowing the loans, Literacy Levels of the Borrowers, and Credit Risk Management. The information that provided by this research was benefit digital credit lenders, the borrowers, academicians and policy makers. The study adopted the theory of Micro-Loan borrowing Rates, Credit risk Theory, Liquidity Preference Theory and Loanable Funds Theory. A sample of 385 respondents drawn from a population of 21,100-registered Micro and Small enterprises registered in Nairobi City County was used to arrive at the conclusion. Primary data was collected from sample population using open and closed ended questionnaires. The questionnaires were self-administered. The study used descriptive design. The reliability of the questionnaires was determined by Cronbach's Alpha. The variables were considered reliable because their reliability values exceeded the prescribed threshold of 0.7. The study adopted descriptive research design. Data was coded and sorted by use of SPSS. Descriptive statistics such as percentages, frequencies, mean and standard deviation was used. Afterwards the research findings were presented using pie charts, frequency tables and bar graphs. A multiple linear regression was used to analyze the relationship and draw inferences from research data. The study found out that Digital Credit borrowing and financial risk exposure was predominant because the respondents appreciated the convenience and disbursement speed. Due to the nature of the digital loans, most defaults and late repayments resulted to negative listing at CRB's. The study indicated that the Design and Delivery, Cost of borrowing the digital loans, Financially Literacy Levels, Credit Risk Management, were statistically significant in the financial risk exposure. The moderating variable of income levels was found to be insignificant. The study recommends transparency and consumer protection, Digital sensitizations and campaigns and regulation of the digital lenders.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Richard Partington (2019), in his study on UK buyers rein in credit card usage amidst uncertainties over the economy summarized that as households rein in their spending the thriving in customer borrowing across Britain has chilled to the slowest yearly progress rate in four years. The Bank of England said continuing a trend for frailer levels of household borrowing on credit cards, personal loans and car finance deals annual consumer credit growth slowed to 6.6% in December 2018. Amuel Tombs, the chief UK economist at Pantheon Macroeconomics consultancy, said the decline in the flow of borrowing was probably a key driver behind the slowdown in growth in households' spending last year, The unsecured borrowing boom is over. Economists blamed the explosion of debt on weak wage growth, government benefit cuts, as well as intense competition among credit card providers offering cheap deals and a shift by consumers to buy cars on finance packages.

Julie Cazzin (2017), in his study Canadians are borrowing their way to "wealth" summarize the only way Canadians are discovering that they can hang onto with the Joneses with incomes failing to keep up with inflation, is to treat their love of heaping on debt. And progressively, they are tapping the bank as well as family networks. That kind of behavior is clearly detrimental for one's personal finances, but Canadians are undertaking it nonetheless, and the main reason is that debt, by past ideals, is filth economical. Regrettably, they are getting excessively used to it being that way and several of them expect it was halt that way. In numerous cases borrowing during this small interest rate setting has operated for many Canadian shoppers, if they reserved up their scheduled expenditures.

According to Omidyar Network & Boston consulting Group report (2018), *Credit disrupted Digital MSE's Lending in India* summarizes that, there are between 55 and 60 million MSE's operating in India today, which are lending contributors to the nation's employment and gross domestic product (GDP). Yet this contribution remains well below its potential. A significant barrier to growth has been the lack of access to

formal credit – today, roughly 40 percent of India's MSE's lending is done through informal sector, where interest rates are at least twice as high as the formal market. This lending landscape is set for rapid change, with digital lending poised to disrupt the status quo.

The India MSE's opportunity is driven by three major shifts. First, MSE's especially those with annual revenue between INR 10L and INR 1 Cr ($15,000-$150,000), are rapidly formalizing and digitizing. Second, the maturing India Stack, along with growing API-based data availability has fundamentally transformed every step of the credit value chain. Near end-to end digital MSE's lending has become a reality, with loan approval turnaround times as short as a day. Third, the increased receptivity to digital lending by MSE's indicates the large scale of the potential market. This environment has led to watershed moment for MSE'S Digital lending in India. Digital practices are transforming the entire MSE's credit value chain, from sourcing to serving and collections, addressing MSE's borrower pain points and demonstrating the potential for unit economies that are 30 and 40 percent more favorable than traditional finance.

According to Kaffenberger, M., & Totolo, E. (2018) in their study on similarities and differences digital credit markets in Kenya and Tanzania. Digital credit has transformed entry to prescribed credit in Tanzania and Kenya, transforming the area into a temperament for technology and lending advances. Even though both republics logged fast reception, a new study by FSD Kenya and CGAP with almost 8000 persons found large alterations as well as similarities in the operation and practice of digital credit in the two regions. The similarities propose features they may be shared to digital credit as products, while alterations are mainly due to dissimilar arrangements of the banking sectors, indigenous financial settings and telecommunication.

To be prosperous in Micro and small enterprises, finance plays a key role, in startup, expansion, diversification and working capital of the business firm. Without finance, no one-business enterprise can accomplish its resolutions. Capital is the pillar of MSEs and several other business enterprises (Mckernan & Chen, 2005). A smaller amount of aid to external finance, have been found to have and to more inhibit in their operation and growth both in the unindustrialized and industrialized sphere small firms (Galindo

& Schiantarelli, 2003). In Kenya, the trivial business sector has both the prospective and the important duty of getting multitudes of individuals from the struggling level including the casual economy to the conventional economy. The segment was projected to hire over 50 per cent of the waged population - equal for 2.3 million persons, according to a survey conducted in 1999. Formal MSEs hire over 40 per cent of the operational population as much as majority of the MSEs in Kenya function informally (Kenya Economic Report, 2013).

Just as a slow-moving economy in which exports have underachieved has forced Kenya to assemble for another credit to repay a loan that was maturing, harsh economic times such as poor industry performance, retrenchments, or deferred salary have seen digital borrowers' scuffle to pay their loans. The prevalence of mobile money transfer services and high mobile internet connectivity have enticed wealthy investors into the country's vibrant fin-tech. Banks too have closed down their mortar-and-brick divisions and set up shop in smart-phones where they have made great monies by pricing the micro-credits extravagantly despite the little overhead costs incurred. There are currently over 49 digital credit providers in Kenya, with new services being flung persistently (Singh, A 2019). All they have required of borrowers is for the latter to allow them access to their call records, Face book accounts and text communications.

Loan request and distribution has been truly prompt, creating an extraordinarily wonderful capability for borrowers who were previously frustrated by the wearisome loan application process used by banks, microfinance institutions (MFIs) and Sacco's. However, there might be a sad finish to what was hypothetical to be an inspiring story of financial inclusion in Kenya. Rather than leave the borrowers well off, the many digital credit suppliers might have pushed them into a financial slavery. Numerous Kenyans are now addicted to a number of such firms, sometimes being compelled to borrow from one mobile loan app to repay another.

1.1.1.1 Design and Delivery of digital credit loans

Digital credit presenting swift trivial loans distantly over digital frequencies is a rising trend in low-income states, especially in sub-Saharan Africa. Example is the M-Shwari in Kenya hurled by CBA in 2012 (Cook and McKay 2015), but a growing number of fresh disseminations is out to emerge each year. CGAP has sought to distinguish digital

credit from conservative loans by stating that digital credit is prompt, robotic, and distant (Chen and Mazer 2016). Upon application, an acknowledgment verdict may be completed within a very short duration record inside 24 hours. Operating through a structure of online decision trees and procedures enables proceeding with decision-making process, which is generally computerized. Credit conclusions for each advance depend less on human verdict and physical procedures but further on obtainability of main digital data, such as mobile phone registers. More so, one on one contacts are restricted, as dealings such as, loan requests, payouts, and settlements are approved out distantly, mostly via the mobile network. Many digital credit models do not necessitate for patrons to have earlier monetary account possession or credit past hence substantial financial inclusion insinuations.

The distinctive features that reveal how digital credit offerings operate include Loan entitlement supported by existing digital access. The digital credit products analyzed target existing customers of wireless telecommunications. As such, borrower worthiness is tied to the earlier repayment to and use of speech and text messaging, digital payments, and—if appropriate—bank past. Digital credit providers aim these market sections to influence their digital data records to evaluate a prospective borrower's opening loan suitability. For instance, M-Shwari and KCB M-Pesa offered by Safaricom in partnership with CBA and Kenya Commercial Bank (KCB) respectively are two distinct banking products offering digital loans. The borrowers have to be registered Safaricom M-Pesa customers and used M-Pesa for not less than six months to qualify to apply for either loan. Loan verdicts are computerized and influence nontraditional digital data. The digital credit request procedure occurs over a mobile device and with restricted in-person connections. This is particularly factual in Africa, where mobile phones are the chief links to digital infrastructures (whereas, in other markets, virtual banking over individual laptop may be more prevalent).

To gain analytical perceptions into a potential borrower's, prevailing digital data are leveraged. Companies providing customer credit scoring services by using such nonconventional data points. An example of a nonbank financial institution, such as The Branch, it uses data stored on the aspirant's smartphone, comprising Text messages, call records, and communication lists to gauge a borrower's credit risk. Loans are lesser, shorter-durations, and frequently inflated than conventional customer

loan products. Nonetheless products are quiet new and was progress over period, the preliminary loan size is characteristically trivial, and loan terms are usually short. The distinctive loan size of a Branch loan is Ksh.1,000.00, Ksh. 3,000.00 with M-Shwari and KCB M-Pesa, and Ksh.5,000 with Instaloan and Eazzy Loan. Eazzy Loan, EcoCashLoan, M-Pawa, and M-Shwari each have a loan period of 4 weeks. Yearly interest rates are very elevated compared to interest rates charged on most conventional consumer or microfinance credit products in these markets, with most deployments featured charging monthly interest rates between 2 percent and 10 percent. Customer relations, repayments, and collections are accomplished distantly. Loans are reimbursed via digital payment networks either in portions or fully at the end of the loan tenure. Phone call prompts and Text messages remind the borrowers to pay back their loan, while call center staff engage in scripted interactions with felonious borrowers. Most providers levy a penalty charge in case of delinquency.

The remote nature of credit management greatly decreases the necessity for in-person communications and physical appointments of borrowers to brick-and-mortar bank branches to repay their dues. Digital credit hence closes geographical distances that previously acted as a blockade to providing credit. However, the effectiveness of remote credit management to encourage timely loan repayment varies across deployments. Some have agonized from high defaulting rates that forced providers to adjust their credit management process, while others have maintained nonperforming loan ratios at around 2 percent even as they reached scale.

1.1.1.2 Cost of borrowing the Digital Loans

Kenya presented the decree in 2016, that restraints interest rates at 4 percentage points above the Central Bank Rate (CBR). Consequently, commercial banks became watchful about loaning to entities and trivial trades, stating the decree did not allow for valuing uncertain debtors. This provided a market for digital financiers who have establish thriving trade in the area, facilitated by the achievement of mobile money podiums. Kenya has been viewed as the area hub for Fintech in the past few years. This has mainly been due to the enormously effective M-Pesa, which Safaricom hurled in 2007 and saluted as a ground-breaking podium in the contest to counter poverty. M-

Pesa has demonstrated to be a best-selling accomplishment, gathering nearly Sh300 billion in facility income for Safaricom in the latest five years.

In emerging economies, microenterprise development interventions are greatly undermined by enterprise exit as a problem on all job creation interferences, (Bateman, Duvendack, and Loubere, 2019). Numerous MSMEs are garnering up and might well be powered by capital mobilization through mobile money; most of the MSMEs are worsening each day from a deficiency of demand, abandoning the results of new wealth generation (Lonie, S (2018). Currently the discrete over-indebtedness condition in Kenya is reaching a near-danger level and prominent monetary forecasters and ancient promoters of monetary inclusion prompt genuine anxiety that over-indebtedness is currently overwhelming and are appealing the Kenyan government to expedient crucial measures to detain and regulate the swift evolution of microcredit, the academicians explain.

Digital borrowers requesting for small amounts (such as Sh200) have to suffer great charges to the verge where when paying the principal and interest, they are probably in a poorer condition than they were prior the loan. According to EFG Hermes, Egyptian Financial Services Firm, the loans interests charged by diverse mobile money products are retributive to deprived borrowers, most of who are in dire need of the money and with restricted choices.

Deepening Financial Inclusion, but at a High Cost, (2019) reports records that borrowing trivial quantities of advances on mobile money platforms is pricier. For instance, the real cost of borrowing $1 (Sh100) on your mobile using M-Shwari and Fuliza accounts in Kenya are 7.5 per cent per month (138 per cent annual percentage rate (APR). However, the APR of borrowing more than $25 (Sh2,500) on Fuliza is only 17 per cent. This translates to Fuliza being costly for the poor," said EFG Hermes in the report.

1.1.1.3 Financial Literacy levels

Financial literacy/mastery refers to a developing state of capability that enables each individual to react commendably to ever-evolving private and monetary conditions. Financial literacy refers to additional dynamic use of monetary merchandises and

facilities, better regulation of one's monetary impending and condensed exposure to overenthusiastic stores. Monetary watchdogs are required to advance the proficiency and worth of monetary amenities because they are dealing with an educated lot. (Danes & Hira, 2007). This is for the reason that monetarily knowledgeable stakeholders generate modest burdens on monetary organizations to bid more suitably valued and clear amenities, by equating choices, probing the correct queries, and negotiating more successfully. Optimal decisions are made by Stockholders on their share as they are gifted to gauge and liken monetary merchandises, such as bank accounts, credit loan options, saving products, investments, payment instruments and insurance coverage. (Cole, Sampson & Zia, 2008).

Atkinson *et al.* (2007) contends that financial mastery aids to impart individuals with the monetary information essential to generate domestic accounts, start reserves strategies, and create tactical investment choices. To derive maximum utility, appropriate submission of that information aids stakeholders to meet their monetary duties through intelligent forecasting, and resource distribution. Atkinson and Messy (2005) describe monetary mastery as the blend of customers - stakeholders appreciative of monetary merchandises and ideas and their skill and self-assurance to escalate monetary dangers and chances, to make well-versed choices, to understand where to go for assistance, and to incur additional real engagements to progress their monetary happiness. (Miller *et al*., 2009). Brown (2008) states that monetary awareness seems to be reliably connected with own development monetary conduct.

Financial Management skills aids in endowing and enlightening stakeholders hence are well informed about money in a system that is pertinent to their occupation and permits them to utilize this information to assess merchandises and come up with knowledgeable choices. Recent difficulties in advanced credit markets are overcome by greater financial knowledge (Fessler *et al.*, 2007). Financial mastery eases the verdict creating procedures such as disbursement of notices on phase, appropriate commitment controlling which develops the credit value of likely debtors to sustain maintenances, thorough financial systems, financial development and scarcity decrease. It offers also a larger in-charge of somebody’s monetary prospect, additional active usage of monetary merchandises and amenities, and condensed exposure to overenthusiastic vendors or deceitful arrangements. Monetary watchdogs are required

to increase the competence and excellence of monetary services as they are facing an educated lot, (Falicov, 2001). Financial mastery makes investors more breasted for hard monetary periods, over plans that lessen threat such as amassing investments, spreading possessions, and buying cover.

Lower Monetary Mastery is related to lesser domestic savings, as well as advanced reported over-indebtedness. For instance, persons with inferior levels of debt literacy execute in higher cost manners for example in interest rates and fees and report that their obligation loads are excessive or that they are powerless to judge whether their debt is suitable. Greater loan losses leading to poor loan performance cause greater exposure to fraud and abuse because of the lack of financial literacy, which might also lead to increase in financial brittleness borrower behavior (Mitchell, 2005). Financial Management purpose is to grow the participants' possessions, decrease obligations and consequently raise the loan performance of MSE's customers. Likewise, lack of trade and administration expertise can increase monetary barriers for MSE's. Little levels of monetary mastery can stop them from sufficiently evaluating and accepting unlike funding choices, and from traversing intricate advance request dealings. MSE's customer loan performance is improved by skill building of MSE's in relations to making monetary reports and commercial strategies, as well as enlightening their monetary mastery and organization teaching (Guiso & Jappelli, 2008).

1.1.1.4 Credit Risk Management

Credit risk denotes to the likelihood of loss due to a debtors inability to make good the disbursements on some kind of commitment. Credit risk management are the measures or processes put in place to contain the default rate of borrowers. The worldwide monetary crisis – and the credit disaster that followed – placed credit risk management into the supervisory attention. Consequently, watchdogs instigated claim on extra clearness. They required discerning that a lending institution partakes full information of clienteles and their connected credit peril. Better credit risk management achieves improved overall loan presentation and obtaining a reasonable benefit. According to Steward & Lumont (2018).

Digital lenders need to develop and implement comprehensive procedures and information systems to monitor the condition of individual credits and single obligors across the bank's various portfolios through credit information sharing and credit appraisal monitoring. These procedures need to define criteria for identifying and reporting potential problem credits and other transactions to ensure that they are subject to more frequent monitoring as well as possible corrective action, classification and/or provisioning. An effective credit monitoring system will include measures to • ensure that the bank understands the current financial condition of the borrower or counterparty; • monitor compliance with existing covenants; • assess, where applicable, collateral coverage relative to the obligor's current condition; • identify contractual payment delinquencies and classify potential problem credits on a timely basis; and • direct promptly problems for remedial management. (Report Sound Practices for Loan Accounting and Disclosure (1999) and Best Practices for Credit Risk Disclosure (2000).

1.1.2 Financial Risk Exposure of Micro and Small Enterprises

Digital credit although it has assisted the MSE's to deal with financing their small businesses, unexpected emergencies and also helps to decrease stress, it has made borrowers do repeat borrowing in order to build their credit limit, so they can get huge loan when they need it. (Yates, 2018). Borrowers aim for instance in Tala app to be gold members (can borrow Ksh 10,000 to Ksh 50,000), referring to bronze, Silver and gold loan groupings. Some do so without specific concrete plans, for just purposes of cushioning themselves in the event they need the cash. To avoid financial exposure, borrowers new to digital credit need support from lenders to comprehend the loan terms as well as their benefits and concerns in case of late payments and defaults.

The imminent worries with digital credit originate from the statements that of 10.6 million debtors enumerated with Transunion - (CRB) - 2.7 million are undesirable, in that creditors have surrendered the names of those defaulters to the CRB owing to a non-performing loan (NPL). CRB reportage differs from digital creditor. For example, an M-Shwari loan, is levied at 7.5% monthly, repayable within 30 days, loan limits Ksh. 100 and upto Ksh 50,000 when advance remains unpaid by day 30, the unsettled sum is spontaneously revolved over for 30 additional days and an extra 'roll-over fee'

is levied. Conveyance SMS cautions the debtor that he is to be conveyed to the CRB, is one strategy to inspire repayment by CBA, nonetheless the debtor is not be enumerated until 120 days when the advance was obtained. (Kenya's credit reference and information sharing report, 2018)

The action of giving information founded on an NPL is intimidatingly prohibiting in Kenya. Of the undesirable information on digital advances in Transunion's file, 15% are for advances are of less than Ksh.200. The concern for digital debtors is that the existence of a solitary undesirable report can unpleasantly upset their likelihoods of borrowing from any moneylender, regardless of their general borrowing past. Unique test used by CRB data has traditionally remained for the moneylenders is its usage as a twofold check for warning signs, other than utilizing the debtor's general credit presentation (instance credit score) using both positive and negative listing. Prospective borrowers with negative listings are required by lenders to settle first the unpaid sums on enumerated advances and then to get consent permit from the CRB to demonstrate to the creditor that unsettled arrears have been paid. A consent permit is costly goes for Ksh 2,200, which is 22 times the size of Mshwari bottommost advance limit of Ksh. 100.

Digital borrowers are classified into three special clusters: debtors who under no circumstances settled late or evaded, debtors who settle late but did not evade and debtors who evaded. Though evasion degrees lessen with added prosperity, general late reimbursement degrees rise. Evasion and late settlement do not differ expressively across occupations, there is specific variance in the evasion degrees which are somewhat advanced for digital debtors who hinge on on farming or casual labor, nonetheless the alterations are trivial and not numerically important. (Kenya's Credit Reference and Information sharing report, 2018).

1.1.3 Income Levels of Borrowers

According to FSD report, (2018) on Digital credit in Kenya, Digital credit borrowing is least used by those in agriculture or who are reliant on communal transmissions and most used among mobile holders who are in employment or run their own trade. This trend might be associated to features of the computerized credit recording conclusions and that information that feeds into those assumptions that make it easier for these

clusters to achieve admission to digital loans because of digital money transactions. The more stable your revenue is, the more you are eager of borrowing digital loans as your capacity to repay becomes easier.

Employed workers are by far the most dynamic debtors and the mutual operators of digital credit. Digital debtors that hinge on manual labor or farming are the smallest users because of the degree that recurrent and repetitive habit of digital credit entails a consistent capability to repay the principle and interest on small period advances. Workforces with unsteady revenues like MSE's are expending digital credit so often because of lower expertise, low-wage earners with restricted savings capacity. Whereas 1 in 2 mobile proprietors, the wealthy 20% of the population utilize digital credit, only 1 in 5 of the deprived 20% does. Nevertheless, the statistics of dynamic to sluggish debtors amongst the deprived and wealthiest mobile proprietors are alike. By almost double the figure of dynamic to sluggish debtors, the mid 40% of the populace in prosperity footings is the greatest dynamic section. (FSD report, 2018)

Digital credit lenders advertise digital credit products that take full advantage of initial loan offering in an attempt to focus on the lenders proceeds rather than the client debt capacity. Marketing messages enrich recurrence borrowing by emphasizing future availability to higher loan limits, this makes the borrowers borrow more than what they can manage to pay for or even undertake multiple loan to repay the earlier loan. (Owen, J. 2018)

1.2 Statement of the Problem

One of the most difficult tasks faced by the small and medium scale business is obtaining sufficient finance to start and operate their business. As contained in the GOK survey (1999), lack of credit has been rated second most challenging factor facing MSEs. This has not been easy for MSEs in Nairobi City County, due to the stringent credit terms offered by financial institutions. Most of small businesses do not have access to finance due to lack of minimum requirements from profitable banks in Kenya. Most profit-making banks have been hesitant in lending to the small business owing to absence of security, credit past, financial statement and banking history. Desperate households and MSEs have been forced to turn to casual cradles of credit, including Sacco, shylocks and digital lenders, which charge exorbitant interest rates. A report on

digital lending released by Financial Sector Deepening Kenya (FSD) in August 2017 shows that there are 49 digital credit providers in the country, with a new one launching every year.

Although CBK governor was talking about informal digital lenders, formal banks have taken the cue from such platforms, coming up with innovative digital and mobile lending tools that charge interest of between 4 and 7.5 per cent per month. These rates translate to an APR of between 48 and 90 per cent per annum, way above the recommended cap of four per cent above CBK's base lending rate that currently stands at nine per cent. Instant loans have become the redeeming feature for most households who rely on it to supplement stagnated revenues. These loans, though exceedingly priced are enticing to unfortunate borrowers. (Consumer Downtown Association, 2018), It is around time regular interests charged are controlled, so uninformed borrowers are not deceived, CDA executive director Japheth Ogutu said. It is also against risk-based interest pricing being fronted by the government and lenders. Lack of uniform credit rating mechanism was giving lenders a loophole to charge interests as they wish.

Several studies have been done on mobile lending, According to Nzayisenga, (2017), a study on the consequence of mobile loaning on the monetary presentation of profit-making banks in Kenya. The research found out that mobile lending definitely and expressively affects the monetary presentation of profit-making banks. The research however looked at only one side of the coin and a criterion for commercial banks was not elaborate. Makena 2018, steered a research on the regulation of digital credit in Kenya; the instance of consumer protection. The focus here was mainly regulatory framework that could be adopted in Kenya to protect the consumers. According to Kaffenberger, M., Totolo, E. & Soursourian, M. (2018) on the study of a digital credit Uprising; Perceptions from debtors in Kenya and Tanzania, the purpose of the study was to identify who is using digital credit, the purposes for which it is used, and the risks borrowers' experience.

This current study focuses on Nairobi City County context and thus, is necessary to further assess points comprehensively on financial risk exposure that arise because of digital credit borrowing. This stimulated the need to design the present study to block

up in the existing crack by evaluating the relationship between the two among Micro and Small Enterprises in Nairobi City County, Kenya. The risk of over-indebtedness due to the extraordinary interest tariffs levied, easy access to multiple advances, lack of disclosures of prices, standings and circumstances of the advances, extensions and roll overs, negative listing in credit reference bureaus, non-performing loans, the use in which these digital loans are utilized for and digital borrower's persona (Repayer, Juggler and defaulter). The researcher intends to exhaustively-study the possible factors that have not been previously empirically verified.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to investigate the relationship between Digital Credit Borrowing and the Financial Risk Exposure to the Micro and Small Enterprises in Nairobi City County, Kenya.

1.3.2 Specific Objectives:

i. To determine the relationship between the Design and Delivery of Digital Credit Loans and the financial risk exposure of the MSE's of Nairobi City County, Kenya.
ii. To establish the relationship between the Cost of Borrowing of the Digital Loans and the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya.
iii. To determine the relationship between the Financial Literacy Levels of the Borrowers and the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya.
iv. To determine the relationship between the Credit Risk Management and the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya.
v. To establish the moderating effect of the Income Levels of the Borrowers and the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya.

1.4 Research Questions

i) What relationship does the Design and Delivery of Digital Credit loans have on the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya?

ii) What relationship does the Cost of Borrowing of the Digital Loans have on the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya?

iii) What relationship does the Financial Literacy Levels of the borrowers have on the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya?

iv) What relationship does the Credit Risk Management have on the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya?

v) What the moderating effect of the Income levels have on the Financial Risk Exposure of the MSE's of Nairobi City County, Kenya?

1.5 Significance of the Study

This study is significant in the context of the possible users of the information availed by it. To the digital credit lenders: This will help the management of the digital credit lenders to review the interest rates charges downwards to avoid losing on the stiff competition and also to cushion their customers against suffering financial losses and reducing defaults. To the borrowers –MSEs: This will help the borrowers to be more educated on the product of digital credit during decision making process to forecast, strategize and guard them from liquidity encounters and possible liquidation.

To the Researchers and scholars: Those interested in this type of research will find it relevant and useful material to support and improve their research. They may use the information for comparison purposes with other research work or as a basis of literature. To the Government and Policy Makers: It will be used to inform them on the need to regulate this sector of digital borrowing platforms to avoid further exploitation of the common "Mwananchi'

1.6 Scope of the Study

The study covered the digital credit borrowing on the financial risk exposure of micro and small enterprises in Nairobi City County, Kenya. The sample frame in this study comprised of owners of the 21,100 MSE's businesses operating from the central business district in Nairobi City County. The study relied on stratified random

sampling through which eight clusters of categories was used to classify the business. A sample of 385 questionnaires was used for primary data. Secondary data was obtained from online and other sources such as research articles, brochures, books journals, and previous reports. Specific reference is Design and Delivery of Digital Credit Loans, Cost of Borrowing the loans, Financial Literacy levels, Credit Risk Management and the moderating variable Income Level of the Borrowers.

1.7 Limitations of the Study

The study-encountered challenges in inaccessibility of classified business information, there was reluctance by digital credit borrowers to divulge information for fear of it leaking personal information and misconception. The researcher overcame by getting an introductory letter from the campus and encouraging the respondents that any information given would be for educational purpose and will be accorded stern discretion it deserves.

Resources for conducting a research were expensive; undertaking the research experienced financial constraints, the scholar operating below a precise constricted financial plan overcame this.

1.8 Organization of the Study

The project is presented in five chapters. The first part of the research focuses on the background of the study, research problem and research objectives as well as the implication of the study. The coverage, restrictions and organization of the research. Chapter Two addresses the hypothetical basics upon which the research is based; the segment also presents a contrast with other researches, study flaws and the theoretical study outline. Chapter Three presents the study procedure in standings of study scheme, target populace, specimen measures and scope, statistics gathering approaches and tools as well as the statistics examination technique. Chapter Four provides Data Analysis, Findings and Discussions. The last chapter deals with Summary, Conclusion and Recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, works from other researches done on this theme and comparable themes has been studied. The examination has tried to report on the financial risk exposures faced by the Micro and Small Enterprises utilizing the Digital credit borrowing to finance their operations.

2.2 Theoretical Review

According to Torraco 2011, Philosophies are conveyed to describe, envisage, and comprehend occurrences and, in numerous circumstances, to test and spread current information, inside the restrictions of the serious leaping expectations.

The theoretical review was to try to find to out particular philosophies that are credited by other scholars, writers and academicians, which are pertinent to this research. The research is steered by the Philosophy of Micro Loan Borrowing Rates, Credit Risk Theory, Loanable Funds Theory and Liquidity Preference Theory.

2.2.1 A Theory of Micro-Loan Borrowing Rates

Cheung, S., & Sundaresan, S. (2006), advanced the Theory of Micro-Loan Borrowing Rates based on the idea of a prototype of loaning and assimilate in markets where the financier has no contact to tangible security and where the debtor is severely funds inhibited. The prototype of small loans slots in a) the absence of contact to tangible security, b) Gentleman watching, c) risk of reprimand on nonpayment, and d) exorbitant inspection by financiers is utilized to govern the steady borrowing tariffs. Observing by financiers is revealed to be stern for balance to be in the prototype if the ripeness of the advance is excessively extended. However, with small ripeness advances, extreme observing is revealed ineffective. One-to-one care shows a double character: on the single pointer, observing by financier's drops the borrowing cluster's capacity to distract the advance for barren uses, nevertheless, it raises the managerial charges of the advance; this escalates the borrowing tariff and subsequently the likelihood of evasion. The way in which the advance tariffs and the choice of balances rest on the

observing overheads, collective-drawback supplies and penalty proficiency is considered when the borrowing cluster ideally selects the mastery of nonpayment to capitalize on the collection's worth. Upsurges in the price of finance of financiers are revealed to end up in extremely superior upsurges in the borrowing tariffs, at great charges of interest. Lastly, all things held constant, an upsurge in the magnitude of the advance characteristically results to greater evasion likelihood.

This philosophy is pertinent to this research, because it forms one of the independent variables which is cost of borrowing of digital loans whose interest rates charged are determined by the non- collateralized loans nature which are expensive to manage, and this price is essentially transmitted on to the debtor, either in the arrangement of the interest tariff levied or in a distinctive charge. Hence, the interest tariff levied on a small tenure digital advance was hinge on the predominant charge of monies to digital lenders, the present yardstick tariff (the main tariff), the solvency of the debtor, the current and future dealings of the debtor with the digital lender, and occasionally additional deliberations. Further, since there are permanent charges incurred in credit enquiry (Credit reference bureaus) and in the dispensation of the advance, we would presume the tariff charges on digital trivial advances to be greater than the tariff on hefty advances.

2.2.2 The Credit Risk Theory

Melton 1974, introduced the Credit Risk Theory or Structural Theory which is said that the default event derives from a firm assets evolution modeled by a diffusion process with constant parameters. Credit risk according to Anderson and Salas, & Saurina, (2002) denotes the danger that exists when a debtor was fail to pay on some kind of liability by missing to submit obligatory outflows. The danger is mainly that of the financier and it comprises vanished capital and bank rate; unsettled damage might be full or part and can come up in several conditions, example a bankrupt investment company incapable to reimburse funds to an investor. To lessen the financier's menace, the financier can execute a credit scrutiny on the potential debtor. This might entail the debtor to undertake suitable cover, such as secured loan cover or pursue sureties of mediators. In the case of Digital credit, borrowing the lender may observe the Mpesa transactions to show liquidity level of the borrower. Generally, the greater the danger,

the greater the tariff charges that the borrowers was be requested to recompense on the liability. (Owojori, Akintoye & Adidu, (2011).

This philosophy is also pertinent to this research since it forms one of the independent variables of the research, the credit risk management. The connection amongst the digital credit lenders and the MSEs in terms of interest rates charged and repayment patterns of the digital loans is defined by the Credit Risk Management Theory.

2.2.3 The Loanable Funds Theory

The proponent of this theory is Knut Wicksell, The philosophy describes the association between loanable monies and tariff charges. It states that source of loanable monies, request for deferred payments determines interest rates, and that there is an affirmative association amid rise in request for loanable monies and borrowing tariffs. It indicates similarly that there is an optimistic association amid growth in tariff charges and the supply of loanable funds. The stream of cash accessible for using and request for cash to be lent determines the tariff charges. A tariff charge is resolute by the extent of undertaking of the request and source of loanable monies. Domestic businesses, clients, regimes and overseas debtors initiate petition for monies. The stream is caused by local reserves, diffusion of cash equilibriums, and cash formation in the funding structure and distant loaning (Mutezo, 2005). Example is a rise in request for moneys, grounds an upsurge in the tariff charges, which subsequently increases the accessible fund and *vice versa*. (Kimuyu, 2000).

Loanable monies fair encompasses of debtors and financiers of cash which control extended period tariffs charges while small period interest tariffs is determined by economic and commercial circumstances in the region (Gorder, 2008). Request for cash to loan was equilibrium with the stream of cash to loan at a precise tariff charge. Tariff charges normally vary with marketplace conditions, so that request aimed at and stream of distributable cash was always continue to be equivalent. Fluctuations in any of the requests for cash or the stream of cash was effect an alteration in tariff rate to reinstate equilibrium.

Interest Rate Determination -In Fig. 1 the demand curve for loanable funds traverses the supply curve at point E and the equilibrium rate of interest (8%) is inevitably determined (by market forces). The interest rate (8%) brings the strategies of borrowers

in agreement with the tactics of lenders. In stability, the quantity of funds demanded by borrowers is equal to the amount supplied by lender (Rs. 250 crores) as Fig. 1 below shows.

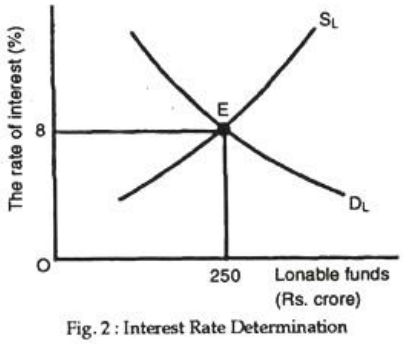


Fig. 2 : Interest Rate Determination

Figure 1.1 Interest Rate Determination

The philosophy is pertinent to the research as it illustrates how the digital credit lenders take advantage of the high demands of the MSEs quest for informal loans to exploit them on the interest rates charged. It deals with the independent variable the financial literacy levels.

2.2.4 Liquidity Preference Theory

This theory was proposed by John Maynard Keynes (1936), which suggests that investors demand progressively higher premiums on medium and long-term securities as opposed to short-term securities. Keynes described it terms of three motives that determine the demand for liquidity. Firstly, transactions motive states that individuals prefer liquidity in order to guarantee having sufficient cash on hand for basic day-to-day needs. That is MSE's in Nairobi City County have a high demand for liquidity to cover their short-term obligations, such as buying groceries, paying rent and/or the mortgage. Higher costs of living mean a higher demand for cash/liquidity to meet those day-to-day needs.

Secondly, the precautionary motive relates to an individual's preference for additional liquidity in the event that an unexpected problem or cost arises that requires a substantial outlay of cash. These events include unforeseen costs like business rent or utility payments. Thirdly, MSE's in Nairobi City County may also have a speculative

motive. When interest rates are low, demand for cash is high and they may prefer to hold assets until interest rates rise. The speculative motive refers to an investor's reluctance to tying up investment capital for fear of missing a better opportunity in the future.

This philosophy is pertinent to the research as it forms one autonomous variables of the research and defines how the owners of the MSE's of Nairobi City County and Digital Credit Lenders relate. The use of digital credit borrowing, digital credit facilities and financial risk exposure are explained by the theory. According to the theory, the challenge of finance gap occurs mainly due to the Liquidity Preference Theory that occurs between the financial service providers and borrowers. What matters when it comes to the relationship between digital credit lenders and MSEs is information asymmetry especially in regards to extending credit. This therefore places the theory in a better position as the study seeks to inaugurate the affiliation between Digital credit services and monetary risk exposure of MSEs OF Nairobi City County.

2.3 Empirical literature review

Previous researches steered on the topic at global, regional and local contexts are reviewed. This enables for identification of research gaps.

2.3.1 Design and Delivery of Digital Credit Loans and Financial Risk Exposure of MSE's in Nairobi City County.

According to Nyaga (2013) who steered a research to find out existing perception and acceptance of numerous mobile cash facilities. It was decided that mobile cash facilities acceptance has some influence on SMEs progression over amplified transactions or investments and advance ease of access, find out if mobile cash facility potentials of little charge, expediency and availability result in improved SMEs performance and find out if mobile money facilities are reflected competent and dependable by SMEs in Naivasha Town. The research established that mobile cash has accomplished a substantial impact to the SME segment. Typical traders depend on it as contrasting to the official funding segment for their daily dealings. Furthermore, all who replied in the research took a strong consideration of the elementary purposes of mobile cash facilities. Proficiency and steadfastness offer more to mobile cash usefulness and SMEs development. Mobile cash facilities have an optimistic influence on sales.

According to Indjikian (2014), the arrival of virtual automated cash conveyed with it the capacity to deliver economical, speedy and further extensively obtainable money for SMEs and to discover for them enhanced answers than the money based informal economy. Numerous kinds of virtual monetary services either aiming SMEs, or appropriate for their necessities have now arisen or are approaching on stream, demanding to exploit on this still extensively untouched and massive chance for initiatives to grow their industrious volumes.

2.3.2 Cost of borrowing the Digital Loans and Financial Risk Exposure of MSE's in Nairobi City County.

According to Mutiso (2012), in the study of constraints of financing; an event research of modest initiatives in Machakos Region, Institutional credit to MSE's has not been substantially used despite a strong interest in debt financing. Interest rates, collateral requirement, cumbersome documentation and time involved were identified as factors constraining access to formal credit. Recommendations made are: the enactment of interest regulatory law; creation of a credit institution to provide information to MSE's and make the current stringent regulatory framework more flexible to allow use of collateral substitutes for securing loans.

2.3.3 Financial Literacy Levels and Financial Risk Exposure of MSE's in Nairobi City County.

According to Musha (2014), who pursued a research to investigate the issues prompting uptake of credit by youths in Nairobi Region. The research focused all the youth in Nairobi aged between 18 and 35 years numbering 1,462,803 out of which a sample size 381, was selected. The regression results of the study revealed that, holding other variables constant, the credit terms, the business and entrepreneurial skills and the awareness of the youths account for 82.3% of the variability in the amount of credits taken by the youths. Also, the regression model developed illustrates clearly that, the credit terms attached to the loans has an inverse relationship with the youth's credit uptake. The conclusions of this research was also generate consciousness to strategy creators on the issues that are essential to be considered to warrant youth to be additionally operative in backing to GDP of the country.

According to Mararo (2018), on the study of the result of mobile money amenities on the development of SME in Nakuru Town, Kenya. The study established that mobile payments, mobile finance and mobile banking had positive significant relationships with the growth of SME. Therefore, the researcher recommended that mobile money providers should encourage SME's traders to adopt the use of mobile cash facilities through enhanced advertisement.

The World Bank (2000) studied the restrictions to development and occupation in trivial, medium and extremely trivial initiatives engaging less than 50 employees in South Africa. The investigations establish that the serious issue was the lack of skills as only 24-30 percent of companies with above five workers embark on formal expertise training. Absence of awareness of available training programs and lack of government support were attributed mainly to the low levels of training by the firms. The study similarly establishes that engagement between 1997 and 1999 grew by 23 percent. Though, progression in hire happened owing to the birth of new-fangled firms within the same period. Occupations were formed in 41 percent of the firms, nonetheless at the same time job cuts were of 27 percent and no variation in employment denoted 32 percent. The study concluded that the chief motive for sluggish venture and engagement development was due to inadequate request for goods/utility, thus making market conditions more important than labour or capital.

2.3.4 Credit Risk Management and Financial Risk Exposure of MSE's in Nairobi City County.

According to Totolo *et al* (2018) conducted a study on a digital credit uprising, intuitions from debtors in Kenya and Tanzania. The findings and discussions with digital lenders propose that evolution in the digital credit display is determined by a section of dynamic operators who borrow every month or even every week. This segment would benefit from opportunities to graduate to larger, more affordable loans with longer repayment periods that can be put to more productive purposes than the typically short-term, high-cost current offerings. The results also indicate that better transparency and consumer protection requirements are needed, and regulators was need tools to monitor compliance and consumer outcomes. This includes tracking the potential risks of over-indebtedness and multiple borrowing, as up to 20 percent of borrowers' report reducing food purchases to repay their loans and about half in each

country report having repaid a loan late. Credit reporting requirements and credit bureau functions may need to be updated, as the current practice of monthly reporting by lenders is not well suited for the speed of digital credit. Such rules should be extended to cover all lenders, including those that are currently unregulated, so that all borrowers have the same protections.

2.3.5 Digital Credit Borrowing, Income Levels and the Financial Risk Exposure of MSE's in Nairobi City County.

According to Ngaruiya *et al* (2014) the beginning of mobile handset monetary deal has conveyed great assistances to SMEs. Cash transmission is now obtainable at a small fee likened to the outdated lending arrangement whereby almost all dealings would be executed inside the banking buildings. By way of a concern, there arose a necessity to research on cause of mobile cash dealings on monetary viewpoint of Minor and Average initiatives. The purpose of this research was to establish the consequence of mobile cash dealings on monetary presentation of Minor and Average initiatives in Nakuru Town (CBD). The research engaged descriptive study policy. The research tested 120 out of 640 trades by means of purposive sampling method. Survey existed as statistics gathering tool. The outcomes of the research showed that mobile cash dealings ensure an important outcome on trade's income.

2.3.6 Digital Credit Borrowing and Financial Risk Exposure of MSE's in Nairobi City County.

According to the study by FSD Kenya (2018) on Digital credit in Kenya: indication from demand-side examinations, recognized that, in the previous five eras, digital advances have altered the trade meant for borrowing in Kenya. For masses of grown-ups, the opportunity of borrowing from their handsets has unlocked the access to secluded, prescribed customer borrowing for the initial phase. Nevertheless, the valuing, promotion and possible mismanagement of these merchandise joined by the widespread undesirable recording of debtors who fail to reimburse these minor advances has elevated a rising response of anxiety about their decree and the negative influences they have on debtors and the monetary structure generally further.

2.4 Research gaps

The review of empirical work by other researchers revealed that there exist various study gaps, which the present research would pursue to fill. The researchers looked at certain variables under the current study in isolation while others reflected a different context. This current study focuses on Nairobi City County context and thus, is necessary to assess points comprehensively on financial risk exposure that arise because of digital credit borrowing. This stimulated the need to strategy the present research to seal in the remaining gap by evaluating the relationship between the two amongst Tiny and Minor Initiatives in Nairobi metropolitan Region, Kenya. The risk of over-indebtedness due to the exorbitant interest rates levied on the borrowers, easy access to multiple loans, lack of disclosures of prices, terms and prerequisites of the loans, extensions and roll overs, negative listing in credit reference bureaus, non-performing loans, the use in which these digital loans are utilized for and digital borrowers persona (Repayer, Juggler and defaulter). The researcher intends to exhaustively study the possible factors but have not been empirically verified.

Table 2.1 Summary of Literature Review				
Author/Year	**Study Focus**	**Findings**	**Gaps & Focus current study**	
Atandi, 2012	Effect of credit accessible to MSE's on business performance, The case of Kitale town	This study examined the effect of credit available to MSE's from diverse sources on their business performance in Kitale County.	The study concentrated on only on the design & delivery of loans to MSE'S in Kitale County	This current study mainly focusses of digital credit as a form of borrowing to MSE's in Nairobi County.
Makena,2018	The By-law of Digital credit in Kenya: The situation study of customer defense	Findings show that digital credit if not properly regulated there are chances that the consumers was be exploited	The study mainly concentrated on regulation only of digital credit.	The current study is broader as it looks at all factors about digital credit that make MSE's get into risk Financial exposure.
Mararo, 2018	Influence of Mobile Cash facilities on Development of SME's Nakuru County	Finding established that mobile payments, mobile finance and handset banking had positive noteworthy association with the progression of SME.	The study focused Mainly on one variable design and delivery of Mobile Money services SME's in Nakuru County.	The current study focusses on four independent variables on Digital credit borrowing and financial risk exposure in Nairobi City County, Kenya

Musha, 2014	Critical factors & credit uptake in Youth Enterprise Development Fund in Suna East constituency Migori County	The research recognized that customer evaluation borrows threat control and assembly policy significantly influence financial performance of MFI's in Kenya	The study focused on the Youth group in Migori County, hence Context variation	This current study focusses Digital Borrowing on all MSE's in Nairobi
Nyaga, 2013	Establish present responsiveness and uptake of various mobile money services in Naivasha Town	The research establish that portable cash services had made substantial impact to SME segment and sales in Naivasha Town	The research focused on financial Literacy variable only in Naivasha Town, hence only one independent variable studied and context variation	This current study mainly focusses on all variables of digital credit borrowing on the financial risk exposure of the MSE's in Nairobi, Kenya
Wainaina, 2017	Mobile based loan management practices and financial performance of commercial Banks in Kenya	The study sought to establish the effect of mobile based loans borrow counting system financial Presentation of Profitable institution in Kenya.	The study focused mainly on practices and presentation on the profitable Banks.	This current study focusses on the effect of these digital credit borrowings on the enterprises MSE's

Source: Researcher, 2020

2.5 Conceptual Framework

As reported by Kombo and Tromp, (2009) a notion is a theoretical or broad impression liable or resulting from exact examples. A theoretical outline is an opinion taken from applicable fields of investigation or an established comprehensive notion which is used to construct a succeeding presentation. Mugenda and Mugenda (2003) describe a theoretical outline an imagined prototype classifying the prototype under study and the association amid the dependent and autonomous variable. Kothari (2004) states the autonomous variable referred as the expressive variable is the hypothetical reason of the differences of the reliant variable, while a reliant variable refers to the variable that the investigator desires to clarify.

Below is a figurative representation of the variables to be explored by the study

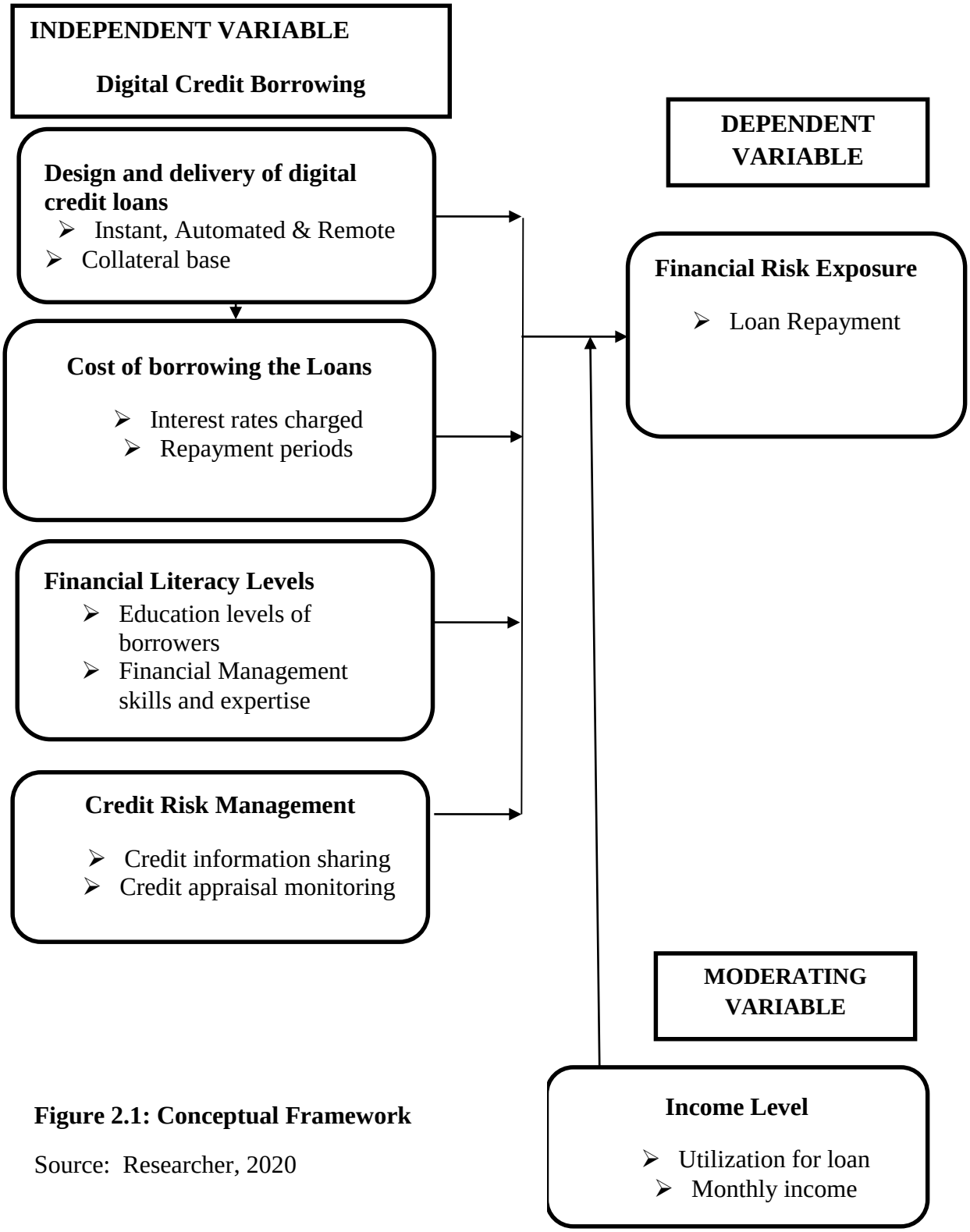


Figure 2.1: Conceptual Framework

Source: Researcher, 2020

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter expounds on the populace of the study, selection procedure, and statistics gathering procedure, examination and presentation.

3.2 Research design

This research utilized the expressive layout, which delivers evidence on clusters, and occurrences that previously exist and certainly not different clusters are created (Fink, 2003). Descriptive research defines proceedings, circumstances and status quo of the current as contrasting to the past research, which defines the historical (Good, 1963). Descriptive design often involves determining the association between two or more variables. Therefore, a descriptive design was be carried out among the MSEs who was be selected to respond to the prepared questionnaire. This study used descriptive statistics to describe the consequence of digital credit borrowing on the monetary risk exposure of MSE's in Nairobi County.

3.3 Target population

The Target population is the section of inhabitants through which a researcher observes and afterwards draws conclusion, which can be generalized for the whole population. This study targeted MSE's that are located at the Central Business District of Nairobi City County. The delimitation used is the consideration of Nairobi City County (NCC) trading licenses and only the MSE's's that have this certification were captured in this study. The researcher targeted owners and managers of SME's in the CBD across all sectors as listed in the Nairobi City County licensing department in the year 2020. There are eight clusters of different sub-sectors in Nairobi CDB. These sub-sectors targeted in this study include; Jua-Kali, General traders, Agriculture, Accommodation, Professional, Education, Transport and Factories. Nairobi business licensing department estimate that, from the above main sectors, there are 21,100 MSE's in CBD area.

Table 3.1 Clusters of Different Subsectors in Nairobi City County

	Cluster of MSE's Nairobi City County
1	Jua Kali
2	General Trade, Wholesale, Retail store
3	Agriculture, Forestry, Natural Resources
4	Accommodation & Catering (Hospitality)
5	Professional & Technical services
6	Private Education, Health & Entertainment
7	Transport, Storage & Communication
8	Industrial plans, Factories & Workshops

3.4 Sampling Design

Sampling design is a scientific utility that provides one with the likelihood of whichever specified trial being picked.

3.4.1 Sampling Technique

Sampling technique is the procedure whereby the objects in a section are identified and selected (OECD, 2004). This study relied on stratified sampling through which 8 clusters of categories were used to classify the businesses. According to Kothari (2004), stratified sampling enables the participation of all components that make up a study population. From these clusters, it was possible to get a representative sample from each individual cluster and enabled to cover all the business that operate within the city of Nairobi. Sampling frame is the definite register of components over which the trial that forms the units of observation is drawn (Cooper and Schindler, 2006). This sample frame in current research comprised of owners of the 21,100 SME businesses operating from the central business district in Nairobi city. In addition, the SME's through which the sample is drawn from were required to at least possess the Nairobi City County business-trading license.

3.4.2 Sample Size

These was determined by the Fisher's et al. (2007) formula

$$\mathbf{n=Z^2\ pq/d^2}$$

Where n=the desired sample size

Z=standard normal deviation at required confidence level 95% or 1.96

P= Business owners, 0.5 of the entire population of SME's.

q=1-p (the proportion without characteristics)

d=level of statistical significance (degree of freedom=0.05)

$n = 1.96^2(0.5)(0.5)/(0.05)^2$

n=385 respondents

3.4.3 Operationalization & Measurement of variables

The independent variables constituted of Design and Delivery of Digital Credit Loans, Cost of Borrowing the Loans, Financial Literacy Levels and Credit Risk Management. The dependent variable on the other hand constituted the Financial Risk Exposure. The moderating variable is the income levels. The table 3.1 below shows operationalization of the variables.

Table 3.2 Operationalization and Measurement of Variables

Variable	**Variable Type**	**Category Scale**	**Measurement**
Financial Risk Exposure	Dependent	Ratio	NPLs Ratio NPLs x 100% Total Outstanding Loans
Design & Delivery of Credit Loans	Independent	Ordinal	Amount (Ksh.) of Digital Loan granted & Frequency
Cost of Borrowing the Loans	Independent	Ordinal	Amount (Ksh.) of Digital Loan Repayment
Financial Literacy Levels	Independent	Ordinal	Education Levels & Expertise Skills Level.
Credit Risk Management	Independent	Ordinal	Amount (Ksh.) of Digital Loan defaulted
Income Levels	Moderator	Ordinal	Physical Cash (Ksh.) Monthly.

Source: Researcher (2020)

Table 3.3 Sampling Frame

Category of SME, Target population and Sample size

Category of MSEs	**Number in CBD**	**Percentage %**	**Sample Size**
Informal Sector (Jua Kali)	254.00	1%	4
General Trade, Wholesale, Retails, Stores	11,353.00	54%	208
Agriculture, Forestry, & Natural resources	1,025.00	6%	23
Accommodation & Catering (Hospitality)	1,750.00	8%	31
Professional & Technical services	3,242.00	15%	58
Private Education, Health & Entertainment	934.00	4%	15
Transport, Storage & Communication	1,200.00	5%	19
Industrial plans, Factories & Workshops	1,342.00	7%	27
TOTALS	**21,100.00**	**100%**	**385**

Source: Nairobi City County, Licensing Department (2020)

This sampling design was utilized since the populace of the research was not alike and was to be distributed into units namely Jua-Kali, General traders, Agriculture, Accommodation, Professional, Education, Transport and Factories. Kothari (2004) commends stratified chance selection since it is precise, straightforward, detachable into applicable divisions and it improves better evaluation; hence representation across sections.

3.5 Data Collection Instruments

The research was utilized dual classes of statistics, which are main and subordinate data. Main data was composed using self-allocated surveys and scholar managed surveys to illustrate the MSE's Respondents. For the self-allocated, drop and pick technique was be utilized. This was permit the plaintiffs to provide their replies in an unrestricted setting and was help the scholar acquire statistics that would not be assumed if discussions was be used. The survey constituted of close-completed queries using liker scale and open-completed queries. The open-completed queries delivered supplementary data that would not be captured in the close-completed inquiries. The scholar was train dual enquiry aides on entire matters relating to the statistics gathering processes and measures afore embarking on the research. The enquiry aides helped the scholar in collecting the data.

The established 385 surveys was distributed to tiny and minor businessperson in Nairobi Town. Subordinate statistics was be regained from virtual and additional bases such as records, periodicals, study pupillages, flyers and prior information. Before statistics gathering process, a commencement encyclical sanctioning statistic gathering was be got from the Department of Business, Kenyatta University. Other relevant authorities from the credit digital platform were also acquired to enable the statistics gathering process.

3.5.1 Validity Test

Carmines and Zeller (2014) declare the validity is viewed as a pointer of "nonconcrete idea" and is measured precisely to what it proposes to measure. In this study, preliminary study was executed to evaluate the rationality of the study tools. Mugenda and Mugenda (2003) clarify that, the correctness of data mainly hinges on the value of statistics collection gadgets. Kaliapen and Hilman (2013) illuminate that validity is the grade to which an investigation instrument is made to process what it is made-up to measure. The research was using substance legitimacy since it actions the extent to which the trial of the stuffs characterizes the substance that the exam is intended to compute. A trial findings were steered by giving selected surveys to certain MSE's to be completed by populaces arbitrary. After the pilot study, the scholar was capable of

perceiving queries that need elimination and those that are unclear. The ultimate survey was be then produced and was be utilized to gather statistics for investigation.

3.5.2 Reliability Test

Reliability is the degree to which identical responses can be gotten by means of the similar tools further than once. (Babbie, E. R. 2010). Reliability is "the steadiness of a measure of a notion". One of the significant features to bear in mind when determining whether a measure is reliable and stable over time, is the need to be able to produce the identical results, by using the same investigation approaches under like settings over time. It concentrates on the constancy of computation done in a period; consequently, the outcome from that computation ensures slight disparity (Bryman & Bell, 2011). In the study, a prior-exam of the survey was be available before the real statistics gathering. The established form was be tested for its validity and reliability through experimental analysis. Reliability test was aid to find out the interior steadiness of the tool. Assessment re-assessment technique was be utilized to experiment the surveys, which do not conform to the example of the research. Reliability was be verified through the Cronbach's alpha check which was designed through the aid of Statistical Package for Social Sciences (SPSS). An experimental study of 8 respondents was be embarked on from the pursued populace done by random sampling. Cronbach's Alpha check gauges the inside steadiness. The reliability standards was tested for the four autonomous variables. The variables are considered reliable if their reliability values exceed the prescribed threshold of 0.7 according to Loehlin (2004).

3.6 Data Analysis and Presentation

This segment deliberates in what way data was be analyzed and how it was presented. According to Mugenda and Mugenda (2003), statistics got on the ground in unprocessed look is problematic to understand except it is prepared, implied then examined. Qualitative inquiry comprised of investigative, classifying, charting and relinking facts to report the study queries. Qualitative data was be clustered into expressive designs and subjects which was be perceived to aid in the briefing and grouping of the statistics.

Quantitative inquiry was be studied by the usage of arithmetical methods for instance occurrence totals, one hundredth, mathematics averages, normal nonconformities, pie

charts and formulation to demonstrate variations in incidences. Qualitative statistics was be examined descriptively by usage of questionnaires. Bar diagrams was be utilized to show nominal or ordinal data. Statistical Package for Social Sciences (SPSS) version 21.0 was utilized to help in coding, recording and examination of quantitative data attained from the closed done queries.

The study adopted the resulting regression prototype to create the system of connection amongst the digital credit borrowing and the level of financial risk exposure by the MSE's in Nairobi County, Kenya.

The equation took the following form;

$$\mathbf{Y = \beta_0 + \beta_1 Dd + \beta_2 Co + \beta_3 Fl + \beta_4 Cm + \varepsilon} \quad \text{.....3.1}$$

Where: Y = Financial risk exposure; Loan Repayment- Dependent Variable

Dd= Design & Delivery of Digital Credit Loans

Co = Cost of borrowing the loans

Fl = Financial Literacy Levels

Cm= Credit Risk Management

β_0 = the constant

β_1-n = the regression coefficient or change included in NPL by each factor

ϵ = error term

Thereafter the researcher pursued to establish the effect of the moderating variable. In this research, it was the Income levels of the Borrowers of the Micro and Small Enterprises of the Nairobi City County. Its effect is analyzed using the multiple regression analysis. The model is revised as follows to assess its effect:

$$\mathbf{Y = \beta_0 + \beta_1 Dd + \beta_2 Co + \beta_3 Fl + \beta_4 Cm + \beta_5 In + \varepsilon} \quad \text{.....3.2}$$

Where: All the other variables remain the same as above model while

β_5 = the regression coefficient of the Income Level of Borrowers

In= Moderating variable (Income Level of the Borrowers)

3.7 Ethical Considerations

The researcher instigated various footsteps to safeguard the research witnesses to moral study values. Study approval certification was acquired from the National Commission for Science, Technology and Innovation. The investigator was seeking consensus from the owners of each MSE's afore dispensing the surveys. Participants were requested orally to agree to partake in the study, for which they were permitted to have a say or not. The respondent's identity is veiled to conceal self. Privacy of the data acquired from the respondents was handled with extreme noble trust.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter links the various variables included in the model and aims at establishing a relationship between Digital Credit Borrowing and the Financial Risk Exposure of Micro and Small Enterprises in Nairobi City County, Kenya.

4.1.1 Reliability Test of the Research instruments

Reliability was verified through the Cronbach's Alpha Check. An experimental study of 8 respondents was embarked on from the pursued populace done by random sampling. The reliability standards was tested for the four autonomous variables.

The results are shown below:

Table 4.0 Reliability Test of Research Instrument

Variable	Construct under Measure	Cronbach Apha Score	No. of Questionnaire Itemized	Conclusion
Dd	Design & Delivery of Digital Credit Loans	0.756	8	Reliable
Co	Cost of borrowing the loans	0.841	8	Reliable
Fl	Financial Literacy Levels	0.742	8	Reliable
Cm	Credit Risk Management	0.811	8	Reliable

Source: Researcher (2020)

The variables are considered reliable because their reliability values exceed the prescribed threshold of 0.7 according to Loehlin (2004).

4.2 Response Rate

The researcher administered 385 questionnaires, out of which we received 368 questionnaires back, which is a response rate of 94.8%, which is above the minimum threshold of 70-80%, according to Mugenda and Mugenda (2003). The response rate is hence a valid conclusion.

Table 4.1 Response Rate

Category of MSE's	Questionnaire Administered	Questionnaire Recovered	Response Rate %
Jua Kali	4	4	1.0
General Trade, Wholesale, Retail store	208	205	52.0
Agriculture, Forestry, Natural Resources	23	18	4.7
Accommodation & Catering (Hospitality)	31	30	7.8
Professional & Technical services	58	58	15.0
Private Education, Health & Entertainment	15	15	4.4
Transport, Storage & Communication	19	13	3.4
Industrial plans, Factories & Workshops	27	25	6.5
Totals	**385**	**368**	**94.8**

Source: Researcher (2020)

4.3 Demographic Profile of the Respondents

The demographic profile of the respondents which comprising of the gender, Age distribution, Educational qualifications, Enterprise category and Number of Employees, assists to give satisfactory information from the respondents on the effect of Digital Credit Borrowing on the Financial Risk exposure of Micro and Small enterprises in Nairobi City County, Kenya.

4.3.1 Gender

Table 4.2 Gender of the Respondents

Gender		Frequency	Per cent
	Male	220	59.8
	Female	148	40.2
	Total	**368**	**100**

Source: Researcher (2020)

The results indicate that more male by 19.6% participated in the research than females, which indicated their higher role in utilizing the facility of the Digital credit borrowing in the undertaking. This is consistent with Atandi (2012), who found out that male is more slanted towards adopting new technology.

4.3.2 Age

Table 4.3 Age Distribution of the Respondents

Age in years	Frequency	Percent
18-25	20	5.4
26-33	109	29.6
34-41	209	56.8
42-49	30	8.2
Total	**368**	**100**

Source: Researcher (2020)

The results show that a majority of the respondents (n=209) representing 56.8% of the respondents operating digital credit borrowing in the Micro and Small Enterprises in Nairobi, City County were aged between 34-41 years. The study further shows these were followed with age bracket 26-33 years with (n=109) with 29.6%, then age bracket 42-49 years with 8.2% and 18-25 years with 5.4%.

These shows the mature industrious Borrowers of age bracket 26 to 41 are more dynamic and ambitious in adopting the Digital credit in meeting their monetary

obligations, while the young entrepreneurs 18-25 and near retirees are more hesitant to utilize the same.

4.3.3 Educational Qualifications

Table 4.4 Educational Level of the Respondents

Education Level	**Frequency**	**Percent**
Certificate Level	82	22.3
Diploma/Professional course	175	47.6
Bachelor's Degree	78	21.2
Masters Certification	28	7.6
PHD Level	5	1.4
Totals	**368**	**100**

Source: Researcher (2020)

The study results show that respondents with Diploma and professional courses (n=175) has the highest percent of 47.6 level of education followed by Certificate level respondents with 22.3%, Bachelors with 7.6% Masters holder then PHD Holders with least utilization of Digital Credit Borrowing. This shows the tertiary levels of education or TVET are more conversant on the Digital credit portals at their disposal, as compared to those with advanced academic degrees. This is upheld by Wainaina (2017) study who found out that those who operated the mobile loans management practices were those in tertiary levels.

4.3.4 MSE's grouping

Table 4.5 Enterprise Category of the Respondents

Category of MSE's	Frequency	Percent
Jua Kali	4	1.0
General Trade, Wholesale, Retail store	205	55.7
Agriculture, Forestry, Natural Resources	18	4.9
Accommodation & Catering (Hospitality)	30	8.2
Professional & Technical services	58	15.8
Private Education, Health & Entertainment	15	4.1
Transport, Storage & Communication	13	3.5
Industrial plans, Factories & Workshops	25	6.8
Totals	**368**	**100.0**

Source: Researcher (2020)

The results indicate that General Trade category of Employees (n=205) is the highest with 55.7% and the least category is Jua-Kali (n=4) is 1%. General Trade is highest grouping as they play vital socio-economic role in country, provides employment, income generation and poverty reduction as compared to other categories. This is supported by Henry Rithaa (2020) study of MSEA, that the general traders were seen to promote the development of competitive and sustainable MSE'S.

4.3.5 Number of Employees

Table 4.6 Employees number of the Respondents

Employee No.	Frequency	Percent
Between 1 - 10 Employees	190	51.6
Between 11 - 20 Employees	102	27.7
Between 21 - 50 Employees	69	18.8
Between 51 - 100 Employees	7	1.9
Totals	**368**	**100**

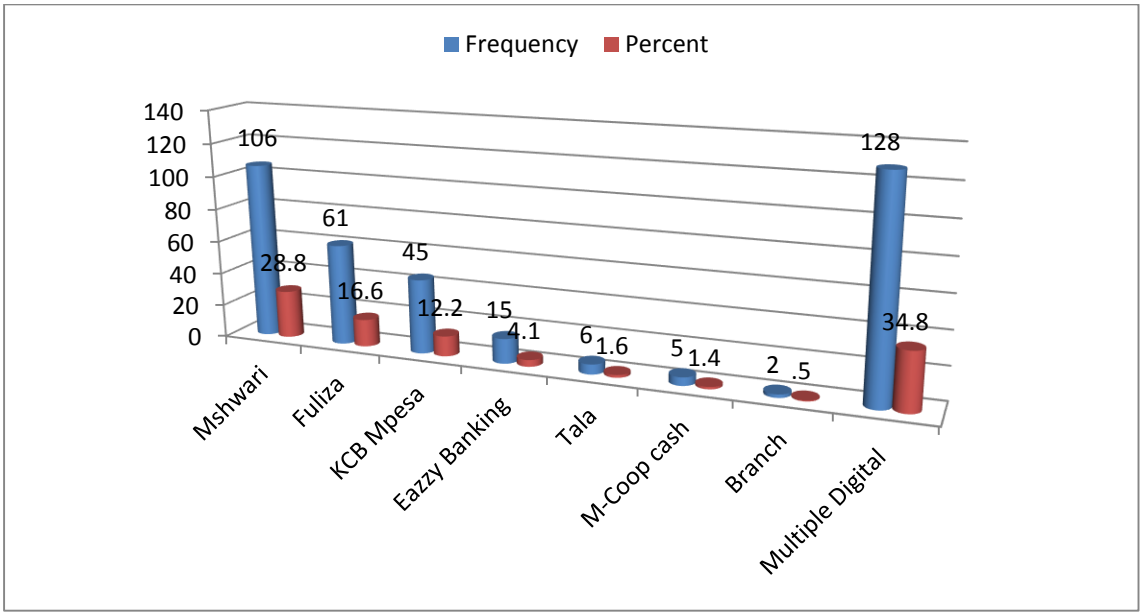
Source: Researcher (2020)

The results in table 4.6 shows the Micro and Small Enterprises in Nairobi City County utilizing the Digital Credit Borrowing are employees between 1 and 10 employees (n=190) are the greatest with 51.6%, the least employees 51 to 100 employees (n=7) has 1.9%. This is because the small number makes interaction strong and sharing of the techno-savvy ideas of digital credit borrowing. This is supported by Mararo (2018) study that showed smaller grouping in MSE's inspire each other better.

4.4 Design & Delivery of Digital Credit Loans

4.4.1 Primary Source of Digital Credit

Figure 4.1 Primary Source of Digital Credit

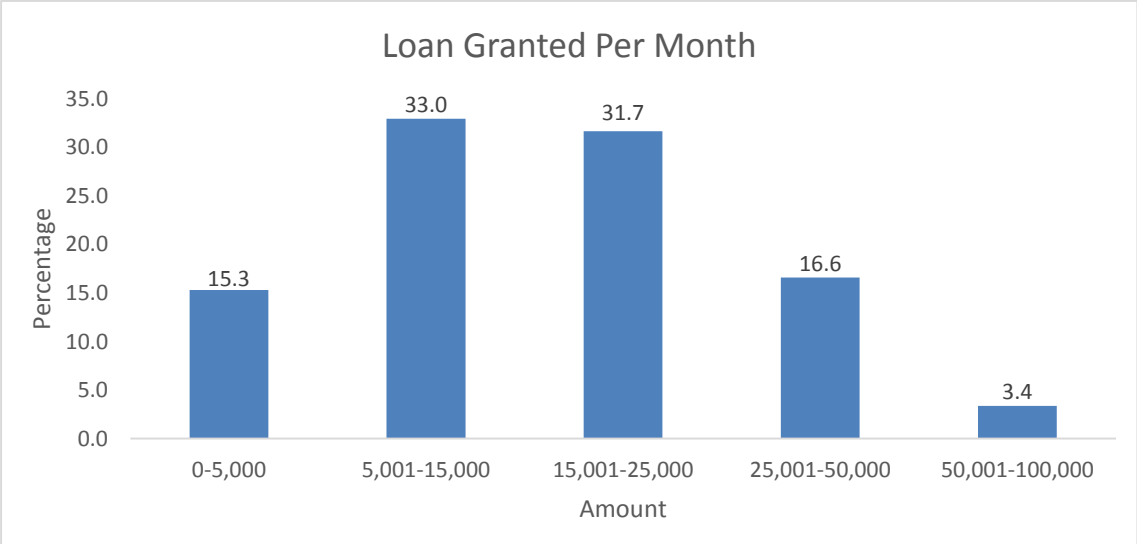


Source: Researcher (2020)

The results in Figure 4.1 shows that highest percentage of digital borrowers in Nairobi City County are multiple borrowing from various platforms with (n=128) 34.8% while Mshwari borrowers are 28.8%, Fuliza borrowers 16.6%, KCB Mpesa 12,2%, Eazzy banking 4.1%, to the least Branch with 0.5%. The multiple digital borrowers are highest because the digital loans are speedy, informal (no collateral required), short-term, secluded, automated and highly risky and there is no regulation. This is in line with FSD Kenya report (2018) which saw the mobile digital credit loan growth was due to exposure suggesting these trends continue expanding the credit frontier.

4.4.2 Loan granted per Month

Figure 4.2 Amount of Loan granted

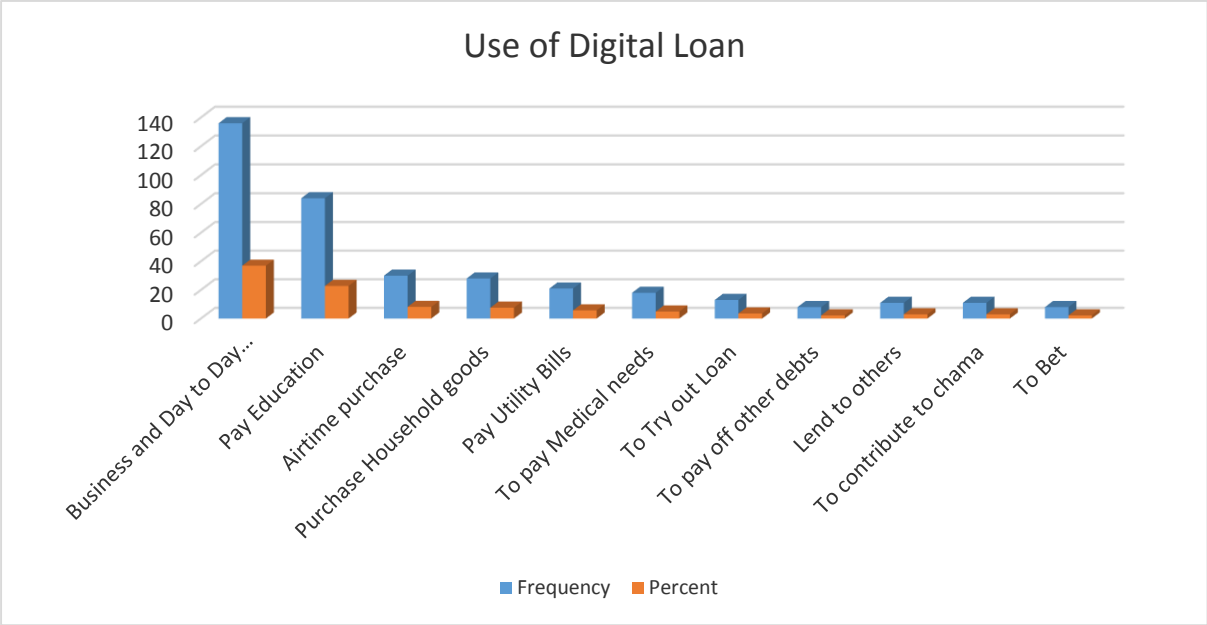


Source: Researcher (2020)

The results in the above Figure 4.2 reflect the highest loan granted for the Micro and small enterprises in Nairobi City County is between Ksh. 5,001- 15,000 with 33% followed by loans amounts of Ksh. 15,001-25,000 with 31.7%. The least amount of loan granted is Ksh. 50,001-100,000 with 3.1%. It was noted the highest loan granted was between Ksh. 5,000 to 25,000 because this is loan limits granted by most digital platforms, Example Zenka gives maximum of Ksh.30,000/-,Haraka Ksh. 5,000/=, Saidia Ksh. 25,000/=, Ksh. Mshwari 20,000/=Tala Ksh. 50,000/= and the repayment duration being 30 days and credit limits checked fairly lower amounts are granted. This collaborates with Rafael (2020) report on working of Loan apps and amounts granted by digital app.

4.4.3 Use of the digital Loan

Figure 4.3 Use of the Digital Loan Borrowed

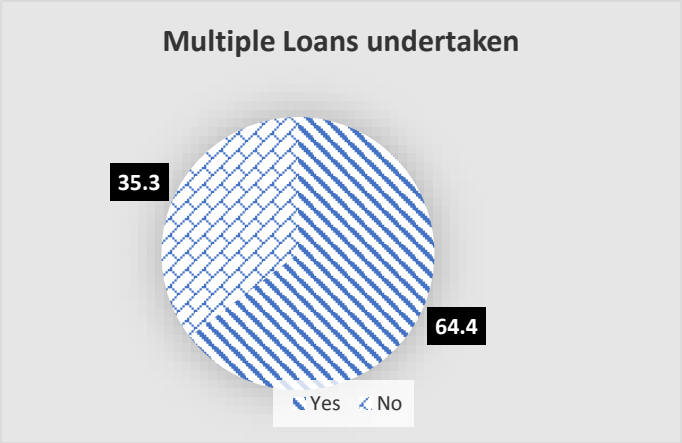


Source: Researcher (2020)

The results in the above Figure 4.3 reflect that the Digital Loan borrowed by the Micro and Small Enterprises in Nairobi County is used for Bussiness purposes (n=136) 37% Education purpose (n=84) 23%, Airtime purchase 8.2%,Purchase Household goods 7.6% least betting 2.2%. it was noted although the monies were borrowed for business use, 63% was used for other uses as shown above. Notwithstanding the fact that digital credit is easy to access and meets unanticipated needs, the short tenure, ease of access and the high cost of digital credit may intensify debt anguish, especially when credit is used for non-productive purposes. These findings replicate with Kenya Bankers working paper (2019), the high fees and the interest rate on digital credit can reduce household income over time, particularly if borrowers are taking loans for non-productive purposes and thus the returns on investments financed by digital loans may be insufficient to cover loan obligations when they fall due.

4.4.4 Multiple Loan utilization

Figure 4.4 Multiple Loan utilization

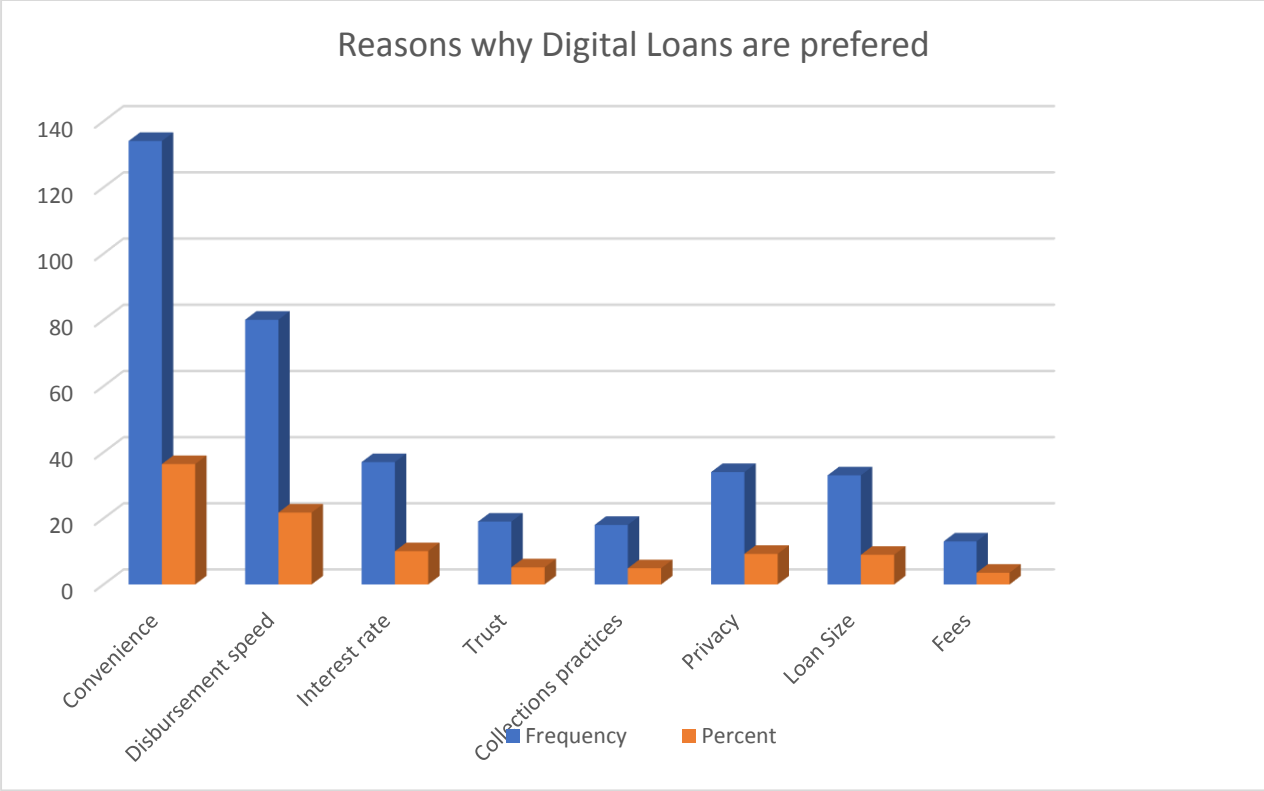


Source: Researcher (2020)

The results in the above Figure 4.4 shows that over 64% of the Micro and Small Enterprises, Digital Credit Borrowers in Nairobi City County, have utilized multiple digital lenders. This is evident because of the easy of assess credit compounded by limited financial literacy and behavioral biases whereby borrowers prefer current to future consumption. The tactics the digital lenders use to on-board customers and push repeat borrowing include aggressive sales, pushy messaging, strong-arm campaigns and deceptive marketing. This finding replicate Peter Wamalwa et al. (2018) studies that access of consumer credit can improve household income by enabling consumption smoothing and access to emergency funds, but this traps borrowers in debts and aggravating financial distress.

4.4.5 Preference of Digital Loans to others

Figure 4.5 Preferences of Digital Loans



Source: Researcher (2020)

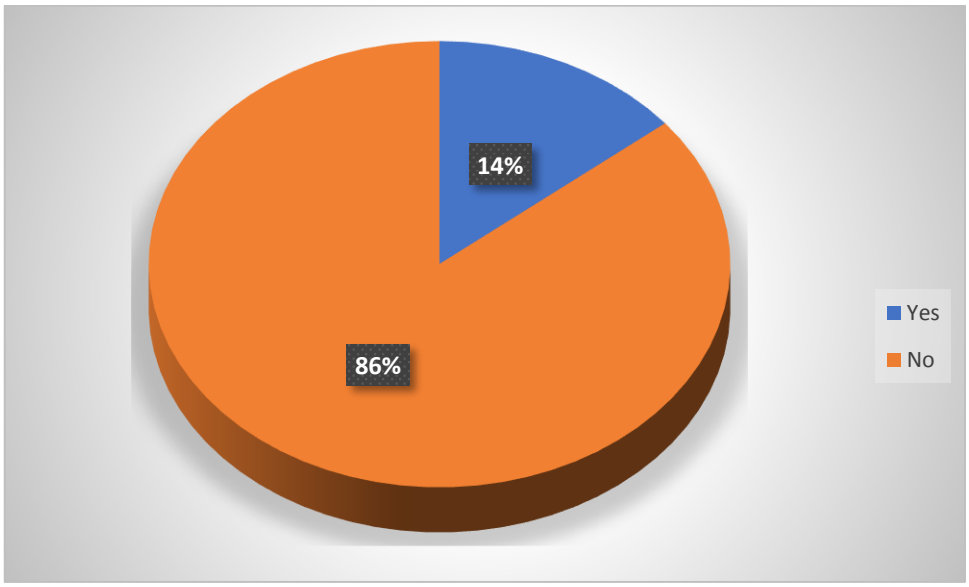
The results in the above Figure 4.5 shows that over 36% of the Micro and Small Enterprises Digital Credit Borrowers in Nairobi City County borrow because of Convenience, other reasons include Disbursement speed 21.7%, Interest rate 10.7%, Trust 5.2%, Collection practices 4.9% Privacy 9.2%, Loan size 9% and Fees 3.5%. The reason as to why the respondents borrow digital is the instant nature, Mshwari (Shwari-Kiwahili word for calm or peaceful), borrow offline; money is promptly credited to the phone immediately. This finding concurs with study done by Dauti Kahura (2018), that states the procedure of getting conventional loan is stringent and punitive, hence today technology particularly smartphones have transformed the financial sector, hence getting a loan becomes easier and faster.

4.5 Cost of borrowing the Digital Loan

This segment intends to enlighten the researcher on the whether the Digital borrowers are aware of the interest rates and other levies charged by the lenders. This also intends to bring out the satisfaction level on the lending terms of Digital Credit.

4.5.1 Interest Rate Awareness

Figure 4.6 Interest Rate Awareness



Source: Researcher (2020)

The results in the above Figure 4.6 disclose that 86% of the Micro and Small Entrepreneurs of the Nairobi City County are not aware of the interest rates charged by the Digital Credit lenders. While 14% are aware of the levies of the digital loans. This is in line with Peter Wamalwa et,al (2019) that saw digital credit consumers do not make informed decision due to non-disclosure of terms and conditions of credit and limited financial literacy therefore predisposing borrowers to over-indebtedness.

4.5.2 Satisfaction level on the lending terms of credit

Table 4.7: Satisfaction Levels on the lending terms of credit

Statement	N	Mean	Standard Deviation
Amount loan is not sufficient to meet my project needs	360	4.42	0.876
Interest charged on these loans is too high	360	4.3	0.999
Grace period given for repayment of loan is too short for me	360	4.16	1.194
I fear taking the loan because of the penalty in case of default	360	3.82	1.231

Source: Researcher (2020)

The outcomes of the Table 4.7 above reveal that the respondents on average agreed that the amount loaned is not sufficient to meet their project needs by a mean of 4.42. Those who agreed that the interest charged is too high had a mean of 4.3, Those that agreed that grace period given is too short had a mean of 4.16 and 3.82 mean was for those who agreed that they dreaded taking the loan because of the penalty in case of default. These findings indicate that the Loan amounts given are not sufficient hence the multiple digital platform borrowings. The findings are consistent with Otiato Guguya (2018) findings that majority of Kenyan borrowers are not scared of borrowing loans from mobile phones as they do not believe they have to pay back hence resulting to NPL.

4.6 Financial Literacy Levels

This section is rating the level of monetary knowledge of the borrowers of the Digital Lenders of the Micro and Small Enterprises in Nairobi City County.

4.6.1 Rate of Skills

Table 4.8: Financial Literacy levels

Statement	N	Mean	Standard Deviation
How do you rate your skills in Financial record keeping	360	3.88	1.195
How do you rate your skills in management of business	360	4.11	1.179
How do you rate your skills in Marketing	360	4.27	0.985

Source: Researcher (2020)

From the Table 4.8 above, it is evident that most of the respondents have good Marketing skills with mean of 4.27, Business Management skills mean of 4.11 and financial record keeping skills at mean of 3.88. This verdict is in line with study done by Kenya Bankers Association (2019), which shows that the educated are more likely to use digital credit than conventional credit, while the financially literate are less likely to use digital credit. The financially literate have the cognitive ability to make good credit consumption decisions.

4.6.2 Experience in Loan investments

Table 4.9: Experience in Loan investment

Statement	N	Mean	Standard Deviation
Am not experienced in using loan investment	360	3.52	1.17
I have never attended any class seminar on how to use a loan granted	360	3.02	1.511
I do not have budgeting skills to enable running of a business	360	2.96	1.363

Source: Researcher (2020)

From the Table 4.9 above, majority of respondents agreed that they do not have experience in using loan investment by mean of 3.52, Those who have never attended

any class on how to use a loan granted agreed to a mean of 3.02, and those who do not have budgeting skills had a mean of 2.96.

4.7 Credit Risk Management

His segment deals with the Digital Borrowers credentials so the digital lenders position itself as a financial advisor, determines credit worthiness and the client's profile is monitored so that opportunities to develop and expansion are revealed.

4.7.1 Questions asked before Digital Loan is disbursed

Table 4.10 Questions asked before disbursement of Loan

	Frequency	**Per cent**	**Cumulative Percent**
Yes	129.0	35	35
No	239.0	65	100
Totals	**368.0**	**100.0**	

Source: Researcher (2020)

The table above 4.10 shows that queries are not asked before most the credit digital loan is issued by 65%. This is same as study done by Eilin Francis (2017) that evaluation of loan applications is automated, since digital credit products leverage historical user data (often capturing mobile phone and mobile money use) to generate credit scores and not necessarily queries asked.

4.7.2 Queries answered truthfully

Table 4.11 Questions answered sincerely

	Frequency	**Percent**	**Cumulative Percent**
Yes	100.0	27	27
No	268.0	73	100
Totals	**368.0**	**100.0**	

Source: Researcher (2020)

From the Table 4.11 it is evident that the queries asked to the respondents about their financial position is not answered sincerely. No response of (n=268) is 73%, While

Yes response of (n=99) is 27%. This was presumed to be fear for disclosure due to unpredictability of outcome.

4.7.3 Digital Loan Defaults

From the Table 4.12 below, the Digital Loan respondents of the micro and small enterprises of Nairobi City County have confessed that (n=177), 48% have defaulted in Loan repayments while (n=191) have not defaulted in Loan repayment.

Table 4.12 Loan repayments Default

	Frequency	**Percent**	**Cumulative Percent**
Yes	177.0	48	48
No	191.0	52	100
Totals	**368.0**	**100.0**	

Source: Researcher (2020)

4.7.4 Late Digital Loan repayment

Table 4.13 Late Digital Loan repayments

	Frequency	**Percent**	**Cumulative Percent**
Yes	250.0	68	68
No	118.0	32	100
Totals	**368.0**	**100.0**	

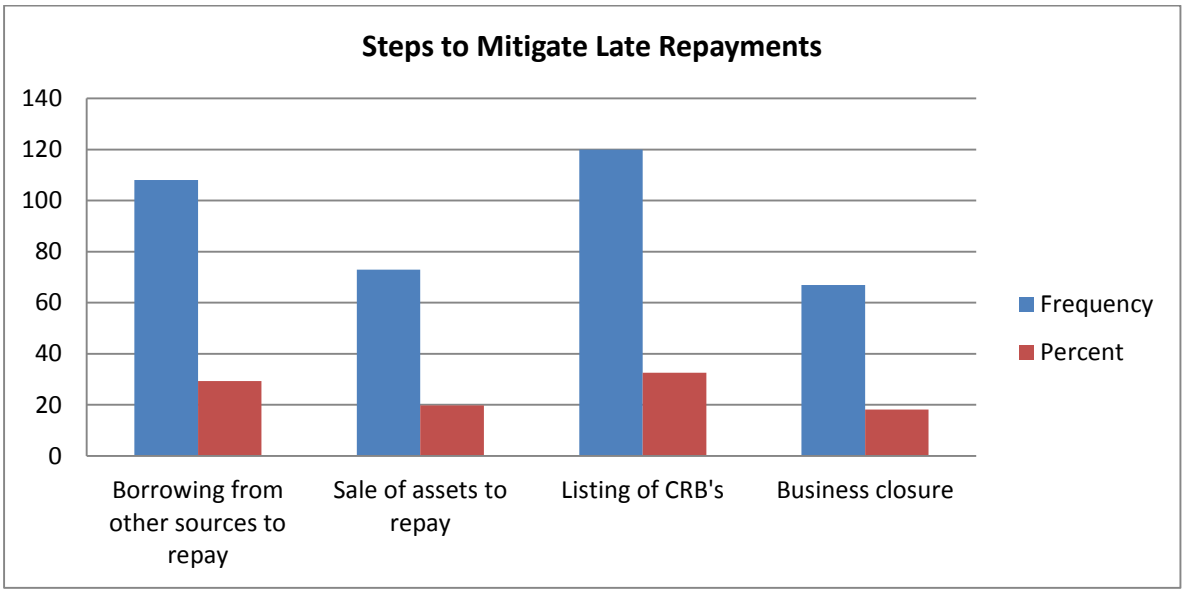
Source: Researcher (2020)

From Table 4.13 it is evident that the respondents have repaid their digital Loan late by 68% (n=250), While 32% (n=118) have not repaid their loans late. The finding of defaults and late payments are consistent with Victor (2019) report that states the swiftness and ease of access to credit through mobile applications has caused many borrowers to become heavily indebted. In Kenya, at least one out of every five borrowers struggles to repay their loan.

4.7.5 Steps taken to mitigate late payments of Defaults of Digital Loans

From Figure 4.14 it seems that the Digital Borrowers surveyed (n=108), 30% borrow from other sources to repay their loans, while (n=73) 20% undertake sale of assets to repay their loans, While (n=120), 33% are listed in CRB for defaults, while (n=67), 19% have ever closed shop due to lack of funds to repay the loan.

Figure 4.7 Steps to Mitigate Late Repayments



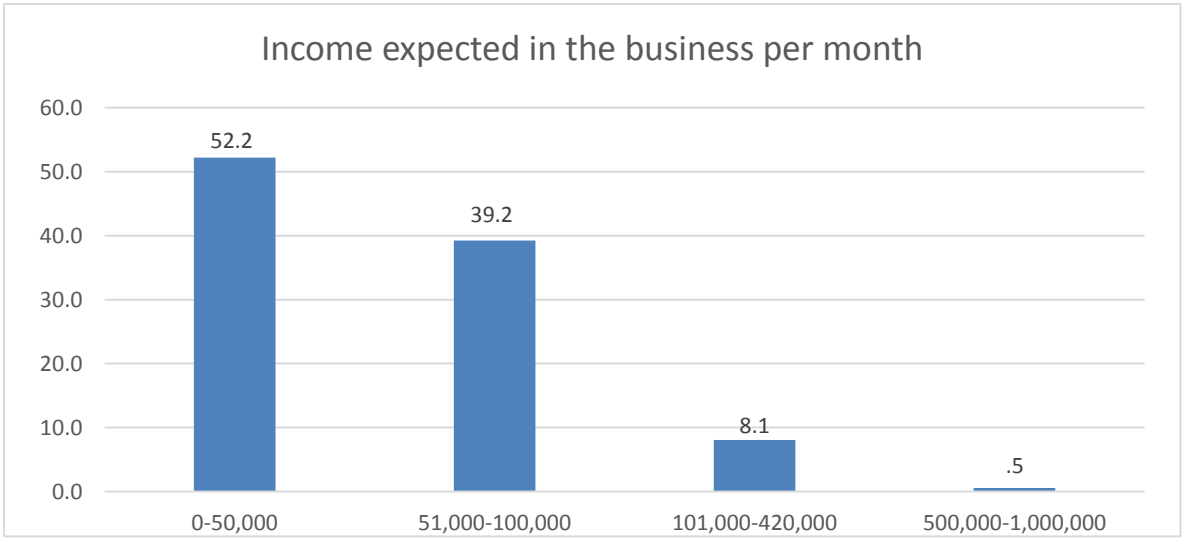
Source: Researcher (2020)

4.8 Income Levels of the Borrowers

This segment, the researcher pursued to establish the moderating variable between the Digital Credit Borrowing and the Financial Risk exposure that the Digital borrowers of Nairobi City County were exposed.

4.8.1 Actual Income Expected Monthly

Figure 4.8 Monthly Expected Income

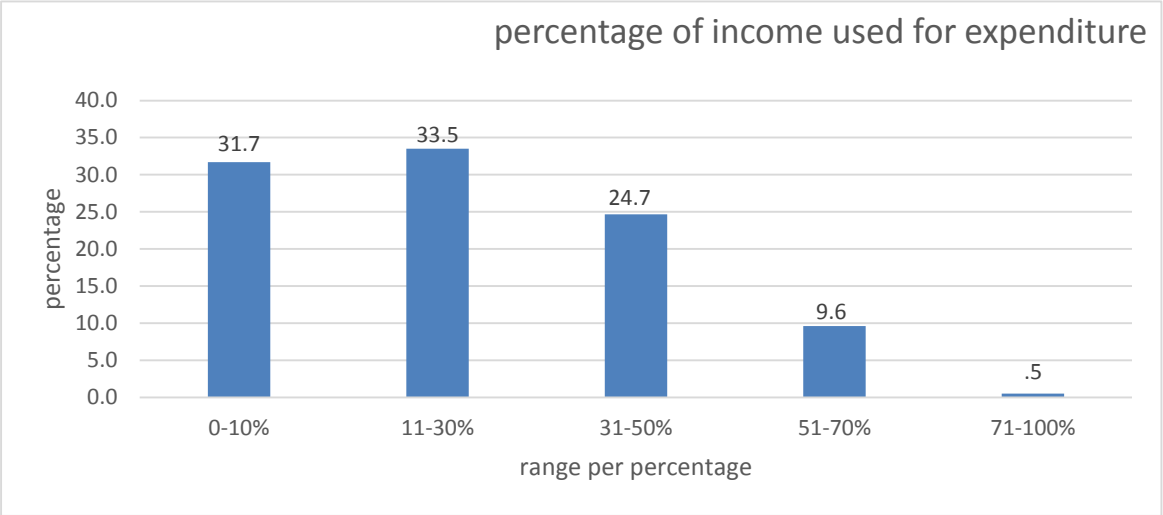


Source: Researcher (2020)

From Figure 4.8 it is evident that the income expected monthly for the Micro and Small Enterprises in Nairobi City County mostly ranges between Ksh. 0-50,000 with 52.2% while least income is between Ksh. 500,000 to 1,000,000 with 0.5%.

4.8.2 Income Percent utilized for Business Expenditure Monthly

Figure 4.9 Income utilized for Business Expenditure



Source: Researcher (2020)

From the figure 4.9, it is seen that 33.5% percent of the responded use their income for business expenditure.

4.9 Inferential Findings

The researcher used regression analysis to investigate the relationship between the financing through digital credit borrowings and the financial risk exposure to the micro and small enterprises in Nairobi City County, Kenya. The findings of the model summary, correlations analysis and regression analysis as analytical tools with application to SPSS is indicated below.

4.9.1 Regression Analysis for the General Model

The findings evaluated how the financial risk exposure of the Micro and Small Enterprises is influenced by the independent variables Design and Delivery of the Digital Credit Loans, Cost of Borrowing the Loans, Financial Literacy levels and Credit Risk Management in Nairobi City County.

$$\mathbf{Y = \beta_0 + \beta_1 Dd + \beta_2 Co + \beta_3 Fl + \beta_4 Cm + \varepsilon}$$

The R Square is the proportion of the variance in the dependent variable (Financial Risk exposure) which can be explained by the independent variables. The R Square in this study is 0.685, which shows that the 4 independent variables (Design and Delivery, Cost of borrowing, Financial Literacy and Credit Risk management) can explain 68.5% of the Financial Risk Exposure while other factors explain 31.5%.

Table 4.14 Model Summary

Model	R	R Square	Adjusted R Square	R Std Error of Estimate
	0.7583	0.685	0.52673	2.58154

Source: Researcher (2020)

To test whether the model was a good fit for the data the analysis of variance was tested.

Table 4.15 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F test	Sigf.
	Regression	12.128	11	1.102545	68.5	0.000
	Residual	71.156	357	0.199317		
	Totals	83.284	368			

Source: Researcher (2020)

The results on the ANOVA test showed an F calculated of (68.5) is more than P (0.005) which shows model is fit for predicting the influences of independent variable on the dependent variable.

Table 4.16 Coefficients of the study model

Model		Unstandardized Coefficient Beta	Std Error	Standardized Coefficient Beta	T	Sigf.
	Constant	0.698	1.132		4.009	0.000
	Design & Delivery	0.635	0.235	0.365	2.365	0.043
	Cost of Borrowing	0.171	0.025	0.251	6.462	0.000
	Financial Literacy Levels	0.206	0.013	0.674	17.952	0.001
	Credit Risk Management	0.213	0.030	0.405	11.341	0.013

Source: Researcher (2020)

The results indicate that Dd have a significance level of 0.043<0.05, Co have a significance level of 0.000<0.05, Fl significance level of 0.001<0.05 and CRm significance level of 0.013<0.05. This means that the study variables were statistically noteworthy in their impact of the dependant variable since their p values were not as much of than 0.05. The equation thereof was:

Y = 0.698 + 0.213 Dd + 0.171Co + 0.206 Fl +0.635 Cm

This means that holding all the variables constant the financial risk exposure would be 0.698. Whereby Y = the dependent variable (Financial risk exposure)

Dd= Design & Delivery of Digital Credit Loans

Co = Cost of borrowing the loans

Fl = Financial Literacy Levels

Cm= Credit Risk Management

To test the effect of the moderating variable IL (Income Level of the Borrowers) the research model is improved as follows:

$$\mathbf{Y = \beta_0 + \beta_1 Dd + \beta_2 Co + \beta_3 Fl + \beta_4 Cm + \beta_5 IL + \varepsilon}$$

Table 4.17 Coefficients of the study model with moderating variable

Model		Unstandardized Coefficient Beta	Std Error	Standardized Coefficient Beta	T	Sigf.
	Constant	1.562	0.258		5.365	0.000
	Design & Delivery	0.615	0.082	0.435	4.896	0.431
	Cost of Borrowing	0.223	0.078	0.169	3.865	0.061
	Financial Literacy Levels	0.563	0.120	0.235	3.512	0.201
	Credit Risk Management	0.635	0.235	0.365	8.365	0.103
	Income Levels of Borrowers	0.060	0.260	0.142	2.596	0.584

Source: Researcher (2020)

The Table 4.17 indicates that after introduction of moderating variable (Income levels of Borrowers), the independent variable had an insignificant effect towards the dependant variable of the study. This is because their p values were all greater than 0.05. Dd have a significance level of 0.431>0.05, Co have a significance level of 0.431>0.05, Fl significance level of 0.201>0.05 and CRm significance level of 0.103>0.05. IL significance level was 0.584>0.05. This resulted in the moderating variable being dismissed in the study.

CHAPTER FIVE

SUMMARY, CONCLUSION & RECOMMENDATIONS

5.1 Introduction

This chapter looks at the summary of the research findings on the Digital Credit Borrowing on the Financial Risk Exposure on the Micro and Small Enterprises in Nairobi City County, Kenya. The conclusions, recommendations and Suggestions are derived therefrom.

5.2 Summary

The specific objective of the study was to determine the relationship between the design and delivery of digital credit loan, the cost of borrowing of the digital loans, the financial literacy levels of the borrowers, the credit risk management and the income levels of the borrowers and the financial risk exposure of the MSE's of Nairobi City County, Kenya. Generally, the findings discovered that all the four variables considered in the study had a positive effect on the Financial risk exposure of the MSE's. The moderating variable, which was Income Level, had an insignificant effect towards the dependant variable.

5.2.1 Design and Delivery of Digital Credit Loans and Financial Risk Exposure of MSE's in Nairobi City County.

The study found out that most respondent's primary source of Digital credit was the multiple digital borrowing, accessed through various platforms like Mshwari, Fuliza, KCB Mpesa, Eazzy banking and Tala during the same period of time. The Loans granted were between Ksh. 5,000 to 25,000 per month, which were used for business use and the loans were preferred because of convenience in obtaining them and swift speed in disbursing them.

5.2.2 Cost of borrowing the Digital Loans and Financial Risk Exposure of MSE's in Nairobi City County.

The study found out that most MSE's respondents are not aware of the interest rates and other levies charged on the digital loans they undertake, and that the loan amounts

were not sufficient to meet their business needs, and that the grace period given for repayment of loans was too short.

5.2.3 Financial Literacy Levels and Financial Risk Exposure of MSE's in Nairobi City County.

The study found out that the respondents had good marketing skills, management of business skills and lower skills in financial management and recording skills. It was found out that most respondents are not experienced in loan investment, nor have they attended any class/seminar on use of neither loan nor do they have budgeting skills.

5.2.4 Credit Risk Management and Financial Risk Exposure of MSE's in Nairobi City County.

The study found out that in most digital platforms, questions are not asked to the borrowers before digital credit loans are disbursed and if they are asked that they are not answered sincerely. Almost half of the digital borrower's default in repayment and a great number of them pay their loans late. Steps taken to mitigate the late payments and defaults are listing at CRB's and borrowing from other sources to repay the loans resulting to debt cycle and crises.

5.2.5 Income Levels of Borrowers and Financial Risk Exposure of MSE's in Nairobi City County.

The study revealed that the actual income expected during the month by the MSE'S is mostly utilized for business expenditure, hence little or no monies was left out for repayment of the digital loans. Hence, the moderating variable income levels of the borrowers were seen to have insignificant effect on the dependent variable, which was the financial risk exposure.

5.3 Conclusions

The study concluded that for most MSE's respondents in Nairobi City County are active in digital credit borrowing as an important tool to manage business needs and pay utility and medical bills (non-productive use) because they appreciated the convenience and disbursement speed. Despite the high interest rates and transactional costs levied, the borrowers who seemed not to be aware, most of them undertook multiple borrowing. This could reflect the low loan limits (that fail to satisfy needs), the short tenures that

increase pressure on repayment hence they required a new loan to repay the previous one, this led to debt snare. Due to the nature of the digital loans, most defaults and late repayments resulted to negative listing at CRB's. The penalty of defaults and late payments is hefty.

The respondents had low understanding of the interest rates charged, terms & conditions were never disclosed plainly, and they were not aware how their personal data was shared.

The study also established that the interest rates offered by a variety of digital lenders varied extensively, as the government of Kenya did not equally regulate them. A small group of Fintech has formed DLAK whose members abide by responsible lending guidelines. Allegiance to a single provider appears limited as the respondents shift between lenders, leading to multiple borrowing. Rapid loan approvals and ease of acquiring personal data by the digital lenders has resulted to identity fraud. Privacy protection and sharing client data guidelines is lacking.

5.4 Recommendations

Based on the study findings the study recommends to curb over-indebtedness, multiple borrowing and risk of negative listing at CRB's which affect future credit rating, transparency and consumer protection should be upheld. The borrowers should be educated on the digital products so that they make informed decisions and the digital lenders should be regulated to avoid overcharging on the interest rates and transaction costs.

5.4.1 Recommendation for Practice

The study recommends gaps in user experience be filled by making interfaces visually appealing by using colors and icons to communicate meaning and by removing heavy text that is not understood by borrowers. Registration process should be streamlined and simplified while complying with KYC requirements.

The study recommends that identity fraud can be curbed by combining CRB's check with advanced risk analytics (ID Document capture and Biometric verification) to run real-time security. Machine learning algorithms be used to identify potential cases of fraud.

5.4.2 Recommendation for Policy

The study recommends risk based pricing policy, which will translate to lower prices for customers, and products should be designed with interest rate range, where actual interest rates are based on customer risk profile and repayment behaviour.

To curb high defaults and late repayments a threshold value for NPL's should be developed as a percentage of total portfolio. Providers that regularly surpass this be penalised by a fine or ultimately losing their license. Regulation of the Digital lenders is recommended.

5.4.3 Recommendation for Academia

The study recommends the borrowers should be educated on the consequences of default through digital credit sensitization campaigns. Negative listing for very small loans can be avoided by being more knowledge empowered on the impact. Guidelines should be enforced to inform customers at least 30 days before the status update of negative listing.

5.5 Suggestions for further Research

The current study established that the Income Levels of the MSE's had no moderating effect on the interactions among the variables. There is room to carry out further research as to the regulatory framework to the Digital credit borrowing to avoid risky market practices and to avoid exploitation of the consumers as relates to hefty interest rates charged.

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APPENDICES

APPENDIX I: Letter of Introduction

Dear Respondent,

Ref: Appeal for Study Information

Greetings, I am an MBA trainee- Finance option from Kenyatta University. On track with the prerequisites of the establishment accolade for the gradation, I am conducting a research on ***Digital Credit Borrowing on the financial risk exposure of Miro and Small Enterprises in Nairobi County, Kenya***. This study is only for scholarly reasons and was not be utilized for any further uses. The evidence offered in this study was be retained in trust and unspecified.

Your assistance in this respect is extremely valued. Be blessed.

Yours Sincerely,

Elizabeth Ngulale
Student Reg.**D53/OL/CTY/32405/2017**

APPENDIX II: QUESTIONNAIRE

DIGITAL CREDIT BORROWING ON THE FINANCIAL RISK EXPOSURE ON THE MICRO AND SMALL ENTERPRISES IN NAIROBI CITY COUNTY, KENYA

Please fill or tick the appropriate answer truthfully.

Part A: General Information

What is the name of the Micro and Small Enterprise……

1) What is your gender
   Male ☐ Female ☐
2) What is your age bracket
   1) 18-25 years ☐
   2) 26-33 years ☐
   3) 34-41 years ☐
   4) 42-49 years ☐

   Others specify…….
3) Educational Qualifications
   1) Certificate level ☐
   2) Diploma/ Professional course ☐
   3) Bachelor's Degree ☐
   4) University Level – Postgraduate ☐
   5) Masters / PHD Level ☐
4) Enterprise category undertaken
   1) Jua-kali ☐
   2) General Trade, Wholesale, Retail, stores ☐
   3) Agriculture, Forestry, Natural resource ☐
   4) Accommodation & Catering (Hospitality) ☐
   5) Professional & Technical services ☐
   6) Private Education, Health & Entertainment ☐
   7) Transport, storage & communication ☐
   8) Industrial plans, Factories & Workshops ☐

   Other specify……..

5) No of Employees
   1) Between 1 and 10 ☐
   2) Between 11 and 20 ☐
   3) Between 21 and 50 ☐
   4) Between 51 and 100 ☐

   Other specify……..

Part B: Design & Delivery of Digital Credit Loans

6) What is your primary source of digital credit

Mshwari ☐ KCB Mpesa ☐

Branch ☐ Eazzy banking ☐

Tala ☐ M-Coop Cash ☐

Fuliza ☐ Timiza ☐

Other specify ……

7) How much loan have you been granted per month

1) 0 – 5,000 ☐
2) 5,001 – 15,000 ☐
3) 15,001 – 25,000 ☐
4) 25,001 – 50,000 ☐
5) 50,001 – 100,000 ☐

Others specify……..

8) What use is the digital loan utilized for?

1) To use for business ☐
2) To meet day to day ordinary needs ☐
3) To pay for education ☐
4) To purchase airtime ☐
5) To purchase personal or household goods ☐
6) To pay utility bills ☐
7) To pay for medical needs including emergencies ☐
8) To try out the loan ☐
9) To pay off other debts ☐
10) To on lend ☐
11) To contribute to my Chama ☐
12) To bet ☐

Other specify……

9) Are you able to undertake multiple loans in same month

Yes ☐ No ☐

Others specify……...

10) What are the reasons Digital loan is preferred to loans from other providers?

Convenience ☐ Collections practices ☐

Disbursement speed □ Privacy ☐

Interest rate □ Loan size ☐

Trust ☐ Fees ☐

Others specify…….

Part C: Cost of borrowing the Digital Loan

11) Are you aware of the interest rate & other charges levied on the digital credit loans borrowed?

Yes ☐ No ☐

Others specify…….

12) What is your satisfaction level on the lending terms of credit offered by Digital credit loans?

	Disagree	Strongly Agree	Agree	Neutral	Disagree Strongly
Amount loaned is not sufficient to meet my project needs					
Interest charged on these loans is too high					
Grace period given for repayment of loan is too short for me					
I fear taking the loan because of the penalty in case of default					

Other specify……

Part D: Financial Literacy levels

13) In each of the boxes following indicate your answer in the boxes provided

	Very Poor	Poor	Fair	Good	Very Good
How do you rate your skills in Financial record keeping					
How do you rate your skills in Management of business					
How do you rate your skills in Marketing					

Other specify…….

Please mark the number that best reflects your level of agreement in the following statements.

14) 1=Strongly disagree, 2=Disagree, 3= Neutral, 4=Agree and 5= Strongly agree.

	1	2	3	4	5
Am not experienced in using loan investment					
I have never attended any class, seminar on how to use a loan granted					
I get assistance from financial experts on how to invest					
I do not have budgeting skills to enable running of a business					

Part E: Credit Risk Management

Please mark the number that best reflects your level of agreement in the following Statements.

15) Are there questions asked before the digital loan is disbursed to you

Yes ☐ No. ☐

Do you answer the questions truthfully? Yes ☐ No ☐

16) Have you ever defaulted in loan repayment?

Yes ☐ No. ☐

Other specify

17) Have you ever paid a digital loan late?

Yes ☐ No. ☐

Other specify…….

18) What steps are taken to mitigate late payments or defaults of these Digital loans?

1) Borrowing from other sources to repay☐
2) Sale of assets to repay☐
3) Listing of CRB's☐
4) Business closure☐

Others specify……..

Part F: Income Levels of the borrowers

19) What is the actual income expected in the business per month?

1) 0-50,000pm ☐
2) 51,000 – 100,000pm ☐
3) 101,000 – 420,000pm ☐
4) 500,000 – 1,000,000pm ☐

Other specify……

20) What %of the income is used for business expenditure per month?

1) 0 – 10% ☐
2) 11% - 30% ☐

3) 31-50% ☐
4) 51% - 70% ☐
5) 71% - 100% ☐

Thanks, you taking time to fill this questionnaire

APPENDIX III: APPROVAL OF RESEARCH PROJECT PROPOSAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 4th February, 2020

TO: Ngulale Majala Elizabeth
C/o Accounting and Finance Dept.

REF: D53/OL/CTY/32405/2017

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 29th January, 2020 approved your Research Project Proposal for the M.BA Degree Entitled, **"Digital credit borrowing on the financial risk exposure of micro and small enterprises in Nairobi City County, Kenya".**

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Progress Report Forms per semester. The Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

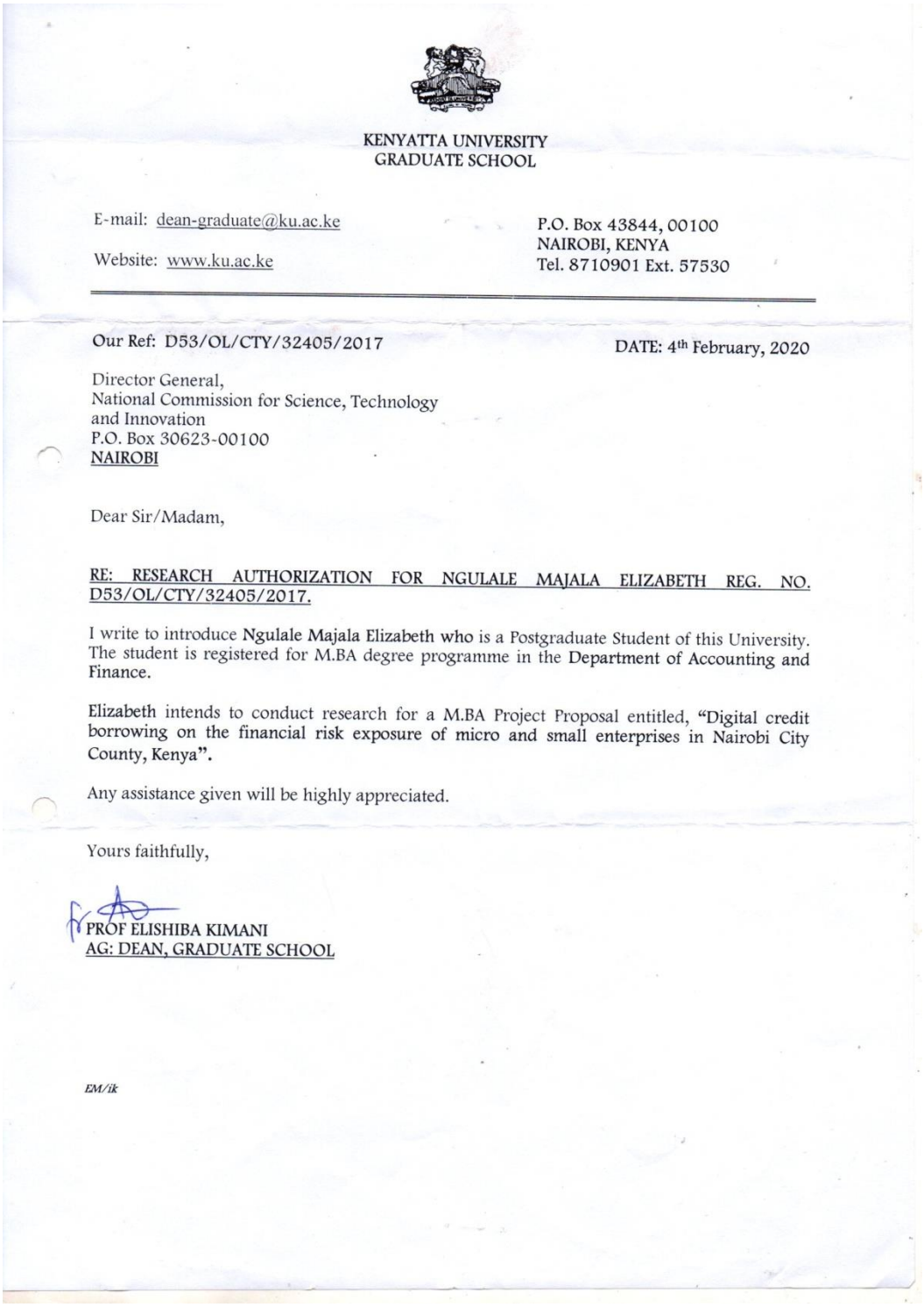
ANNBELL MWANIKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Accounting & Finance Department
Supervisors:

1. Dr. Ambrose Jagongo
   C/o Department of Accounting and Finance
   Kenyatta University

AM/ik

APPENDIX IV: RESEARCH AUTHORIZATION LETTER



KENYATTA UNIVERSITY
GRADUATE SCHOOL

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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/OL/CTY/32405/2017

DATE: 4th February, 2020

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR NGULALE MAJALA ELIZABETH REG. NO. D53/OL/CTY/32405/2017.

I write to introduce Ngulale Majala Elizabeth who is a Postgraduate Student of this University. The student is registered for M.BA degree programme in the Department of Accounting and Finance.

Elizabeth intends to conduct research for a M.BA Project Proposal entitled, "Digital credit borrowing on the financial risk exposure of micro and small enterprises in Nairobi City County, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

PROF ELISHIBA KIMANI
AG: DEAN, GRADUATE SCHOOL

EM/ik