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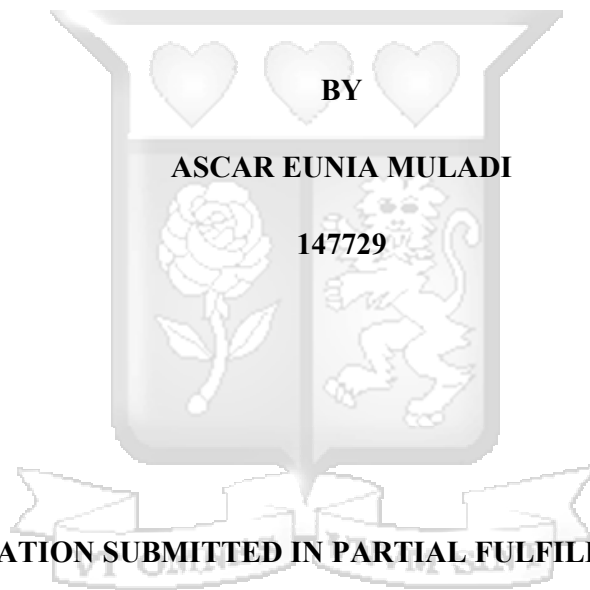
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**MICRO, SMALL, AND MEDIUM ENTERPRISES AND PUBLIC
PROCUREMENT PARTICIPATION: THE NEXUS OF SUPPLY CHAIN
FINANCE, DIGITALIZATION AND BARRIERS IN NAIROBI
COUNTY.**



**DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT OF THE AWARD OF MASTER OF COMMERCE**

MAY, 2023

DECLARATION

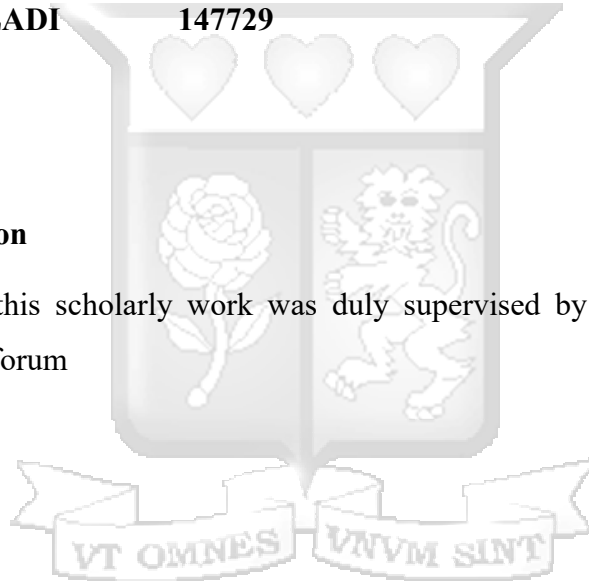
Student Declaration

I declare that this research report is my original work and has not been presented in any other forum.

Signature: A.E

Date 5/6/23

ASCAR EUNIA MULADI 147729




Supervisors Declaration

I hereby declare that this scholarly work was duly supervised by me and it has not been presented in any other forum

Signature:

Date.

Prof. Jonathan Annan

Signature:  Date....10/06/2023.....

DEDICATION

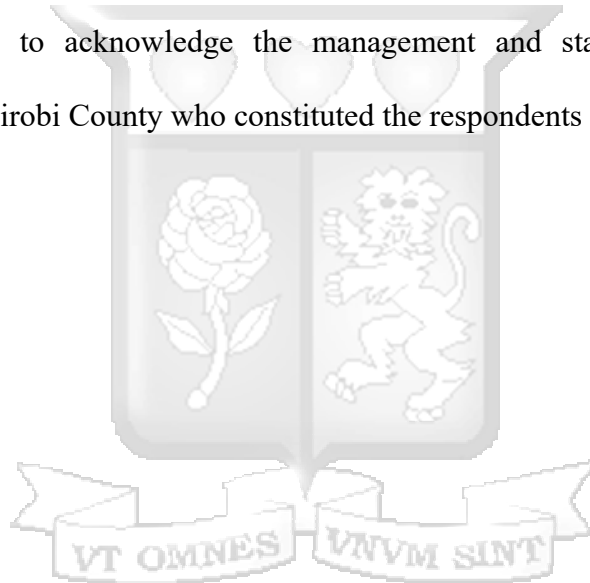
I dedicate this Thesis to my mother who has been the backbone of this academic endeavor. Her encouragement, motivation, and support have been massive to come this far.



ACKNOWLEDGEMENT

I am grateful to Almighty God for giving me the strength and wisdom to undertake this work. Secondly, I thank Professor Jonathan Annan, my supervisor who did more than i imagined in making this work successful. I also acknowledge the several writers whose work I referenced and the support of all those who contributed to the success of this work especially Dr. Samuel Bruce Rockson and Dr. Richard Bruce Lamptey, our guest lecturers who prepared us for Research Methodology.

Thirdly, I would like to acknowledge the management and staff of selected MSMEs, owners/managers in Nairobi County who constituted the respondents of the study.



ABSTRACT

Public procurement is practiced everywhere, among both developed and developing economies. The arguments for the inclusion of relatively smaller firms in public procurement suffice since they offer a significant contribution to the economy and offer employment to a wide number of people in every nation. Though the contribution of micro, small, and medium enterprises (MSMEs) in the development of economies has been widely discussed in contemporary studies, their participation in public procurement contracts still remains an issue. In Kenya, despite the institutional reforms and policies carried out in public procurement, MSMEs still struggle to participate in public procurement contracts. With this backdrop, the current study examines how supply chain finance, digitalization, and barriers impact MSMEs' participation in public procurement markets. Data for the study were collected from prequalified suppliers registered under Public Procurement and Regulatory Authority (PPRA) in Nairobi County. A sample size of 100 consisting of prequalified government suppliers was selected. A multistage sampling beginning with systematic and ending with a simple random sampling approach was adopted and an 84% response rate was achieved. The survey approach was adopted by administering questionnaires to the respondents. A multiple regression model was employed to estimate the structural model of the study. Statistical software, SPSS Version 25, and Hayes Process MACRO were used to analyze the data quantitatively. The regression findings revealed that there is a positive and significant effect between Supply Chain Finance and MSME Public Procurement Participation. It was also revealed that Digitalization has a positive and significant effect on MSME Public Procurement Participation. Again, barriers to MSME public procurement participation have a significant but negative effect on MSME Public Procurement Participation. It is therefore recommended that owners and managers of MSMEs invest in digital tools such as e-procurement technology, software, procurement management systems, etc. to make them competitive enough to participate in public procurement calls. Also, MSMEs should utilize the available supply chain finance solutions to be capable to expand and compete with larger firms in public procurement activities. The study was limited to using three variables as independent variables and recommended that future studies may investigate a model where digitalization will be the independent variable, supply chain finance, the mediator, and barriers, the moderator.

Keywords: Public Procurement, Digitalization, Supply Chain Finance, Micro, Small and Medium Enterprises (MSMEs).



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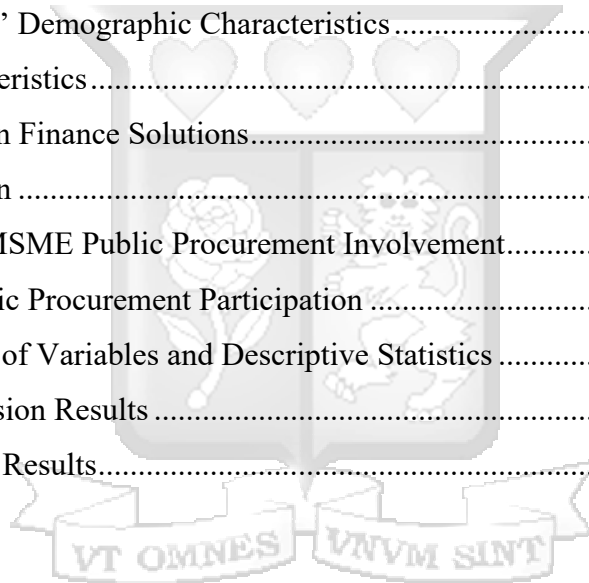
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LIST OF ABBREVIATIONS AND ACRONYMS

MSME: Micro, Small, and Medium Enterprise

SCF: Supply Chain Finance

PP: Public procurement



DEFINITIONS OF KEY TERMS

Digitalization (E-Procurement)

The process of planning, controlling, and managing all the financial transaction activities in the supply chain to improve the working capital of both buyer and supplier in any supply chain.

Micro and Small Enterprises (MSMEs)

Refer to SMEs, and under the Micro and Small Enterprise Act of 2012, micro-enterprises have a maximum annual turnover of KES 500,000 and employ less than 10 people (Kenya Agribusiness and Agroindustry Alliance, 2016).

Supply Chain Finance

Supply chain finance is the use of financial tools, procedures, and technologies to manage the working capital liquidity tied up in supply chain activities for cooperating company partners as efficiently as possible. There are options to automate the start of SCF interventions thanks to the development of sophisticated technologies to track and regulate events in the physical supply chain.



CHAPTER ONE: INTRODUCTION

In most countries, micro, small, and medium enterprises (MSMEs) constitute the backbone of the economy and empirical studies indicate that they are responsible for the most considerable portion of employment growth. Because of the significant role they play in the economy, there have been policies encouraging their participation in public procurement. This study examines how supply chain finance, digital capabilities, and barriers impact MSMEs' participation in public procurement markets in Nairobi. This chapter presents the background of the study, research objectives, research questions, scope of the study, and significance of the study.

1.1 Background of the Study

Governments all over the world are charged with the responsibility of ensuring the social and economic development of citizens. Procurement is generally the process of acquiring goods, works, and services and it is a key part of the government's service delivery system (Kohler & Dimancesco, 2020). To deliver the expected services to the citizens, public sector agencies need to acquire goods, services and works from other governmental agencies and private organizations (UNODC, 2013). Procurement of goods by public sector agencies is referred to as public procurement, and it is defined as “the acquisition of goods, services, and works with public funds” (Doig & Theobald, 2013).

Due to the large scale of government operations, public sector procurement involves large sums and forms a significant percentage of government spending in all (Adjei-Bamfo et al., 2019; Doig & Theobald, 2013). Public procurement (PP) is practiced everywhere, among both developed and developing economies. PP generally represents a significant share of aggregate GDP. It has been documented that about 20% of the gross domestic product (GDP) of most developed countries is spent on public procurement while most developing nations spend up to 50% of their GDP on public procurement (Awuor & Paul, 2021; Williams-Elegbe, 2018). In the European Union, (EU), PP represents 13.3% percent of the total EU GDP, with public authorities spending some € 2 trillion per year during the 2015-2017 period on the purchases of services, works, and supplies (Rhode, 2019). The government of Kenya spends approximately 70% of its budget on procurement (Maraguri, 2013).

Beyond assisting governmental agencies to acquire products and services to run government operations, public procurement is increasingly being used to achieve other strategic objectives. These include promoting social justice, environmental sustainability, and reducing income inequalities (Adjei-Bamfo et al., 2019). Contemporary public procurement is used as a tool for promoting the quality of public service, good governance, and sustainable development (Osei-Kojo & Andrews, 2016). Through national sustainable procurement policies, public procurement is deliberately used to encourage environmentally sustainable practices among suppliers and to deliberately patronize the business of marginalized groups in society.

Due to these huge investments in public procurement, it is most vulnerable to corruption (Rustiarini et al., 2019), and the lack of effective monitoring and controlling mechanism, lack of transparency and accountability, and weak bureaucratic systems make procurement processes a higher risk of corruption (Akokuwebe & Adekanbi, 2017; Basheka et al., 2015; Bautista-Beauchesne & Garzon, 2019; Dávid-Barrett & Fazekas, 2020; Gaitonde et al., 2016; Inuwa & Ononiwu, 2020; Kohler & Dimancesco, 2020; Neupane, Soar, Vaidya, et al., 2014; Neupane et al., 2012; Neupane, Soar, & Vaidya, 2014; Owusu et al., 2019; Rustiarini et al., 2019).

Consequently, there have been calls from practitioners and scholars across the globe to progress from traditional procurement systems to more sanitized procurement systems through various reforms and policies to transform procurement towards ensuring value for money and protecting taxpayers' money (Akokuwebe & Adekanbi, 2017; Dávid-Barrett & Fazekas, 2020; Inuwa & Ononiwu, 2020; Jachi & Jachi, 2019; Kohler & Dimancesco, 2020; Mackey & Cuomo, 2020; Noerlina et al., 2018; Onwujekwe et al., 2018; Oyugi & Getuno, 2019; Sharma et al., 2019). Despite the significant role MSMEs play in the development of economies, the total contract value awarded to MSMEs falls short of their share of economic turnover (Loader, 2018; Thomassen et al., 2016).

1.1.1 Public Procurement and Rationale of Micro Small and Medium Enterprises Participation

In Kenya, public procurement has undergone regulatory transformations from a largely unregulated system in the 1960s. In the 1970s, 80s, and 90s, procurement by the

government and other public entities was regulated by treasury circulars. This led to a system of statutory regulation marked by the coming into force of the Public Procurement Disposal Act in 2005, after which the Procurement Regulations were published in 2006 (Omariba, 2020). The Act established new parameters and defined new boundaries that would henceforth guide all public procurement processes. In this manner, the constitution of Kenya, 2010: Article 227 (1) enacted the principles of fairness, equitability, transparency, competitiveness, and cost-effectiveness as the pillars of public procurement. In addition, and by relevance to this study is the aspect of the constitution of Kenya, 2010: Article 227 (2) which makes provision for an affirmative action policy that would give preference and protection to persons and groups of persons and entities that had been the subject of unfair competition and historical disadvantage or discrimination, which this study makes a case for micro and small enterprises.

The arguments for the inclusion of these relatively minor firms in public procurement are not just for nothing but they offer a significant contribution to the economy and offer employment to many people in every economy. They are known as the engines of growth and are vital to most economies. Studies have shown that micro businesses and MSMEs account for 95 percent of firms in most countries and in Africa, SMEs create 80 percent of employment (Kenya Agribusiness and Agrofoindustry Alliance, 2016).

In Kenya, 80 percent of jobs created in 2014 were dominated by these enterprises (Kenya Agribusiness and Agrofoindustry Alliance, 2016). Thus, the contribution of these smaller firms cannot be overlooked. Taking cognizance of their contribution, the European Union has introduced policies in public procurement, one of which is the improvement of small and medium-sized enterprises (SMEs) participation in public procurement thereby increasing competition, which in turn increases value for money and enhancing job creation, economic growth, and innovation (Saastamoinen et al., 2018). Thus, the participation of relatively more minor firms, micro firms, or medium firms in public procurement has been marked as an important avenue to achieving public procurement success.

Additionally, these firms' categories form the largest proportion of firms in every economy (Hoekman & Taş, 2022; Namagembe et al., 2021) as such, their participation in public procurement has attained increased attention from scholars for over a decade now (Namagembe et al., 2021). Therefore, to ensure the growth of these sectors, it is important

to consider their inclusion in public procurement contracts. With this, most countries now have legislation that regulates the process through which public contracts for goods, services, and works are allocated (Hoekman & Taş, 2022). However, considering their size and their financial strength, competing with larger firms always becomes a challenge for them, which impedes most of them from tendering (Saastamoinen et al., 2018).

1.1.2 Micro Small and Medium Enterprises (MSMEs) in Kenya

An enterprise can be considered as either micro or small depending on the number of employees in the business, the nature of the industry, ownership structure, and revenue base and this definition varies among countries. In Kenya, the term micro and small enterprises or micro, small, and medium enterprises (MSMEs), is used to refer to SMEs, and under the Micro and Small Enterprise Act of 2012, micro-enterprises have a maximum annual turnover of KES 500,000 and employ less than 10 people (Kenya Agribusiness and Agrofoindustry Alliance, 2016). Small enterprises have between KES 500,000 and 5 million annual turnover and employ 10-49 people. However, medium enterprises are not covered under the act but have been reported as comprising enterprises with a turnover of between KES 5 million and 800 million and employing 50-99 employees (Kenya Agribusiness and Agrofoindustry Alliance, 2016). This study is interested in MSMEs with annual turnover between Kes 500,000 and 800 million and employing 10-99 people.

It's well documented that MSMEs are key actors in enhancing national economic growth and development in public sector markets (Uyarra et al., 2014; Loader, 2018). However, scholars need to pay more attention to the fact that MSMEs could develop strategies to create a competitive advantage in public sector markets (Loader, 2013; Pickernel et al., 2011). PP budget stands at 65% of the government's annual expenditure in Kenya. This is a significant amount of money if strategically managed, that can impact positively MSMEs' participation in PP and ensure sustainable growth of MSMEs, especially in the devolved government units in Kenya.

1.1.3 Supply Chain Finance (SCF)

Supply Chain Finance (SCF) can be defined as: *the process of planning, controlling, and managing all the financial transaction activities in the supply chain to improve the working capital of both buyer and supplier in any supply chain* (IMF, 2019).

SCF creates a win-win situation for the buyers, suppliers, and financial intermediaries (Wuttke et al., 2016). The application of SCF not only improves the financial flow but also improves the material and information flow of MSMEs (Wuttke et al., 2016). The SCF technique fulfills the financial requirements of the supply chain by providing a lower cost of capital to the buyers and early payment to suppliers and finally by strengthening the buyer-supplier relationship (Olivera & Handfied, 2017). Furthermore, supply chain finance has the capability to become one of the best alternatives for MSME financing.

The government of Kenya spends approximately 70% of its budget on procurement (Muraguri, 2013). The size of public procurement in Africa is thought to be between 9% and 13% of GDP and as much as 20% of GDP in other developing economies (Tutu et al., 2019). Public procurement has been used to promote the government's economic, social, or environmental objectives (Wanderi, 2014). SCF enables firms to become capable and gain the financial muscles to compete favourably. SCF is one of the most thrilling and promising new products emerging in the banking industry (Huertas et al., 2018). It depicts ways by which cash flow and credibility of the entire supply chain can be maximized through the engagement of an inter-organizational approach offered by financial service providers (Jia et al., 2020; Ma et al., 2020).

In addition, SCF is able to resolve the inconsistencies in financial flows and irregularities in the working capital (Alora & Barua, 2019). For instance, through SCF solutions, buying firms can engage a third party (financier) to make payment on their behalf for the goods purchased from the seller through digital technologies. This helps to retain the working capital of the buyer while at the same time getting the seller paid for the goods sold. Thus, while suppliers gain quicker access to money they are owed, buyers get more time to pay off their balances. Both parties in the transactions can use the cash on hand on other projects to keep their respective business operations running smoothly. This finance solution is particularly helpful to SMEs and Micro Enterprises, which are characterized by low working capital to make substantial procurement purchases for government contracts. By leveraging this financial solution, a firm can create a new financial flow

innovation over the traditional supply chain financing approaches whose focus is primarily on the self-financing process (Ma et al., 2020).

According to the AlNuaimi et al. (2021), the SCF market is expected to increase by 82.76 billion year-on-year, with the compound annual growth rate (CAGR) accelerating by 17.21%. Thus, SCF solutions are fast becoming more important in this unpredictable business environment, where prices of goods and services are escalating in an exponential fashion, making working capital an insufficient purchasing power. However, other contributing factors as well come to play if micro and small enterprises are to participate in public procurement contracts. Considering the fact that SCF solutions are a technology-inclined (Huertas et al., 2018) and the dynamic environment surrounding today's businesses, MSMEs who seek to effectively utilize these finance solutions should build their digital capabilities.

1.1.4 Digitalization

Technologies have continued to make progress and the internet is considered to be one of the most significant sources of big data (Geoffrion & Krishnan, 2003). With digitalization, customers have direct access to communication with companies, which facilitates the exchange of data between them (Papa et al., 2020). The digitalization of the supply chain is emerging as a key phenomenon in the transformation of organizations (Verma et al., 2020) and is increasingly studied within academic circles and different industries (Buyukozkan & Gocer, 2018; Hennelly et al., 2020). Today's digital era revolves around the use of new technologies that create value for companies and offer a host of benefits. Digital capabilities are skills and specific technologies such as social media or mobile, as well as the analytic skills to drive value from big data (Westerman, Bonnet & McAfee, 2012). These capabilities enhance process improvement and relationships, which facilitate digital business transformations toward operational and strategic fields (Schwarz, Kalika, Kefi & Schwarz, 2010). From this perspective, micro and small enterprises that fail to build these important capabilities may be incapable to develop disruptive technologies against certain barriers that may impede them from participating in public procurement. Studies have shown that firms who are technologically inclined to adopt digital tools and capabilities in this dynamic business environment are more capable of gaining a competitive urge over rival firms (Alexandrova et al., 2020; Correia Pereira & Garcia Medina, 2014; Marx et al., 2021).

These same skills and capabilities are required by micro and small enterprises for them to compete for public procurement contracts.

It should be understood that the introduction of digital technologies leads to greater changes in the working environment in organizations (Scotto et al., 2017). Despite its new opportunities digitalization raises questions about how organizations will adapt and grow in this new space. Organizational culture has been suggested as a factor that may affect the effectiveness of a firm implementing digital technologies, many organizations are aware that they need to transform their culture in order to be able to achieve digital objectives. However, few studies have considered organizational culture when investigating digital transformation (Duerr et al., 2018).

In addition, there has been greater attention with regard to the technological and economic changes ascribed to digital transformations, not much can be said about the digital organizational culture which is one of the driving factors of transformation (Workurka et al., 2017). In a nutshell, organizations can innovate this digital culture in a way to encourage the development of collaborative work environments, creativity, and smart thinking to obtain data in real-time for decision-making not only among managers but among all company employees (Kane et al., 2015). A workforce with digital skills at all levels with much more agility enables organizations to build partnerships and capabilities that drive scale across global networks.

1.1.5 Barriers and Public Procurement Participation

When it comes to public procurement, MSMEs confront various barriers. In Wales, for example, barriers include bureaucracy in supplier pre-qualification and the tendering process, the cost of completing tender documentation and providing supporting documentation, access to procurement process information, and getting on to approved supplier lists, all of which make it difficult to secure suitable work opportunities (Kath, Chris & Huw, 2009). Laurie and Gabriela (2012) make the argument that, while MSMEs participating in the public supply market benefits the purchasing organization and the economy as a whole, the owners of these businesses have consistently expressed dissatisfaction with the public procurement culture and processes and prefer to supply the private sector (Loader, 2013). SMEs around the world, like those in the UK, continue to experience difficulties in participating in public procurement. Supplier selection through pre-qualification is one of the first barriers MSMEs encounter, according to (Kath, Chris,

& Huw, 2009). Other issues include administrative needs for required bidding processes and MSMEs' perceived inability to perform. Moving to East Africa, where procurement accounts for up to 34.76 percent of GDP, the government's purchasing power is enormous and can have a good impact on economic systems by ensuring SMEs are sufficiently represented (Obanda, 2010). MSME procurement issues have been highlighted in a previous study, and the bulk of them are resource-related (Karjalainen & Kempainen, 2008; Woldie, 2012).

Akenroye and Aju (2013) in their study of barriers to SME participation in Public Procurement in Nigeria revealed that information obscurity and incapability are the foremost barriers facing SMEs' participation in PP. They reiterated biased evaluation criteria and unfavorable payment terms affect MSMEs' participation in PP. A study carried out by Mastercard Foundation in Kenya found that despite ambitious policies, there are four significant barriers that still stand in the way of MSMEs' participation in PP. Lack of access and awareness of government processes, procurement corruption, labor-intensive/manual processes, and delayed payment (Mastercard Foundation Kenya, 2022).

These issues impede MSMEs' ability to win contracts and get money to expand their businesses. As a result of the preceding, it is clear that efforts to encourage the SME sector to participate actively in public procurement have generally failed, resulting in limited involvement in the market (Woldie, 2012). Against this backdrop, it is imperative to investigate the impediments to SME involvement in Kenya's public procurement market.

1.2 Statement of the Problem

Worldwide public procurement has become an issue of public attention and debate and has been subjected to reforms, restructuring rules, and regulations (World Bank, 1995). In Kenya, despite the institutional reforms and policies carried out in public procurement, MSMEs still struggle to participate in the public procurement market, this is a major concern, considering the contribution of MSMEs to the development of the country (Akenroye et al., 2020). Over 70% of key government contracts in Kenya are won by multinational companies (Muchira, 2013), by implication, 30% of major tenders are won by the MSMEs. Hivos East Africa commissioned a research study to establish the ongoing impact on Access to Government Procurement Opportunities (AGPO). Hivos-Annual Report (2018) findings were that tenders worth 183.5 billion were listed between

2013 and 2016, and out of 2232 tenders only 172 were awarded to AGPO-registered firms (AGPO is part of the MSMEs). Some of the challenges the report indicated were a lack of understanding of the bidding process, a lack of invoice financing to fund the tenders, and late payments after delivery. Again, conflicts of interest where established public officials and persons/ entities have registered firms exploiting the MSMEs. Albeit, MSMEs are key actors in enhancing national economic growth and development, they are most under-represented in public sector markets (Uyarra et al., 2014; Loader, 2013). This leads to procurement fraud inhibiting MSMEs' participation in PP.

However, scholars need to pay more attention to the fact that MSMEs could develop strategies to create a competitive advantage in public sector markets (Loader, 2013; Pickernel et al., 2013). The digitalization of the supply chain is emerging as a key phenomenon in the transformation of organizations. Organizational culture has been suggested as a factor that may affect the effectiveness of a firm implementing digital technologies, many organizations are aware that they need to transform their culture in order to be able to achieve digital objectives (Horffke et al., 2017). However, only some studies have considered organizational culture when investigating digital transformation (Duerr et al., 2018).

Supply chain finance is mainly composed of three partners: the buyer, the supplier, and the financial institutions. SCF creates a win-win situation for the buyers, suppliers, and financial intermediaries (Wuttke et al., 2016). The supply chain finance solutions/techniques provide a lower cost of capital to the buyers and early payments to suppliers and finally strengthen the buyer-supplier relationship (Olivera & Handfield, 2017). Supply-chain finance has the capability to become one of the best alternatives for MSME financing. So far, research linking a firm's resources and capabilities to the successful participation of MSMEs in public procurement is scarce. Furthermore, there has been a rapidly growing body of literature assessing the effectiveness of policy measures to support MSMEs in public procurement (Reis & Cabral, 2015). However, Scant critical attention has been paid to investigating how a combination of organizational capabilities like supply chain finance, digital capabilities, and barriers to pp involvement, impact public procurement participation by MSMEs. Hence, the study seeks to find out how supply chain finance, digitalization, and barriers will impact public procurement participation independently in Nairobi County.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

The general objective of the study is to examine how MSMEs' participation in public procurement contracts can be escalated in Nairobi County, Kenya.

1.3.2 Specific Objectives of the Study

The study will be guided by the following objectives

- i) To examine the relationship between supply chain finance and public procurement participation of micro, small, and medium enterprises in Nairobi County, Kenya.
- ii) To determine the impact of digitalization on public procurement participation by MSMEs in Nairobi County, Kenya.
- iii) To investigate the relationship between barriers faced by MSMEs and their participation in public procurement in Nairobi County, Kenya.

1.4 Research Questions

- i) What is the relationship between supply chain finance and public procurement participation of MSMEs in Nairobi County, Kenya?
- ii) What is the impact of digitalization on public procurement participation by MSMEs in Nairobi County, Kenya?
- iii) What is the relationship between barriers faced by MSMEs and their participation in public procurement in Nairobi County, Kenya?

1.5 Scope of the Study

The study intended to assess how supply chain finance and digitalization can aid MSMEs to mitigate public procurement barriers in securing public procurement. Thus, the study does not include large firms. Data for the study was collected from MSMEs in Nairobi County, hence, other MSMEs in other parts of the country were not included in this study. The responses from the respondents to the various questions were all from the perspective of a top-level manager or owner/manager in each of the chosen MSMEs. The population of interest comprised owners/managers of MSMEs in Nairobi County. The study targeted 100 MSMEs in Nairobi County. The researcher employed primary data which were collected through questionnaires. The study was undertaken from January 2023 to May 2023.

1.6 Significance of the Study

1.6.1. Practical significance

On the policy side, the findings inform the government to initiate the appropriate strategies with regard to MSMEs' lack of participation in public procurement in the following ways. It should seek to adopt proactive online and offline disclosure practices for all documents and data related to planning, awarding, implementation, and oversight of public procurement contracts.

The supply chain finance (the Hustler funds, women funds, Uwezo fund, youth funds, prepayment financing, and inventory pledge financing, etc.) should be coordinated to minimize silos in operations.

1.6.2. Methodological significance

To the MSMEs community in Kenya, the findings on the new era of digitalization culture transforming organizations inform them to be digital-oriented, embark on training for almost every individual in the firms, and encourage the development of collaborative work environments, creativity, and smart thinking to obtain data in real-time.

1.6.3. Theoretical significance

On the theoretical side, several literature sources speak about supply chain finance with regard to the MSMEs' position as weak due to a plethora of reasons and outline several solutions. However, about the barriers facing MSMEs in relation to public procurement, many authors lump them together with digitalization and supply chain finance. This study separates them and sought to unravel the impact supply chain finance, digitalization, and barriers have on public procurement participation.

1.7 Chapter Summary

The chapter has discussed the introduction of the study, a brief background on the keywords, supply chain finance, digitalization, barriers to PP, and public procurement in Kenya. The problem statement, objectives of the study, research questions, and the scope and significance of the study were also discussed. The next chapter discussed the literature review of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This Chapter entails the conceptual review of key variables used in the study in terms of definitions, overviews, antecedents, and outcomes, among others. The review examined issues around supply chain finance, digitalization, and barriers, micro, small and medium enterprises encounter in their participation in public procurement markets.

This review also served as a foundation for building the conceptual framework and the development of the relevant hypotheses. According to Bell (2010; pg. 112), “Literature reviews should be succinct and give a picture of the state of knowledge and major questions in the chosen topical area.” This section aims at locating this study within the context of previous studies by synthesizing the issues and findings that emerge from reviewed extant literature. This includes a conceptual review, theoretical foundation, empirical studies, summary of knowledge gaps, conceptual framework, conceptualization, operationalization, and measurement of variables.

2.2 Conceptual Review

2.2.1 Public Procurement

Worldwide public procurement has become an issue of public attention and debate and has been subjected to reforms, restructuring, rules, and regulations. Public procurement refers to the acquisition of goods, services, and works by a procuring entity using public funds (World Bank, 1995). According to Adjei-Bamfo et al. (2019), public procurement is vital for both developed and emerging economies. Notwithstanding this, there are various barriers to the ease with which micro and small businesses can participate in public procurement and contribute to economic development. Before delving into the issues that MSMEs face when attempting to engage in public procurement, it is necessary to define procurement. Adjei-Bamfo, et al., (2019) defines procurement “as securing supplies, materials, and services of good quality, in the correct amount, at the right time, at the right cost, and from the right place”.

According to Viale and Zouari (2020), procurement is the act of getting equipment and supplies, as well as the action or occupation of obtaining something. As a result, the term

places a premium on gaining or obtaining something with a substantial amount of effort or by unusual means. As a result, public procurement comprises the government purchasing much-needed goods, services, and works via contractual channels. The procedure encompasses situations in which government funds are utilized to purchase goods and services, as well as situations in which the government is not directly involved. The central assumption entails purchasing items for the general public at the lowest possible cost of ownership while taking into account quantity, quality, location, cost, and time, as well as ensuring that value-for-money principles are maintained.

According to Nani and Ali (2020), accountability in the procurement process is a key feature of effective governance in many nations. Practitioners must be held accountable for adhering to the legal requirements governing the procurement process, as defined by public procurement standards and existing law. Because of the importance of public procurement and its impact on economic development, process accountability is crucial from both an individual and institutional standpoint. In the pursuit of accountability, technology, program and policy evaluations, and other actions that improve scrutiny are becoming increasingly important. Public procurement has been used to promote governments' economic, social, or environmental objectives (Wanderi, 2014).

2.2.2 Public Procurement in Kenya

In Kenya, deliberate efforts have been made to establish rules governing public procurement (Makiva, 2021). The 2005 Public Procurement and Disposal Act and 2006 Public Procurement and Disposal Regulations emphasized the government's commitment to improving the public procurement system (Musyoka, 2022). Public procurement has evolved from a primitive system with no constraints to a well-defined legal procurement system. According to Ngunjiri (2019), the Public Procurement and Asset Disposal Act of 2005, as amended in 2015, evolved into the Public Procurement and Asset Disposal Regulations, 2020, and the Suppliers Practitioners Management Act. This was an ACT of Parliament to give effect to Article 227 of the Constitution: to provide procedures for efficient public procurement and asset disposal by public entities; and for related purposes (Public Procurement Asset Disposal Act, 2019).

Several studies show that similar to Uganda and Lesotho, despite efforts, these legislation and policy guidelines have failed to yield any real benefits in terms of MSME participation in public procurement (Ramphoma, 2021). Policies that ensure that

businesses that have not paid their taxes have no competitive advantage must be implemented to strengthen public procurement processes, effectively eliminating illegal businesses. Many countries, including South Africa, have recently included these provisions in public procurement reforms.

Finally, procurement strategies centered on supplier/contractor compliance with legal criteria are a long-term strategy for ensuring supplier participation in government-buying activities (Ngunjiri, 2019). As a result, the playing field has been leveled, and suppliers' chances of benefiting have been equalized. Yet, if such rules and regulations are to be effective and have measurable benefits for MSME sector providers, it is critical to ensure that the entire policy process is cost-effective and efficient. This raises the question of whether the present supplier networks and procurement methods of public-sector purchasers are designed with economic efficiency as the primary motive. The premise for this inquiry is that when procurement processes within government purchasing bodies make it simpler for MSMEs to participate, there is an immediate benefit in terms of getting more value for taxpayer dollars. With regard to the preceding argument, MSMEs' engagement in public procurement markets supports competitive pricing of goods and services without sacrificing quality (Ngunjiri, 2019), allowing for successful procedures as a result of the sound policy.

2.2.3 Public Procurement Culture and Governance

The public procurement function is crucial in fostering a thriving business environment that supports MSMEs' growth (Daugbjerg, 2023; 2011; Sorte, 2016). The core characteristics of a strong procurement process, according to Thai (2001), are accountability, in which effective processes must be in place to allow procuring entities to spend available resources wisely. For a long time, many aspects of the public procurement process have been marred by inefficiency, corruption, and a disdain for basic "value for money" principles. This has had a negative influence on the rate and quality of progress toward national development goals, particularly in emerging and transitional nations (Tan *et al.*, 2009).

Jachi and Jachi (2019) posit that governments are frequently the single largest client in a country, and they might utilize their purchasing power to influence private sector conduct. Public procurement, in particular, has been identified as a tool for achieving broader government aims, such as fostering supply market innovation, leveraging public funds to

assist environmental or social goals, and supporting local markets. Effective policy and regulatory instruments must accompany a supportive public procurement culture that promotes the growth of MSMEs. This is demonstrated by the fact that procurement issues are prominently featured in modern enterprise policy. According to Pickernell *et al.*, (2013); Jachi and Jachi (2019) progressive business practices encourage MSMEs to formalize their dealings as they enter public-sector marketplaces, resulting in process and product innovation being the norm for MSME business operations (Georghiou *et al.*, 2014).

Kreiser, *et al.*, (2013) argues that the European Commission makes an important point by stating that when SMEs actively participate in the supply market, competition is immediately increased. The current procurement procedures, beliefs, and behaviours sustain or deteriorate MSMEs' participation in the public procurement markets, which results in reduced bid costs and better choices for public sector entities. A progressive public procurement culture, on the other hand, allows MSMEs to play a significant role in public supply markets, triggering the desire for a more enabling and sustainable domestic business sector that creates jobs, invests in the local economy, and contributes to the national prosperity agenda.

2.2.4 Digitalization

Digitalization has been at the forefront of many businesses and has been recognized as the most important advancement that is transforming society and industry (Jachi, & Jachi, 2019). According to Sabbagh *et al.* (2012), digitalization promotes progressive economic growth, with countries in the most advanced stages of the process, benefiting by 20% more than those in the early stages. Loader (2018) spells out the advantages firms enjoy when they include environmental, social, and economic sustainability while adapting to digital transformation strategies. It has been demonstrated that digitalization affects employment rates, and quality of life, and helps citizens to access public services (Loader, 2018).

The term digitalization refers to the numerous multifaceted processes and phenomena that arise with the adoption and use of modern technologies in larger personal, professional, and societal contexts (Muchira, 2013). Loader (2018) also defines digitalization as “the use of digital technologies and of data to create revenue, improve business, replace/transform business processes and create an environment for digital business,

whereby digital information is at the core.” The concept of digitalization has aided researchers into investing in quantitative studies and some qualitative studies through case studies specifically. A research project was conducted in 2015 by MIT Sloan and a management review on Digital Business and Global study in various organizations around the world. Deloitte concentrated on more than 4,800 business executives, managers, and business analysts around the world and how they viewed digitalization. According to the study, 92% of respondents thought that digitalization would be crucial in three years, and 76% of respondents said that digital technologies are significant to their organizations. Also, congruent with 60% of respondents, digital technologies have the ability to fundamentally alter how people operate in their businesses. Lastly, 76% believe that shortly, digital technologies would significantly or moderately disrupt their industry (Parviainen et al., 2017). Drivers for digitalization have been elaborated on in the studies conducted by (Rachinger et al., 2018). Respondents from both industries thus, the automotive and media industry, mentioned the internal and external drivers for digitalization. The external factors that are significant for the media and automobile industries include the availability of technologies and the shortening of technological lifecycles while internal factors relating to innovative activities and strategy, as well as technology turbulence, play an important role when social media and Big Data are part of the business model innovation”. These findings are consistent with that of Bowman et al., (2017). Even though the transformation of digital technologies has been adopted by both private and public sectors, the impact of technology globally keeps increasing (Mahaldar, & Bhadra, 2015). There have been several debates on the impact or effects of digitalization. Some authors have concluded that digitalization has a significant impact on firm performance while others discussed the negative or downside of digitalization and the risk associated with it (Turel et al., 2021). Global industries over the past couple of decades have not just experienced technological advances that have created opportunities such as increased adaptability, responsiveness, and product customization, but have also brought up a variety of difficulties, including swift technology advancement, greater complexity, shifting consumer tastes, and altered legal requirements (Rachinger et al., 2018). This change has caused some form of difficulties especially when it comes to larger or more complex organizations. Although there are multifarious new technical options, people are unsure of how to use and implement them concurrently in terms of product and service offerings (Lerch & Gotsch, 2015). In a similar vein, research on the negative effects of digitization at the organizational level has covered concerns about

employees' web access to work (Mazmanian., 2013 & Mazmanian et al., 2013), cyberloafing (Andreassen et al., 2014; Khansah et al., 2017), disruptions caused by technology (Addas & Pinsonneault, 2018), abnormal workplace behavior, and reduced control over work (Demetis & Lee 2018, Markus, 2017). Notwithstanding, there are positive effects that have erupted as a result of employing digitalization in various systems.

Companies can succeed due to the embedded use of digital technology by maximizing resource utilization, cutting expenses, increasing staff productivity and job efficiency, optimizing supply chains, and increasing consumer loyalty and happiness, to mention a few (Coupette, 2015; Kagermann et al., 2015; Kaufmann, 2015; Loebbecke & Picot, 2015). Other Examples of relevant literature that discusses the positive impacts of digitalization includes that of Sabbagh et al., (2012). They analyzed the impact of digitalization on a number of measures, including GDP growth, welfare, transparency, and so forth. About their findings, GDP per capita rises by 0.5 to 0.62% for every 10% growth in digitization.

Also, Katz et al (2014) noted the various impacts on several country clusters as follows: For advanced adopters, a 10% rise in digitalization ratings results in a 3.1% GDP growth, a 3% increase for transitional adopters, and a 2.5% increase for emerging and limited adopters; By breaking the digitalization process into three stages—ICT access, usage, and empowerment—and asserting different effects of each stage on macroeconomic performance; Evangelista et al. (2014) adopted a completely different strategy. There was a significant positive effect of ICT usage on labor productivity growth after a regression analysis was made (Van Ark, 2015).

It should be understood that the introduction of digital technologies leads to greater changes in the working environment in organizations (Scuotto et al; 2017). Despite its new opportunities digitalization raises questions about how organizations will adapt and grow in this new space. Organizational culture has been suggested as a factor that may affect the effectiveness of a firm implementing digital technologies, many organizations are aware that they need to transform their culture to be able to achieve digital objectives (Horffke et al., 2017). However, few studies have considered organizational culture when investigating digital transformation (Duerr et al., 2018).

2.2.4.1 Electronic Procurement (E-Procurement)

The E-Procurement definition has been coupled with confusion whereby “e-Procurement” and “e-Purchasing” have been used synonymously in several instances, forgetting that the term “purchasing” has a narrower scope. For instance, Versendaal and Brinkkemper (2003) perceived e-procurement as a particular area of e-business covering both internal processes as well as B2B processes. However, Davila et al., (2003) opined that any technology through which the acquisition of goods over the Internet is made possible could be referred to as e-procurement. Smart (2010) also defines e-Procurement as “an application hosted by the buying firm which allows users to search for products of interest, place and track their orders, receive and pay for purchases”.

According to Brussels (2012), e-Procurement refers to the use of electronic communication by public sector organizations in buying supplies and services or tendering public works. Croom and Brandon-Jones (2004) reiterated the above views of e-procurement to mean the use of Internet-based (integrated) ICTs to carry out some of the overall stages of the procurement process, which includes search, sourcing, negotiation, ordering, receipt, and post-purchase review. All these definitions point to the fact that e-Procurement is something that is internet based and therefore there have to be strong internet connections to enhance its smooth operation. Broadly speaking, e-procurement systems have additive components that go beyond Electronic Data Interchange (EDI), and data exchange for order fulfilment including: (1) the ability to increase the transparency of data to different actors; (2) enable greater automation of procurement processes and transactions; and (3) integration of other anti-fraud and anti-counterfeit technologies (Mackey & Cuomo, 2020).

2.2.5 Supply Chain Finance

According to Neupane, et al., (2014), supply chain finance (SCF) provides the opportunity to reduce operational working capital. Reverse factoring (RF), often known as the buyer-centric method, authorized payables finance, or simply SCF, is the most widely used mechanism. When appropriate, the terms SCF and RF will be employed frequently throughout this thesis (Njuguna, 2015). SCF has expanded quickly since SCF can enhance a supply chain as a whole, and has been published simultaneously. Despite this, SCF is still in the writing and business implementation stages of its development (Robinson, 2007; Dermica, 2007).

Over time, researchers and practitioners got closer to a unified definition of SCM. The term was condensed to a single definition as financing entered the purview of SCM and came to be recognized as a driver for supply chain value generation. Given that there are over 30 definitions from various scholars and practitioners, the same issue appears to persist within the context of SCF (de Boer, 2017). The reason for this is that the SCF framework encompasses a wide range of methodologies and solutions, and research is still in its early stages. This section examines, categorizes, and summarizes the most popular definitions of SCF in research and practice. The objective of this discussion is the creation of a single, thorough description that practitioners and future scholars may build on.

When examining various SCF definitions, it becomes evident that the issue is more complex than the term alone (Table 2.1).

Table 2.1: Definitions of Supply Chain

Author (year)	Definition
EBA (2014)	Supply chain finance is the use of financial tools, procedures, and technologies to manage the working capital liquidity tied up in supply chain activities for cooperating company partners as efficiently as possible. There are options to automate the start of SCF interventions thanks to the development of sophisticated technologies to track and regulate events in the physical supply chain.
Wuttke et al. (2013)	According to the definition provided above, “our definition adopts an upstream supply chain viewpoint and focuses on the organizational structure to be built between the concerned parties to obtain visibility and control and to routinely perform cash flow optimizing measures”
Hofmann (2005)	Using the method of planning, directing, and managing the flow of financial resources on an inter-organizational level, SCF enables two or more organizations in a supply chain, including external service providers, to collaboratively create value.
PWC (2009)	By employing an intermediary tool to sign buyers, sellers, and third-party financing institutions, SCF essentially refers to a balanced technique for boosting working capital for both buyers and sellers in a transaction. This lowers supply chain risk and costs while also strengthening client relationships.
Seifert & Seifert (2009)	"Supply Chain Finance (SCF) offers a cutting-edge way to lower working capital. Reverse factoring, which is its fundamental process, makes the method buyer-centric rather than supplier-centric.
Steeman (2014)	In order to improve overall financial performance and reduce overall supply chain risk, at least two supply chain partners must participate in network cohesiveness, which is facilitated by the focal company.
Pfohl & Gomm (2009)	Supply Chain Finance (SCF) is the inter-company optimization of financing as well as the integration of financing operations with clients, vendors, and service providers in order to boost the value of all involved businesses.

Camerinelli (2011)	The term “SCF” refers to a group of goods and services that financial institutions provide to help a supply chain's physical and informational flow.
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Source: Author’s Construct (2023)

Over time, researchers and practitioners got closer to a unified definition of SCM. The term was condensed to a single definition as financing entered the purview of SCM and came to be recognized as a driver for supply chain value generation. Given that there are over 30 definitions from various scholars and practitioners, the same issue appears to persist within the context of SCF (de Boer, 2017). The reason for this is that the SCF framework encompasses a wide range of methodologies and solutions, and research is still in its early stages. This section examines, categorizes, and summarizes the most popular definitions of SCF in research and practice. The objective of this discussion is the creation of a single, thorough description that practitioners and future scholars may build on.

Templar et al. (2012) claim that because SCF is not specified as a model, discipline, technique, product, or programme, "identifying the true essence of SCF in itself looks to be problematic. Hoffmann (2005) is also correct, as he states in his study, to include the flow of technology, information, documents, and data management, as well as order processing, among other things, in the definition of SCF. Templar et al. (2012) constructed an overview, with SCF being a component of the larger SCM scope, to support the various definitions (Figure 2.1):

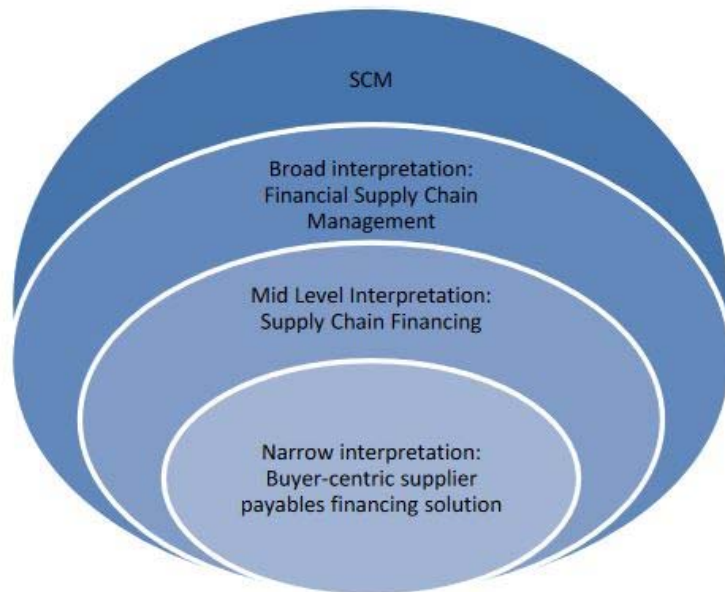


Figure 2.1: SCF with Supply Chain Management

Source: Templar et al. (2012)

According to Marak and Pillar (2018), supply chain finance is not a single solution-based mode of financing. As it is a medium to create the flow of funds through the supply chain, several solutions or instruments constitute SCF solutions. They conducted a review of the literature on supply chain finance solutions as in Table 2.2.

Table 2.2 Literature Review on SCF Solutions

SOLUTIONS	DEFINITION	SOURCE
Reverse Factoring	In Reverse Factoring, the buyer sells the accounts payables and works together with the supplier and the banks to optimize the flow of funds	Liebl et al. (2016)
Accounts Receivable Financing	Accounts receivable financing refers to the act of borrowing from a commercial bank with the accounts receivable that have not been received	Ramezani et al. (2014); Wang (2017)
Purchase Order Financing	“Purchase order financing allows banks to offer loans to suppliers by considering the value of purchase orders issued by reputable buyers, and assessing the risk of the supplier delivering the order successfully”	Babich and Kouvelis (2018)
Agricultural Supply Chain Finance	A supply chain financing generally of pre-harvest, trade services financing, and post-harvest, applied in the agriculture sector.	Suayb Gundogdu (2010); Li et al. (2011); Karyani et al (2015)
Factoring	“Factoring is a type of supplier financing in which firms sell their credit-worthy accounts receivable at a discount (generally equal to interest plus service fees), and receive immediate cash.”	Klapper (2016)
Online SCF Platform	An online platform that facilitates in networking with the parties involved in supply chain finance (SCF)	Hofmann and Zumsteg (2015); Martin and Hofmann (2017); Gao et al. (2018)
Inventory Financing	A short-term loan from a financial institution to finance inventories.	Caniato et al. (2016)
Warehouse Financing	Warehouse financing means the cooperators mortgage their goods in warehouses for pledge loans.	Jian et al. (2016)
Buyer Direct Financing	In buyer direct financing, the buyer (manufacturer) issues both sourcing contracts and loans directly to the suppliers.	Babich and Kouvelis (2018)
Raw Material Financing	It is part of inventory financing whereby the funds are given to finance raw materials.	Basu and Nair (2012); More and Basu

		(2013)
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Third Party Logistics Financing	A logistics service provider buys goods from a manufacturer and obtains an interim legal ownership before selling them to manufacturers' customers after a certain time.	Caniato et al. (2016); Song et al. (2016)
Buy Back Guarantee	"It refers to a kind of supply chain financing [in which] the bank helps the capital -constrained retailer settle the payment, based on the core supplier's buyback guarantee".	Chen et al. (2017)
Bank Guarantee	A bank guarantee is a promise from the debtor's bank that the liabilities of the debtor will be met in the event of failure to pay.	Martin and Hofmann (2017)

Source: (Mark & Pillar, 2018)

2.2.5.1 Supply Chain Finance Among MSMEs

MSMEs finance refers to a variety of methods for raising cash and additional funds for a company's growth and development. While only a tiny percentage of small and medium enterprises (MSMEs) evolve to become huge organizations with a strong financial basis, a large number of MSMEs suffer the same difficulty in obtaining money for either start-up or growth at a reasonable cost. Even though countries and economies differ in terms of socioeconomic aspects, financial issues are universal. MSMEs have financial and asset limits, making them appear risky to lenders. This is exacerbated by the fact that, in addition to poor capitalization, most MSMEs lack a documented record of accomplishment (Fredriksson & Moro, 2014). Because of these factors, financiers do not consider the MSME sector to be profitable; in other words, they do not believe MSME investments would yield bankable returns. To highlight this, Abdulsaleh and Worthington (2013) claim that obtaining cash is the most difficult hurdle for MSMEs, which is exacerbated by the fact that microfinance institution loans are insufficient to meet MSMEs' capital requirements (Bauchet & Morduch, 2013). As a result, it is commonly acknowledged that the finance gap is the most significant difficulty facing MSMEs. This is demonstrated not just by their failure to collect finances, but also by the fact that they pay more for the funds that are accessible than large firms (Hall, 2009). Most MSMEs are ineligible for or do not receive needed funding when they apply for external finance (Fairlie & Robb, 2007; Cowling et al., 2012). MSME eligibility issues include a lack of

asset coverage (Coco, 2010), a lack of information leading to selection failure (Myers & Majluf, 2014), insufficient abilities such as bad management, a lack of financial accountability systems, insufficient enterprising skills, and non-viable ventures.

Inadequate finance has been extensively researched, and the findings from several experts confirm that it is the most significant difficulty facing MSMEs. This study settled on five types of supply chain finance that have been discussed by Marak and Pillar (2018), namely: **Online SCF platforms** are those that facilitate all the activities in ensuring the parties involved are networked with regard to resources in supply chain financing (Hofman & Zumsteg, 2015; Martin & Hofman, 2017; Geo et al.,2016); **Bank Guarantee** is a promise from the debtor's bank that the liabilities of the debtor will be taken care of in the event of inability to honor any payment (Martin & Hofman, 2017); **Inventory Financing** is a short-term loan obtained from a financial institution to finance inventories (Coniato et al., 2016); **Warehousing Financing** is the situation where co-operators mortgage their goods in warehouses to secure loans (Jian et al.,2016); **Third Party Logistics Financing** is the situation where a logistics service provider purchases goods from a manufacturer and secures interim legal ownership before selling them to the manufacturer's customers after a certain time.

In Kenya, there are several online SCF platforms that have been introduced by the government and other bodies to assist MSMEs such as, Hustler Funds, Uwezo Fund, Youth Enterprise Fund, and Women Fund., etc.

The Hustler Fund is a government fund that allows Kenyan citizens to borrow money through their cell phones. The Hustler Fund's goal is to enable affordable credit to sections of the citizens who have been marginalized for a long time. The hustler fund tends to borrow at 8 percent a year, which is the lowest interest ever charged in Kenya. The government funding will provide affordable credit in four products namely, personal finance' Micro Loan, SMEs Loan, and Start-Ups Loans (hustlerfund@treasury.go.ke)

Uwezo Fund is a flagship program for Vision 2033 which is aimed at assisting women, youth, and persons with disabilities access finances to promote businesses and enterprises at the constituency level. The fund is highly devolved and adopted the concept of the bottom-up approach with decision-making done at the grass-root level. The fund was established in 2014. The fund has disbursed more than Ksh 7.2 billion and supported 1,124,221 beneficiaries (uwezo.go.ke).

2.2.6 Barriers to Public Procurement Involvement

Many obstacles exist in developing and transitional nations such as Kenya, Tanzania, Uganda, Zimbabwe, and South Africa that prevent indigenous vendors from accessing government markets (Noerlina, Kristin, et al., 2018). In general, these issues include a poorly trained or unskilled workforce; a lack of proper responsibility for government choices; and a lack of transparency in the procurement process. Engagement of the private sector in public procurement, particularly for products and services, is quite limited. Local tenders, suppliers, consultants, contractors, architects, and engineers, for example, do not have sufficient ability to engage in international and local bids, especially when the stakes are high (Noerlina, Kristin, et al., 2018). Barriers to public procurement involvement have been discussed severally by many authors. These barriers can be both perceived and real (Loader, 2005).

Loader (2005) separates the barriers to MSMEs participation in public procurement into two categories. The first category consists of irregularities in the public sector environment and the procurement process taking cognizance of issues namely; contract requirements, tendering process, and the organization culture. The second category deals with issues like capacity constraints, lack of skills, and attitudes toward public procurement. Saastamoinen et al (2017) contend that careful observation of the barriers to public procurement shows that information obscurity is the greatest barrier. Furthermore, a study was undertaken to determine the role of training in reducing barriers to MSMEs participation in public procurement (Saastamoinen, et al., 2017) The study concludes that there are five main variants of barriers to public procurement involvement. These are namely; lack of practical skills, lack of firm resources, bureaucratic procurement processes, lack of awareness of public procurement, and a lack of skilled workers and partners.

However, the main conclusion is a lack of training which increases the barriers to public procurement involvement. Akenroye and Aju (2013) in their study of barriers to SMEs' participation in public procurement in Nigeria revealed that information obscurity and incapability are the foremost barriers facing SMEs' participation in public procurement. Procurement fraud or corruption is another key barrier to MSMEs participation in public procurement. Findings from a study conducted in Kenya and Tanzania show that the proliferation of corrupt practices in the tender process is a cause of the non-participation of SMEs in public procurement. Against this backdrop, the study focuses on information

obscurity, incapability (lack of training) delayed payment, excessive documentation, and procurement fraud as the main barriers in the Kenyan context.

2.3 The Theoretical Foundation

In this section, the theoretical rationale for the research study is presented based on the literature review in the previous sections. Some of the concepts have already been introduced and will be reiterated in this chapter building them into the theoretical framework and hypotheses.

2.3.1 Resource-Based View (RBV) Theory

The resource-based view, according to Wernerfelt (1984), explains that companies achieve and maintain competitive advantage as they develop and utilize “valuable resources and capabilities”. RBV is one of the themes that have captured the most attention in the strategic management literature (Hooley et al., 1998). The seminal article by Barney (1991) on "Firm Resources and Sustained Competitive Advantage" is seen as the study that brought the resource-based view into the limelight even though there is evidence that the work by Edith Penrose in 1959 provided a good foundation that led to the current resource-based view of the firm (Kor & Mahoney, 2004). Currently, the RBV has become interdisciplinary and has been applied in different areas like ‘economics, ethics, law, management, marketing, supply chain management, and general business’ (Hunt, 2013; pg. 286). As a result, the RBV theory is tried and tested.

The acquiring of competitive advantage through a firm’s internal resources seems to be the main emphasis of the RBV. According to Barney (1991), ‘not all resources hold the potential of sustained competitive advantages.’ For a resource to be considered as having a sustainable competitive advantage, it must have four attributes namely; it must be valuable, it must be rare, it must be imperfectly imitable and there should not be an equivalent substitute. Thus, it has been emphasized that organizations need to inherently develop or acquire unique competencies that are firm-specific and enables them to perform better than the competition (Prahalad & Hamel, 1990).

Within any organization, resources can be seen as the “different skills, capabilities, financial resources, human resources, and physical resources in a firm” which has to be manipulated to derive a competitive advantage (Mohamed, Ann & Yee 2014). Simply put, a resource is anything tangible or intangible owned or acquired by a firm (Hafeez, Zhang & Malak,2002). Capabilities on the other hand have been defined as the “ability to

utilize resources in performing a task or activity”. This study adopts a working definition of capability as “a firm’s capacity to transform its resources into outputs valued by the firm’s customers and which can generate profits for the firm” (Mohamed, Ann & Yee 2014). Micro and small enterprises in order to be scalable in terms of participation in public procurement, need to develop digital capabilities, and supply chain finance solutions to enable them to fund their operations. In addition, micro and small enterprises need to build their internal capabilities to enable them to overcome the barriers to public procurement involvement.

2.3.2 Pecking Order Theory

The pecking order theory (Myers, 1984) is among the many theories on capital structure, it states that businesses favor internal funds as opposed to seeking debt financing to equity financing offered by governments (Degryse et al., 2012). However, when forced to choose a line of external financing, SMEs would prefer the less risky and demanding sources, for example, debt financing over equity financing. This reason explains why banks continue to be SMEs' main external finance providers (Irwin & Scott, 2010) despite high rejection rates linked to high risk and uncertainty associated with SMEs (Bauchet & Morduch, 2013) and strong collateral requirements by lending bodies (Klonowski, 2012).

The pecking order theory relates to a company’s capital structure in that it helps explain why companies prefer to finance investment projects with internal financing first, debt second, and equity last. The pecking order theory comes up from information asymmetry and explains that equity financing is the most expensive and should be used as the last resort. This supports the fact that supply chain finance literature is a better option than debt and equity financing. From the objectives to the conceptual framework, pecking order theory is justifying why MSMEs lean towards supply chain financing in a quest to fund their businesses. This explains why this study investigates supply chain finance solutions like the online SCF platform solutions-Hustler fund, Uwezo fund, inventory pledge financing, prepayment financing, etc. as indicated in the previous section. The study emphasizes that the main theory for the study is the Resource-Based View theory and the Pecking order theory is a complementary theory.

2.4 Empirical Literature

2.4.1 Supply Chain Finance and MSME Public Procurement Involvement

There are a lot of studies on supply chain finance, competition capabilities, and business performance. In one, Frohlich and Westbrook (2001) in their study, examined the effect of supply chain finance on performance, classified supply chain finance into five classes (inward-, periphery-, supplier-, customer-, outward-facing) according to the integration intensity of the company towards the customer direction and the supplier direction. They examined the performance differences between these five classes. As a result, it is found that outward-facing companies which were defined as the most comprehensive finance level of the supply chain, have better performance in many criteria than the other companies in other classes.

Simatupang and Sridharan (2002) propose that members of the supply chain should consider appropriate performance measures, integrated policies, information sharing, and incentive alignment for collaboration. Narasimhan and Kim (2002) examined the effect of supply chain finance on the relationship between diversification and a firm's competitive performance. By comparing the main and interaction effects of supply chain finance and diversification on performance, they showed that supply chain finance strategy modifies the relationship between diversification and performance. Additionally, they argued that the coordinated use of supply chain finance and diversification strategies has a significant effect on firm performance. Rosenzweig et al. (2003) examined the supply chain finance's effect on business performance in the consumer products sector in their study and also considered the competitive capabilities which affect the relationship. They reached the conclusion that supply chain finance is directly related to business performance

There are few empirical studies on supply chain finance, and those that do exist are often case studies (Chakku et al., 2019; Gelsomino et al., 2016). Wuttke et al. (2013) conducted 40 interviews to learn more about the supply chain financing procedures used by eight European companies. To ascertain if supply chain finance strategies result in improved supply chain performance, they looked at how these companies manage upstream cash flows. They claim that by engaging in supply chain finance operations based on transaction cost economics, managers can increase working capital and lower risk.

Blackman et al.'s (2013) case study on Motorola's supply chain finance processes reveals cost reductions for all stakeholders by working together to manage financial flows with consumers, suppliers, and banks. Similar to this, Mathis and Cavinato (2010) use the case study approach to examine the supply chain management tactics used by Toyota and Zara and show that both businesses cut costs by utilizing supply chain finance strategies and practices. Martin and Hoffmann (2017) conducted ten expert interviews and a survey of 62 Swiss companies to learn the motivations behind the use of financial service providers in supply chain finance practices. They came to the conclusion that there is a structured need for companies to be matched with financial service providers' service offerings.

The benefits of supply chain financing on cost savings and improved supply chain performance are shown in these case studies, but it is not obvious how supply chain finance affects supply chain performance. Xu et al. (2018) conducted a thorough literature study of supply chain finance publications and did find six recent empirical investigations. None of those articles look into the function supply chain finance plays in the context of a supply chain. The literature that is now available, in particular, fails to recognize supply chain finance as a crucial element of a thorough supply chain management plan.

2.4.2 Digitalization and MSME Public Procurement Involvement

Digital capabilities are skills and specific technologies such as social media or mobile, as well as the analytic skills to drive value from big data (Westerman, Bonnet, & McAfee, 2012). These capabilities enhance process improvement and relationships, which facilitate digital business transformations toward operational and strategic fields (Schwarz, Kalika, Kefi, & Schwarz, 2010). From this perspective, micro and small enterprises that fail to build these important capabilities may be incapable to develop disruptive technologies against certain barriers that may impede them from participating in public procurement involvement. Studies have shown that firms who are technologically inclined to adopt digital tools and capabilities in this dynamic business environment are more capable of gaining a competitive urge over rival firms (Alexandrova et al., 2020; Correia Pereira & García Medina, 2014; Marx et al., 2021). These same skills and capabilities are required by micro and small enterprises for them to compete for public procurement contracts.

It should be understood that the introduction of digital technologies leads to greater changes in the working environment in organizations (Scotto et al., 2017). Despite its new opportunities digitalization raises questions about how organizations will adapt and grow in this new space. Organizational culture has been suggested as a factor that may affect the effectiveness of a firm implementing digital technologies, many organizations are aware that they need to transform their culture in order to be able to achieve digital objectives. However, few studies have considered organizational culture when investigating digital transformation (Duerr et al., 2018). For instance, Versendaal and Brinkkemper (2003) perceived e-procurement as a particular area of e-business covering both internal processes as well as B2B processes.

2.4.2 Barriers to MSME Public Procurement Participation

Laurie and Gabriela (2012) make the argument that, while MSMEs participating in the public supply market benefits the purchasing organization and the economy as a whole, the owners of these businesses have consistently expressed dissatisfaction with the public procurement culture and processes and prefer to supply the private sector (Loader, 2013). SMEs around the world, like those in the UK, continue to experience difficulties in participating in public procurement. Supplier selection through pre-qualification is one of the first barriers MSMEs encounter, according to (Kath, Chris, & Huw, 2009). Other issues include administrative needs for required bidding processes and MSMEs' perceived inability to perform. Moving to East Africa, where procurement accounts for up to 34.76 percent of GDP, the government's purchasing power is huge and can have a good impact on economic systems by ensuring SMEs are sufficiently represented (Obanda, 2010).

MSME procurement issues have been highlighted in a previous study, and the bulk of them are resource-related (GHK, 2010; Karjalainen & Kemppainen, 2008; URT, 2012).

Akenroye and Aju (2013) in their study of barriers to SME participation in Public Procurement in Nigeria revealed that information obscurity and incapability are the foremost barriers facing SMEs' participation in PP. They reiterated biased evaluation criteria and unfavorable payment terms affect MSMEs' participation in PP. A study carried out by Mastercard Foundation in Kenya found that despite ambitious policies, there are four significant barriers that still stand in the way of MSMEs' participation in PP. Lack of access and awareness of government processes, procurement corruption,

labor-intensive/manual processes, and delayed payment (Mastercard Foundation Kenya, 2022).

These issues impede MSMEs' ability to win contracts and get money to expand their businesses. As a result of the preceding, it is clear that efforts to encourage the SME sector to participate actively in public procurement have generally failed, resulting in limited involvement in the market (Woldie et al., 2012).

2.5 Summary of Knowledge Gaps

This study attempted to describe the catalytic role of supply chain finance and digitalization in improving public procurement participation among MSMEs in Nairobi, Kenya. As discussed in the introductory section of the study, MSMEs continue to struggle with the challenge of their survival due to stiff competition in the market, standard quality of goods and services, and lack of access to capital for their expansion which contributes to their failures.

Supply chain finance can be one of those dynamic measures that can spark growth and enable firms to break the status quo and leapfrog toward superior performance. Thus, the study sheds light on the significance of supply chain finance in MSMEs by reviewing the past and recent relevant literature that discusses the linkage between supply chain finance and financial performance. It also proposes a theoretical framework where the role of digitalization of procurement activities affects the public procurement involvement among MSMEs in Nairobi, Kenya. Micro, small, and medium firms' propensity and ability to succeed depends upon the strategic supplier partnership, customer relationship, information sharing, and information quality. Entrepreneurs are largely responsible for shaping the culture of their firms through the positive SCF practices they implement in the firm. There is a plethora of factors precluding MSMEs with regard to their participation in public procurement. The question then is, how are MSMEs able to get involved in public procurement through supply chain finance solutions, digitalization, and barriers to public procurement participation.

2.6 Conceptual Framework

The conceptual framework describes the relationship between the research variables. The Independent variables are supply chain finance solutions, digitalization, and barriers to public procurement involvement while the dependent variable is public procurement participation.

2.6.1 Digitalization

Digitalization has been at the forefront of many businesses and has been recognized as the most important advancement that is transforming society and industry (Leviäkangas, et al., 2016). Hajishirzi et al. (2022) spell out the advantages firms enjoy when they adopt digital transformation strategies. It has been demonstrated that digitalization affects employment rates, and quality of life, and helps citizens to access public services (Parviainen et al., 2017). The term "digitalization" refers to the numerous multifaceted processes and phenomena that arise with the adoption and use of modern technologies in larger personal, professional, and societal contexts (Legner et al.,2017). Clerck (2017) also defines digitalization as “the use of digital technologies and of data in order to create revenue, improve business, replace/transform business processes and create an environment for digital business, whereby digital information is at the core.”

2.6.2 Digital Capability

The degree of acceptance of digital technologies and products reflects the ability of an individual, a firm, or a country to obtain the benefits from the digitalization of the global economy. People require digital capabilities not just “to be able to participate and benefit from digital opportunities, but also to alleviate possible risks (Vuorikari et al 2016). Even though most organizations have invested in digital processes, they’re getting less value than expected because organizations are having a tough time analyzing the opportunities and challenges created by the internet (Kieran O’hea., 2021). In addressing this obstacle, organizations need to be supported in order to understand, measure, and improve their digital capability (Kieran O’hea., 2021) and some of the ways to achieve this is through identifying new digital opportunities, acquiring new digital technologies and developing innovative products/services/process using digital technology.

Table 2.3 Measurement items for Digital Capability

Composite digital measures	Author & year
Acquiring important digital technologies	Zhou and Wu (2010)
Identifying new digital opportunities	Zhou and Wu (2010)
Responding to digital transformation	Zhou and Wu (2010)
Mastering the state-of-the-art digital technologies	Zhou and Wu (2010)
Developing innovative products/service/process	Zhou and Wu (2010)

using digital technology.	
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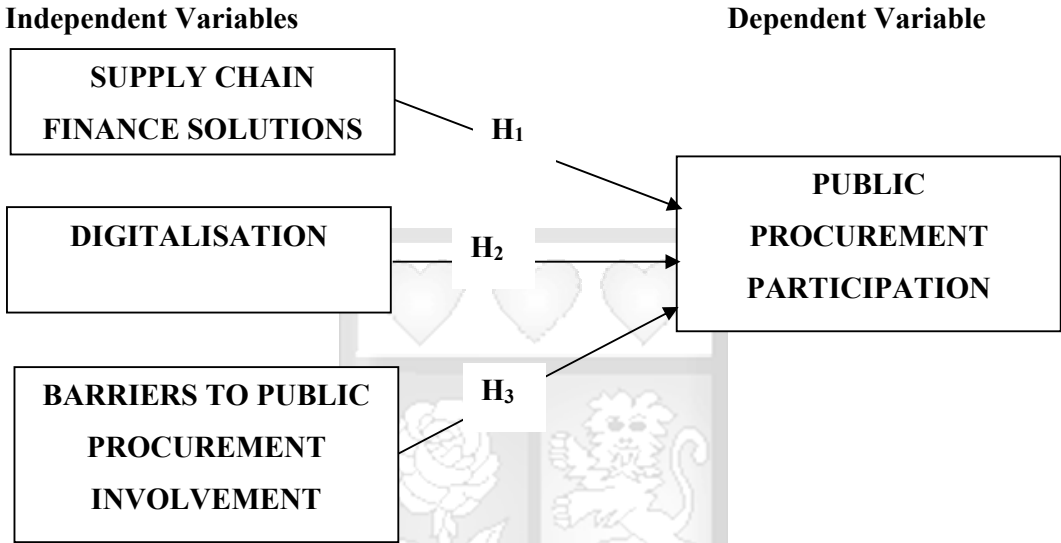
2.6.3 Digital Transformation

One of the first to refer to the idea of digital transformation was Patel and McCarthy (2000). However, they did not conceptualize the term as well. Only a few studies have so far attempted to define the idea. Hess (2016) defines Digital transformation as “the changes that occur by imposing information technologies as a way of partially automizing tasks”. Parviainen et al. (2017) also define digital transformation as “changes that occur in organizational structures, job functions, and product offerings generated by the adoption of digital technologies”. As reported by Henriette et al. (2015), a digital transformation project entails putting digital capabilities in place to enable business model changes that have an influence on the entire organization, including operational processes, resources, internal users, and external users. According to Carcary et al. (2016), successful digital transformation necessitates reliability in a particular sector and the unique demands of that business. One thing that becomes clear is that the use of digital technologies has resulted in fundamental "radical" shifts rather than slow, incremental ones (Toolboom, 2016). According to several studies, digital technologies are becoming more integrated into our daily lives (Aral, Dellarocas, & Godes, 2013; Oestreicher-Singer & Zalmanson, 2013). Generally, a company goes through a digital transformation when it begins to employ digital technology to construct a new, digitally-enabled business model in order to increase and capture more value for the company (Kane et al. 2019; Liu et al. 2011)

Table 2.4 Definition of Digital Transformation

Author	Definition
Brennen and Kreiss, (2016); Unruh and Kiron (2017)	Defined as the process that is used to restructure economies, institutions, and society on a system level.
Bloching et al. (2015)	The continuous interconnection of all business sectors and the actor-side adaptation to the requirements of the digital economy.
Unruh and Kiron (2017)	The systems-level restructuring of economies, institutions, and society occurs through digital diffusion.
Radke et al. (2022)	Refers to the increase of digitalized business processes in an enterprise or supply chain resulting in the adoption and

	integration of information, communication, and operational technologies to create new and enhanced digitally enabled operations.
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Source: Author's Construct (2022)

- Digitalization variables**
- DIGITAL CAPABILITIES
 - DIGITAL TRANSFORMATION

- Supply chain finance variables**
- Online Supply Chain platforms
 - Inventory pledge financing
 - Third party logistics financing
 - Warehousing financing
 - Bank Guarantees

- Barriers Variables**
- Size of Government contract
 - Information Obscurity
 - Delayed payment
 - Procurement corruption
 - Complex tendering procedures

- PP participation variables**
- Having PP contracts
 - Bidding for PP tenders
 - Involved in PP planning and training

Figure 2.2: Conceptual Framework of the Study

2.6.4 Conceptualization and hypothesis development

2.6.4.1 Supply Chain Finance and Public Procurement Participation

There are few empirical studies on supply chain finance, and those that do exist are often case studies (Gelsomino, et al. 2016, Chakuu et al. 2017). Wuttke et al. (2013) conducted 40 interviews to learn more about the supply chain financing procedures used by eight European companies. To ascertain if supply chain finance strategies result in improved supply chain performance, they looked at how these companies manage upstream cash flows. They claim that by engaging in supply chain finance operations based on transaction cost economics, managers can increase working capital and lower risk.

Blackman et al.'s (2013) case study on Motorola's supply chain finance processes reveals cost reductions for all stakeholders by working together to manage financial flows with consumers, suppliers, and banks. Similarly, to this, Mathis and Cavinato (2010) use the case study approach to examine the supply chain management tactics used by Toyota and Zara and show that both businesses cut costs by utilizing supply chain finance strategies and practices. The benefits of supply chain financing on cost savings and improved supply chain performance are shown in these case studies, but it is not obvious how supply chain finance affects supply chain performance. Xu et al. (2018) conducted a thorough literature study of supply chain finance publications and did find six recent empirical investigations. None of those articles look into the function supply chain finance plays in the context of a supply chain. The literature that is now available, in particular, fails to recognize supply chain finance as a crucial element of a thorough supply chain management plan. In view of this, the first hypothesis is posited as follows;

H1: Supply chain finance has a positive and significant effect on public procurement participation

2.6.4.2 Digitalization and Public Procurement Participation

Transformation of public procurement may adapt its perception of a purely administrative function to a more strategic one. Digital payments simplify and speed up financial

transactions, increasing operational efficiency. Many digital payment providers offer intuitive platforms that easily integrate with all your existing systems. One can connect to banks, vendors, employees, and customers into one seamless business ecosystem to streamline financial operations (Kumar & Chaubey, 2017). Procurement 4.0 is a revolution driven by increasing digitalization, the use of cloud technologies and organizational process automation that transform traditional operations of public institutions and the procurement function itself. It will establish an advantage by leveraging big data analytics for better decision-making, fostering innovation, and data integration to improve public procurement user experience and supplier performance (Bienhaus & Haddud, 2018). This implies that digitalization (in terms of e-procurement) has an influence on the public procurement participation of MSMEs. In view of this, the second hypothesis is posited as follows;

H2: Digitalization (E-procurement) has a positive and significant effect on public procurement participation

2.6.4.3 Barriers to Public Procurement Involvement and Public Procurement Participation

The involvement of small businesses in public procurement can serve these purposes. For example, by contracting with small businesses the government gains increased innovativeness, encourages entrepreneurship, and contributes to job creation and economic development (Reed et al., 2004). Small businesses also tend to have higher growth rates than large firms (Denes, 1997). Thus, by buying from SMEs the public sector can positively influence local economies, regional regeneration, and local sourcing (Walker, 2006 in Zheng et al., 2006). MSMEs are also seen as a source of flexible personalized services (Zheng et al., 2006).

Previous literature has presented obstacles to the low level of SME involvement in public procurement in three categories: the bidding process, contract sizes, and inadequate information sharing. First, the bidding process regulated by procurement legislation is rigorous and resource-consuming by nature, and even insignificant deviations from the requirements may lead to the rejection of bids. Fee et al. (2002) also pointed out other problems such as burdensome documentation, the time and cost involved in preparing offers, and the specification of standards. Second, Bovis (1998) claims that the relatively large size of contracts, the result of contract bundling driven by efforts to reduce

administrative work (Clark & Moutray, 2004), inhibits SME involvement. SMEs are not able to bid for these large contracts as they do not have adequate supply capacity. Thirdly, inadequate access to relevant information is argued to be by far the largest barrier to SME involvement in public procurement (Fee et al., 2002). SMEs have, for example, difficulties in getting information on forthcoming contracts (Bovis, 1998). To sum up, the obstacles to the low level of SME involvement in public procurement focus on inadequate resources, whether they are inadequate resources in searching for information on upcoming contracts in preparing the bids, or in supplying the needed quantity of products, services, or work. Hence, the last hypothesis is posited as follows;

H3: Barriers to Public Procurement Involvement have a negative effect on public procurement participation

2.7 Operationalization and Measurement of Variables

This sub-section identifies and operationalizes the key variables independent and dependent variables of the study. The operationalization is based on how the variable has been used in the current study.

Table 2.5: Operationalization and Measurement of Variables continued

Variable	Indicators	Source	Data tool	Collection	Data Analysis
Supply Chain Finance	<ul style="list-style-type: none"> • Inventory finance • Capital Flow • Online SCF platforms 	Zhang (2015) Mark & pillar (2018)	Questionnaire form 7-likert scale questions	in	Descriptive and inferential analysis
Digitalization	<ul style="list-style-type: none"> • E-procurement (speed of transaction, ease, reliability, cost, etc.) • Digital capability • Digital Transformation 	Choi (2013); Unruh and Kiron (2017); Zhou & Kiron (2010)	Questionnaire form of close-ended and 7-Likert scale questions	in	Descriptive and inferential analysis
Barriers to Public Procurement Involvement	<ul style="list-style-type: none"> • Bidding Process • Contract sizes and inadequate • Information sharing 	Di Mauro, Ancarani, & Hartley, 2020	Questionnaire form of close-ended and 7-Likert scale questions	in	Descriptive and inferential analysis
Public Procurement	<ul style="list-style-type: none"> • Bidding Process • PP opportunities 	Di Mauro, Ancarani, & Hartley, 2020	Questionnaire form of close-ended and 7-		Descriptive and inferential analysis

Participation	• PP training and development	Likert questions	scale
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2.8 Chapter Summary

The chapter has discussed the literature review beginning with the concepts in public procurement, theoretical foundations, and concepts with regard to supply chain finance, digitalization, and barriers to MSMEs' participation in PP. Furthermore, the operationalization of variables, conceptual framework, and hypothesis were developed. The next chapter discussed the research methodology of the study.



CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This section presents the techniques and procedures that guided the conduct of the study. Specifically, it provides information on the research design, study area, targeted population, data sources, and collection methods, sampling procedure, means of data analysis, and ethical considerations among other things.

3.1 Research Design

Per Saunders et al. (2011), a research design is a broad description of the procedure used in finding answers to the research questions. Thus, it essentially covers the research philosophy, strategy, time horizon, and choices among several other possible considerations. In the view of Bhattacharjee (2012), a research design is the “blueprint” for empirical research which aims at finding answers to the research questions or testing the study’s hypothesis. It should specify at least the following processes (1) the data collection process, (2) the instrument development process, and (3) the sampling process.

Kothari et al. (2014), posit that the research design arranges the conditions for collecting and analyzing the data in the most efficient way to answer the study’s objectives. The design answers the questions related to why the study is being conducted, where the study will be conducted, the type and means of data collection, and the sample size and technique for selecting the sample among other relevant considerations. Similarly, Christensen et al., (2016) argue that the components of research design are the research strategy, sampling strategy, choice of research tools, and choice of statistical techniques. Generally, the authors agree on the purpose of the research design as the “blueprint” for carrying out the study. The point of difference is with respect to the components of the research design. Saunders et al. (2016) make a distinction between research “design” and “tactics”. While design concerns the strategic plan, the tactics involve “finer details” such as data collection and analysis procedures. This distinction has not been recognized by the other authors who have included the “finer details” in the components of the research design. This study adopts the perspective of Saunders et al. (2016).

Thus, section 3.1 of this covers the research design while the tactics are covered in subsequent sections.

3.1.1 Research Philosophy

Saunders et al. (2016) believe that research philosophy is an over-arching term that describes how knowledge is developed and the nature of that knowledge. Walliman (2011) posits that the research philosophy clearly shows the researcher's position and the social phenomena' status. Saunders et al., (2016) argued that the philosophical position of a researcher will affect the research strategy adopted and the subsequent choices for completing the study. Four main philosophical positions have been identified in the literature. These are positivism, realism, interpretivism, and pragmatism. Positivism hails from the views of French philosopher August Comte. Positivism argues that knowledge creation or scientific knowledge should be limited to what can be observed and measured directly. Thus, positivist approaches in research rely on theories and hypotheses that can be tested (Walliman, 2011). Positivism has come under a lot of criticism in social science research because human thoughts and emotions through central to social science research, yet cannot be directly measured, and will not qualify for social science research according to positivists.

Instead of relying on rigid recording and measurement of the phenomena, Interpretivism calls for the subjective interpretation of the participants involved, such as by interviewing different participants and reconciling differences among their responses using their own subjective perspectives. Thus, using this approach, the researcher seeks to contextualize the findings and analysis to fit the research environment. As summed up by Saunders et al., (2016), Interpretivism advocates that the researcher must understand the differences between humans in their role as social actors. Realism is similar to positivism (Saunders et al., 2016) in that it calls for a scientific method of inquiry. Realism posits that there exists a 'truth' in every situation and this exists independent of the human mind. Pragmatism argues that the most important determinant of the research philosophy adopted is the research question, arguing that it is possible to work within both positivist and interpretivism positions. It applies a practical approach, integrating different perspectives to help collect and interpret data. Pragmatism essentially adopts a contingency approach which determines the best philosophy to use in any given situation.

Having studied these philosophies, the researcher adopted the positivist approach for this study. This is because the study intends to accurately determine the interrelationships among the variables and the need to develop a highly reliable measurement instrument and process as well as rigorous testing of raised hypothesis. All of these play into the positivists' advocacy of the "scientific" method.

3.2 Population of the Study

The population describes the set of cases, objects, or observations of interest to the research, and is based on which inferences are made (Cooper & Schindler, 2014). The cases in a population may be people, objects, sites, or any such observable collection. The population of interest comprised pre-qualified MSMEs registered under Public Procurement and Regulatory Authority (PPRA) in Nairobi County. According to PPRA, there are 32422 MSMEs in Nairobi County. However, the target population was MSMEs that participated in public procurement, such as youth groups, women groups, and people with disabilities (PWDs).

3.3 Sampling Technique

According to Erik and Marko (2011), sampling is the process of selecting a number of individuals for a study in such a way that the individual represents a true representation of the group from which they are selected. The sampling method is the procedure by which a researcher selects part of the population for a study (Kombo & Tromp, 2014). At a general level, sampling techniques are either probability-based or non-probability based. Zickmund et al., (2010) provided a distinction between the two in the sense that probability sampling techniques "offer each element in the sampling frame an equal chance of being selected as part of the sample" whereas non-probability sampling techniques "are often subjective and based on researcher preferences instead of equal chances of selection. For most studies, the probability sampling techniques have been identified as the most reliable and unbiased (Cooper & Schindler, 2012). However, in this study, a multistage sampling procedure was adopted. A systematic sampling procedure was used to select 250 suppliers. Subsequently, simple random sampling was used to arrive at a sample of 100.

3.4 Data Collection

The study required primary data. Creswell (2009) believes that instrumentation generally denotes the whole "process of data collection". It involves not only the selection or design

of the instrument but also the procedures and conditions under which the instruments were administered. Primary data refers to the type of data directly collected by the researcher (Saunders *et al.*, 2016). This was the main source of data for the study and a designed questionnaire was the main data collection instrument. Initially, the researcher sent out Google forms to the respondents but few responses were recorded. This precipitated the idea of sending the questionnaire to the respondents' offices and collecting them a few days after dropping them in their offices. This rather yielded a good response.

3.4.1 Questionnaire

Questionnaires were designed to collect primary data for the study. According to Davies and Dodd (2002), a questionnaire is a common instrument for observing data beyond the physical reach of the observer. According to Creswell and Miller (2000), a questionnaire therefore may be open or closed questions. This study used closed questions. In designing the questionnaire, a seven-point Likert-type scale was used in order to provide the extent of the respondents' opinions on the effects of supply chain finance, digitalization, and barriers to public procurement involvement of MSMEs on public procurement participation. Questionnaires were administered to the procurement officers or owners of MSMEs in Nairobi County.

3.5 Data Quality

One of the most important research issues is ensuring reliability and validity. The researcher observed data quality by ensuring that the techniques and reports used are reliable to produce consistent reports when used by other researchers.

3.5.1 Reliability of Instruments

Joppe (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. Joppe (2000) again stated that study reliability is assured if the results can be reproduced under a similar methodology, then the research instrument is considered to be reliable. According to Bashir *et al.* (2008), validity refers to the extent to which a test measures what it is supposed to measure and the extent to which its truthfulness, accuracy, authenticity, genuineness, or soundness, whether the means of measurement are accurate and whether they are measuring what they are intended to measure. A Cronbach Alpha (reliability) test

was run using the SPSS statistical tool to verify that this research meets the criteria for reliability.

The main objective of the study was to determine how supply chain finance solutions, digital capabilities, and challenges/barriers impact micro and small enterprises' participation in public procurement markets. This was done by posing some questions to the respondents in the questionnaire in order to gather data that would meet this objective.

Prior to estimating the theoretical framework developed for the study, it became necessary to assess the suitability of the items used in measuring the constructs. In doing this reliability test using Cronbach's Alpha was adopted. In all, four constructs were assessed. In checking for reliability of the measures, Cronbach alpha was used to verify the internal consistency among the measures (Pallant, 2007). This was performed in SPSS version IBM 20. The results shown in table 3.1 indicate alpha values ranging from .787 to .962. This implies that all items for the four constructs passed the initial test of reliability as they were far above the recommended threshold of .70 (Nunnally, 1978). The summary of results could be seen from Table 3.1.

Table 3.1: Reliability Test Results

Construct	Number of items	Alpha value
1. Supply Chain Finance Solutions	5	.868
2. Digitalization capabilities	6	.787
3. Barriers to MSMEs Public Procurement Involvement	7	.811
4. MSMEs Public Procurement Involvement	4	.962

Source: Field study (2023)

3.5.2 Validity of Instruments

Validity refers to how well an empirical measure accurately captures the essence of the issue being studied (Saunders et al., 2016). According to Cooper and Shindler (2013), validity is the degree to which the sample of test items represents the content the test is designed to measure. Numerous techniques can be used to establish validity, such as face validity, concurrent validity, predictive validity, concept validity, and convergence validity (Earl-Babbie, 2013). For this study, face validity was employed to ensure that the

questions posed to respondents to measure each variable was effective in terms of its stated aims.

3.6 Data Analysis

The collected data was in quantitative form, whereas descriptive and inferential statistics were used in analyzing the data quantitatively. The quantitative data in the descriptive form included mean, standard deviation, frequency, and percentages. Inferential statistics in the form of multiple regression analysis were also used. Analysis of data was carried out by employing SPSS version 25 and the results presented in form of tables. A multiple regression model was used in establishing the relationship among the variables.

The regression model was as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

Where:

Y = Public Procurement Participation

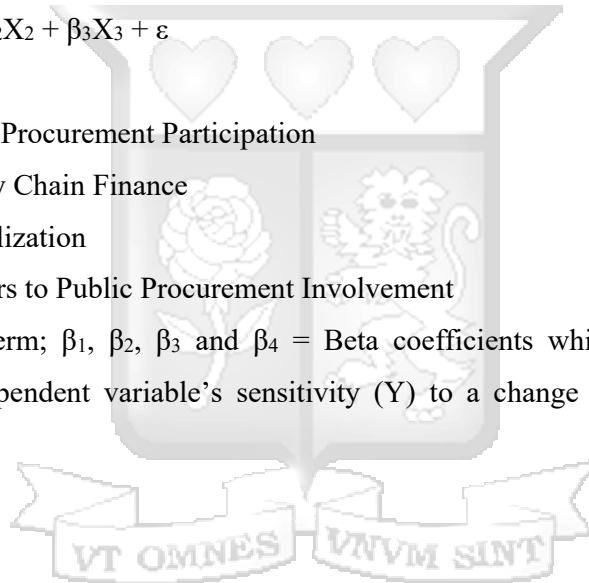
X_1 = Supply Chain Finance

X_2 = Digitalization

X_3 = Barriers to Public Procurement Involvement

β_0 = Constant Term; β_1 , β_2 , β_3 and β_4 = Beta coefficients which was employed for measuring the dependent variable's sensitivity (Y) to a change in a unit of predictor variables.

ε = Error term



3.7 Pilot Study

The questionnaire was pre-tested to evaluate its content and general physical appearance (Christensen et al, 2015). In pre-testing a small sample of respondents was selected to test and evaluate the questionnaire to improve the questionnaire by identifying, correcting, and/or eliminating items that might cause potential problems (Christensen et al., 2015). A group of 30 suppliers in number from the Kenya Institute of supplies management were requested to respond to the items in the questionnaire. The suppliers were also requested to comment on all aspects of the questionnaire including the relevance of the questions, the readability, and understanding of the items, the suitability of terminologies used, the sequence of the questions, the length and layout of the questionnaire as well as furnish

any other suggestions which in their view might improve the questionnaire. The responses from the respondents of the pilot study really improved the quality of the questionnaire.

3.7 Ethical Considerations

For such a study, there was a need to emphasize ethical concerns relating to survey studies at the firm level. As such, the research was not forced on unwilling MSMEs but rather involved those who readily agreed to participate. This was confirmed by obtaining permission from Strathmore University Ethics Review Committee and a permit from NACOSTI to authorize the administration of the questionnaire. The letters were shown or given to the participants and explained the intent of the study to them. The consent and permission of respondents to participate in the study were sought by engaging with them via numerous mobile phone calls. Their total confidentiality regarding their responses and business was guaranteed. Therefore, the data were handled and used primarily for analysis purposes as part of ethical consideration, since it was made clear to the respondents prior to data collection.

3.8 Chapter Summary

This chapter presented the research methodology which drove the analysis of the study. The study adopted a descriptive research design. The unit of analysis was owners/managers of selected MSMEs in Nairobi Country in Kenya. The study targeted MSMEs, 100 of which were then selected through simple random, and systematic sampling techniques. The study used structured close-ended questions to collect the primary data. The analysis was done quantitatively by employing inferential and descriptive statistics. The presentation of data was done through frequencies, mean, standard deviation, and percentages and presented in the form of tables as well as multiple regression analysis.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis of the field data collected and interpreted to answer the research questions for this study. The findings were discussed under the following headings in line with the objectives of the study: Demographics, descriptive statistics of variables, reliability test, a test of the model, model assessment, and hypothesis testing and discussions. The results were presented in the form of descriptive tables and other statistical tables using Statistical Package for Social Sciences (SPSS) version 25.

4.2 Response Rate

Out of the one hundred (100) questionnaires administered, 84 were returned representing an 84% response rate. The response rate can be described as good as it is over three-thirds of the questionnaires administered and implies that the respondents found the questions quite convenient and easy to interpret. However, a few sub-questions were not answered and this may have been due to the respondents not being sure of the answer to give or having no idea of the question asked. In all, 16 questionnaires, representing 16% were returned unanswered. The non-response was due to the following problems: time limit, ineligibility to respond, and inability to locate respondents.

4.3 Respondents' Demographics

The respondents for the study were gathered from owners, managers, partners, and workers of micro, small, and medium enterprises (MSMEs) in Nairobi County in Kenya. The details of their demographic characteristics are shown in Table 4.1 below;

Table 4.1: Respondents' Demographic Characteristics

Variables	Categories	f	%
Gender of Respondents	Male	54	64.3%
	Female	30	35.7%
	Total	84	100.0%
Age of Respondents	20 – 30 years	60	71.4%
	31 – 40 years	18	21.4%
	51 years and above	6	7.1%
	Total	84	100.0%
Educational Level of Respondents	College	6	7.1%
	Degree	54	64.3%
	Masters	24	28.6%
	Total	84	100.0%
Position of respondent in company	Owner	60	71.4%
	Manager	12	14.3%
	Partner	6	7.1%
	Worker	6	7.1%

Total	84	100.0%
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Source: Field Work, 2023

From Table 4.1, it could be seen that the MSMEs that participated in the study were dominated by males at the helm of affairs with 64.3% (n=64.3%) being males and the remaining 35.7% (n=30) being females. With regards to their ages, it was realized that most of the respondents were between 20 – 30 years (n=60, 71.4%), followed by those from 31 – 40 years represented by 21.4% (n=18) of responses and the remaining 7.1% (n=6) being above 40 years. This implies that majority of SMEs found in the Nairobi County are quite young and energetic.

For their educational background, it could be seen that most of the respondents were Degree certificate holders with 64.3% (n=54) of responses, followed by the next 28.6% (n=24) who had Masters certificates and the remaining 7.1% (n=6) of the respondents who had Diploma certificates.

Finally, with positions held at the respective MSMEs, majority (71.4%, n=60) of them were the owners, followed by 14.3% (n=12) who were managers with the remaining 12.2% who were either partners or workers.

Hence, it could be concluded that the respondents were knowledgeable about the subject matter of the study and were able to understand the questionnaires posed to them to ensure validity of the study.

4.4 Firm Characteristics

The study took profile on some basic characteristics of the micro, small and medium enterprises (MSMEs) that participated in the study. The details of their firm characteristics are shown in Table 4.2 below;

Table 4.2 Firm Characteristics

Variable	Min	Max	Mean	Std. Dev
Firm Age	.5	25.0	7.46	5.917
Firm Size	1	145	18.21	36.079
	Categories		Frequency	%
Firm Participation in open public tendering opportunities	Never		48	57.1
	Sometimes		36	42.9
	Total		84	100.0
Number of Public Tender Calls (Bids)	Never		12	14.3
	1 - 5 times		24	28.6

6 – 10 times	6	7.1
More than 10 times	42	50.0
Total	84	100.0

Source: Field Work, 2023

With firm characteristics as seen in Table 4.2, the mean firm size (number of employees) was 18.21 employees with the minimum being 1 and a maximum of 145, whereas the firm age (number of years of operation) was 7.46 years of respective firms with the least been 0.5 years and the maximum has been 25 years.

Also, the MSMEs were enquired if they participated in open public tendering opportunities and it was revealed that just a few sometimes participated (n=36, 42.9%) and the majority (48, 57.1%) who have never participated in open public tendering opportunities.

Finally, they were asked about the number of public tender calls (bids) they have responded to and the results revealed that the majority (50%) have done so over 10 times, followed by the next 28.6 (n=24) who have participated between 1 – 5 times, followed by the next 14.3% (n=12) who had never participated in any public tender calls. However, about 7.1% (n=6) of SMEs have participated in public tender calls (bids).

Hence, it could be concluded that the SME firms' characteristics were adequate for the respondents to be able to provide the necessary responses required for the study to ensure the validity of the study.

4.4 Supply Chain Finance

The first objective of the study was to examine the relationship between supply chain finance and public procurement participation of micro small and medium enterprises in Nairobi County, Kenya. The study identified some Supply Chain Finance solutions adopted from extant studies and posed to the respondents to express their opinions. A 7-point scale was employed, measuring “1=strongly disagree” through to “4=neither agree nor disagree” to “7=strongly agree” for each of these items.

The results obtained from this evaluation are shown in Table 4.3 below;

Table 4.3: Supply Chain Finance Solutions

Measurement Items	Min	Max	Mean	Std. Dev
1. Supply chain finance improves the financial performance and market value of the firm	1	7	6.14	1.514
2. Supply chain finance increases the capital flow coordination in the supply chain.	1	7	6.07	1.589
3. Supply chain finance brings a high level of overall supply chain efficiency.	1	7	5.86	1.607
4. Supply chain finance reduces the risk of bankruptcy	2	7	5.64	1.808
5. Supply chain finance gives my firm extended payment terms	2	7	5.93	1.720

Source: Field Work, 2023

From Table 4.3, 5 items were used to measure Supply Chain Finance Solutions (SCFS) using a 7-point Likert Scale with 1=Strongly Disagree, 4=Indifferent, and 7=Strongly Agree. Among the 5 items, the highest mean was obtained from the first item with mean values of 6.14 and standard deviation of 1.514 which showed absolute agreement. Almost all other items measured more than 5.0 implying agreement. This shows that respondents indicated that Supply Chain Finance Solutions is highly employed by MSMEs in the Nairobi County in Kenya.

When the respondents were further asked to indicate some source of funds, they have access to help them respond to public procurement calls, some of the responses include Hustler Fund, Uwezo Fund, local SACCO, bank guarantees, short term loans to finance inventories, third party logistics financing, colleague suppliers together mortgage our goods in warehouses to secure loans as well as use local purchase order financing as a source of funding. There were varied extents of usage of these funds from the responses.

4.5 Digitalization

The second objective of the study was to determine the impact of digitalization on public procurement participation by MSMEs in Nairobi County, Kenya. The study identified some

digital tools indicators adopted from extant studies and posed to the respondents to express their opinions. A 7-point scale was employed, measuring “1=strongly disagree” through to “4=neither agree nor disagree” to “7=strongly agree” for each of these items.

The results obtained from this evaluation are shown in Tables 4.4 below;

Table 4.4: Digitalization

Measurement Items	Min	Max	Mean	Std. Dev
1. We are committed to using digital technologies	1	7	6.07	1.802
2. We develop innovative products/services/processes using digital technology	2	7	6.00	1.742
3. We have internet access with high speed	2	7	6.21	1.432
4. We store all data digitally	1	7	5.71	1.955
5. Our company provides access to a variety of digital devices	1	7	5.36	1.886
6. Our IT integrates the most current digital offerings by third parties like digital payments, customer relationship management systems, and e-procurement.	1	7	5.64	1.847

Source: Field Survey, 2023

From Table 4.4, 6 items were used to measure Digitalization using a 7-point Likert Scale with 1=Strongly Disagree, 4=Indifferent, and 7=Strongly Agree. Among the 6 items, the highest mean was obtained from the third item with mean values of 6.21 and a standard deviation of 1.432 which showed absolute agreement. All other items measured more than 5.0 implying agreement. This shows that respondents indicated that Digitalization tools are employed by MSMEs in Nairobi County in Kenya.

When the respondents were further asked to indicate some information technology or digital tools, they employ to help them respond to public procurement calls, some of the responses include social media, the internet, company websites, mobile devices (smartphones, tablets), e-procurement software (e.g., IFMIS), inventory management software as well as financial management software. There were varied extents of usage of these funds from the responses.

4.6 Barriers to MSME Public Procurement Participation

The third objective of the study was to determine and investigate the relationship between barriers faced by micro and small enterprises and their participation in public procurement in Nairobi County, Kenya. The study identified some barriers that impede MSME public procurement participation from extant studies and posed to the respondents to express their opinions. A 7-point scale was employed, measuring “1=strongly disagree” through to “4=neither agree nor disagree” to “7=strongly agree” for each of these items. The results obtained from this evaluation are shown in Tables 4.5 below;

Table 4.5: Barriers to MSME Public Procurement Participation

Barriers	Min	Max	Mean	Std. Dev
1. There are strict qualification requirements that reduce MSMEs’ participation in public procurement	5	7	6.36	.816
2. There is difficulty in accessing information about procurement opportunities which reduces MSMEs’ participation in public procurement.	3	7	6.00	1.141
3. There are high costs related to the bidding process to reduce MSMEs’ participation in public procurement	3	7	5.93	1.170
4. Large contract sizes reduce MSMEs’ participation in public procurement	4	7	6.07	.967
5. Award based on lowest price reduces MSMEs’ participation in public procurement	1	7	5.69	1.782
6. Delayed payment affects the opportunity of looking for government tenders	4	7	6.29	1.104
7. Corruption affects your company winning government contracts	3	7	5.86	1.363

Source: Field Survey, 2023

From Table 4.5, 7 items were used to measure barriers to MSME public procurement participation using a 7-point Likert Scale with 1=Strongly Disagree, 4=Indifferent, and 7=Strongly Agree. Among the 6 items, the highest mean was obtained from the first item with mean values of 6.36 and a standard deviation of .816 which showed absolute agreement. All other items measured more than 5.0 implying agreement. This shows that respondents indicated that there were some challenges that mitigate micro and small enterprises and their participation in public procurement in Nairobi County in Kenya.

4.7 MSME Public Procurement Participation

The dependent variable of the study was MSME public procurement involvement. The study adopted the indicators of MSME Public Procurement Involvement from the study

of Di Mauro, Ancarani, and Hartley (2020). A 7-point scale was employed, measuring “1=strongly disagree” through to “4=neither agree nor disagree” to “7=strongly agree” for each of these items.

The results obtained from the evaluation of MSME Public Procurement Participation are shown in Tables 4.6 below;

Table 4.6: MSME Public Procurement Participation

Measurement Items	Min	Max	Mean	Std. Dev
1. Our MSME has been able to seek public procurement opportunities	1	7	5.71	2.063
2. Our MSME involve in procurement planning	1	7	4.07	2.264
3. Our MSME has submitted a bid in a public tender call/announcement	2	7	6.00	1.261
4. Our MSME involve in public procurement training and development	1	7	5.00	1.901

Source: Field Survey, 2023

From Table 4.6, 4 items were used to measure MSME Public Procurement Participation using a 7-point Likert Scale with 1=Strongly Disagree, 4=Indifferent, and 7=Strongly Agree. Among the 4 items, the highest mean was obtained from the third item with mean values of 6.00 and a standard deviation of 1.261 which showed absolute agreement. All other items also measured more than 5.0 implying agreement. This shows that respondents indicated that MSME Public Procurement Participation is high among MSMEs in Nairobi County in Kenya.

4.8 Test of Model

In establishing the effects of supply chain finance solutions, digital capabilities, and barriers that impact micro small, and medium enterprises’ participation in public procurement markets, correlation, and regression analysis were employed.

The main independent variables were supply chain finance solutions, digital capabilities, and challenges/barriers. There was a single dependent variable which was MSME Public Procurement Involvement.

The regression model was given as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$$

Where:

Y = Public Procurement Participation

X₁= Supply Chain Finance

X₂= Digitalization

X₃= Barriers to Public Procurement Involvement

β_0 = Constant Term; β_1 , β_2 , β_3 and β_4 = Beta coefficients which will be employed for measuring the dependent variable's sensitivity (Y) to a change in a unit of predictor variables.

ε = Error term

Table 4.7: Correlations of Variables and Descriptive Statistics

VARIABLES	1	2	3	4
1. Supply Chain Finance	1			
2. Digitalization	0.005	1		
3. Barriers to MSME Public Procurement Involvement	0.009	-0.067	1	
4. MSME Public Procurement Participation	0.058	.488**	-0.160	1
Mean	5.93	5.83	6.02	5.20
Standard Deviation	1.376	1.680	0.776	1.577

1=Supply Chain Finance; 2=Digitalization; 3=Barriers to MSME Public Procurement Involvement; 4=MSME Public Procurement Participation

Note:

** Correlation is significant at the 0.01 level (1-tailed); * Correlation is significant at the 0.05 level (1-tailed).

Source: Field Study, 2023

The correlation results shown in Table 4.7 above generally revealed that MSMEs in Nairobi Country partly attribute their MSME Public Procurement Participation to their Supply Chain Finance, Digitalization, and barriers to MSME participation. However, SCF solutions had a positive and significant but weak correlation with MSME Public Procurement Participation with the correlation coefficient $r = .001$ at $p < 0.05$. Digitalization had a positive and significant but weak correlation with MSME Public Procurement Participation with the correlation coefficient $r = .488$ at $p < 0.01$. Finally, the barriers to Public Procurement participation also had a negative, significant but weak correlation with MSME Public Procurement Involvement with the correlation coefficient $r = -0.160$ at $p < 0.05$. There was no case of multicollinearity.

4.9 Model Assessment

From the reliability tests run, all the constructs passed, and as such the research model estimation process began with creating composite variables and interaction terms and then examining relevant assumptions underlying the method of estimation employed in the study. Relying on each of the set of retained measures, the arithmetic mean was used to create the composite variables. The Supply Chain Finance Solutions construct was treated as a composite variable by averaging their respective items. The same was done with the Digitalization, barriers, and the MSME Public Procurement Participation variables.

The main outcome variable was MSME Public Procurement Involvement and the main predictor variables were Supply Chain Finance Solutions, Digitalization capabilities, and barriers to MSME public procurement participation. In the regression model run, MSME Public Procurement Participation was predicted by Supply Chain Finance Solutions, Digitalization capabilities, and barriers to MSME public procurement participation. The results of these effect relationships could be seen in Table 4.8.

Table 4.8: OLS Regression Results

Variables:	Standard Estimates
	MSME Public Procurement Participation
	Model 1
Hypothesized <i>Direct Effect</i>	
Supply Chain Finance Solutions	.061(.000)*
Digitalization capabilities	.775(.000)*
barriers to MSME public procurement participation	-.142(.00)*
FIT INDICES	
χ^2 (df)	55.875(3)
χ^2/df	18.625
F-Statistics	9.900
R²	.256

Source: Field Study, 2023

From Table 4.8, the regression results generated and the R-square value of **0.256** implies that about **25.6%** of changes in MSME Public Procurement Participation can be explained by Supply Chain Finance, Digitalization, and barriers to MSME public procurement participation.

Delving into the individual relationships, it can be seen that SCF solutions have a positive and significant relationship with MSME Public Procurement Participation ($\beta = .061$; $p = .000$). Again, digitalization capabilities also have a positive and significant relationship with MSME Public Procurement Participation ($\beta = .775$; $t = .000$). Finally, it was found that barriers to Public Procurement participation had a negative and significant relationship with barriers to MSME Public Procurement Participation ($\beta = -.142$; $p = .000$).

The summary of the results of the hypotheses tested is displayed in Table 4.9.

Table 4.9: Summary of Results

Variables	Results	Interpretation	Remarks
<i>Dependent Variable: MSME Public Procurement Participation</i>			
<i>Independent Variables:</i>			
Supply Chain Finance Solutions	$\beta = .061$; $p = .000$	Positive effect, significant	Supported
Digitalization capabilities	$\beta = .775$; $p = .000$	Positive effect, significant	Supported
Barriers to MSME Public Procurement participation	$\beta = -.142$; $p = .000$	Negative effect, significant	Supported

Source: Field Survey, 2023

From the results obtained in the regression analysis, the updated regression model would be as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

$$Y = .660 + .061 X_1 + .775 X_2 - .142 X_3 + \varepsilon$$

4.10 Chapter Summary

This chapter was dedicated to the presentation of the findings of the study. It began with the presentation of the demographic information of respondents as well as firm characteristics. This was followed by the descriptive statistics of variables, then the test of the research model using correlation and regression analysis. The findings were presented with the aid of appropriate tables and interpreted to meet the objectives of the study. The next chapter presents the summary of findings, discussions, conclusions, and recommendations.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings in the previous chapter. It also presents the conclusion of the study and recommendations in relation to the findings of the study. Using simple random and systematic sampling techniques, one hundred (100) responses were poised to be gathered from micro, small, and medium enterprises in Nairobi County. The overall response rate was 84%.

5.2 Summary of Findings

The summary of the study's findings is presented in line with the research objectives as follows:

5.2.1 Summary of Respondents and Firms' Characteristics

The study focused on micro, small, and medium enterprises in Nairobi County and 84 firms participated. It was revealed that the MSMEs that participated in the study were dominated by males at the helm of affairs more than females. With regard to their ages, it was realized that most of the respondents were between 20 – 30 years, followed by those from 31 – 40 years. This implies that the majority of MSMEs found in Nairobi County are quite young and energetic. For their educational background, it could be seen that most of the respondents were Degree certificate holders, followed by those who had Masters certificates and the remaining having Diploma certificates. Finally, with positions held at the respective MSMEs, the majority of them were the owners, followed by managers, and the rest were partners or workers.

With firm characteristics, the mean firm size (number of employees) was 18.21 employees whereas with the firm age (number of years of operation) the mean was 7.46 years. Also, the MSMEs were enquired if they participated in open public tendering opportunities and it was revealed that just a few sometimes participated. Finally, they were asked about the number of public tender calls (bids) they have responded to and the results revealed that the majority (50%) have participated in public tender calls.

Hence, it could be concluded that these statistics show that relatively, the respondents were abreast with the subject matter of the study and were capable of providing the necessary data.

5.2.2 Effect of Supply Chain Finance on MSME Public Procurement Participation

The first objective of the study was to examine the relationship between supply chain finance solutions and public procurement participation of micro and small enterprises in Nairobi County, Kenya. From the regression analysis, there is a positive and significant effect between Supply Chain Finance Solutions and MSME Public Procurement Participation ($\beta = .061$; $p=.000$). This implies that Supply Chain Finance Solutions contribute positively to MSME Public Procurement Participation among MSMEs in Kenya.

5.2.2 The Effect of Digitalization on MSME Public Procurement Participation

The second objective of the study was to determine the impact of digitalization on public procurement participation by MSMEs in Nairobi County, Kenya. From the findings, it was revealed that Digitalization has a positive and significant effect on MSME Public Procurement Participation ($\beta = .775$; $p=.000$). This means that Digitalization positively and significantly influences MSME Public Procurement Participation.

5.2.3 The Effect of Barriers to MSME Public Procurement Participation on MSME Public Procurement Involvement

The last objective of this study was to investigate the relationship between barriers faced by micro and small enterprises and their participation in public procurement in Nairobi County, Kenya. The results revealed that barriers to MSME public procurement participation had a significant but negative effect on MSME Public Procurement Involvement ($\beta = -.142$; $p = .000$). Therefore, it can be summarized that barriers to MSME public procurement participation have a negative impact on MSME Public Procurement Involvement.

5.3 Discussion of Findings and Hypothesis Testing

This study purposely was set to investigate the effects of supply chain finance solutions, digital capabilities, and barriers that impact micro, small, and medium enterprises' participation in public procurement markets in Nairobi, Kenya. As such the study was

firm-based focusing on selected MSMEs in Nairobi County in Kenya. With a sample size of 100 participants for the study, the same number of questionnaires were administered and an 84% response rate was achieved.

The study focused on the relationship that exists among the four constructs – Supply Chain Finance, Digitalization, barriers to MSME public procurement participation, and MSME Public Procurement Participation. From the empirical findings, the following discussions and implications can therefore be made;

The first hypothesis (**H1**) for this study was formulated that Supply Chain Finance significantly and positively relates to MSME Public Procurement Participation. From the findings, it was revealed that there is a positive and significant effect between Supply Chain Finance Solutions and MSME Public Procurement Participation ($\beta = .061$; $p=.000$). This implies that Supply Chain Finance Solutions contributes positively to MSME Public Procurement Participation among MSMEs in Kenya. Blackman et al.'s (2013) case study on Motorola's supply chain finance processes reveals cost reductions for all stakeholders by working together to manage financial flows with consumers, suppliers, and banks. The benefits of supply chain financing on cost savings and improved supply chain performance are shown in these case studies, but it is not obvious how supply chain finance affects supply chain performance (Xu et al., 2018). Hence, the findings of the study supported the literature on similar relationships.

The second hypothesis (**H2**) for this study was posited that Digitalization significantly and positively relates to MSME Public Procurement Participation. From the findings, it was revealed that Digitalization has a positive and significant effect on MSME Public Procurement Participation ($\beta = .775$; $p=.000$). This means that Digitalization positively and significantly influences MSME Public Procurement Participation. This finding supported earlier studies including Kumar and Chaubey (2017) and Bienhaus and Haddud (2018). Many digital payment providers offer intuitive platforms that easily integrate with a number of existing systems. One can connect to banks, vendors, employees, and customers into one seamless business ecosystem to streamline financial operations (Kumar & Chaubey, 2017). This implies that digitalization (in terms of e-procurement) has an influence on the public procurement participation of MSMEs.

Finally, the third hypothesis (**H3**) for this study posited that barriers to MSME public procurement participation significantly and negatively relate to MSME Public

Procurement Involvement. The results revealed that barriers to MSME public procurement participation had a significant but negative effect on MSME Public Procurement Involvement ($\beta = -.142$; $p=.000$). Therefore, it can be summarized that barriers to MSME public procurement participation rather have a negative impact on MSME Public Procurement Participation. Small businesses tend to have higher growth rates than large firms (Denes, 1997). Thus, by buying from MSMEs the public sector can positively influence local economies, regional regeneration, and local sourcing (Walker, 2006 in Zheng et al., 2006). MSMEs are also seen as a source of flexible personalized services (Zheng et al., 2006). The findings of the study proved that barriers and challenges negatively affect MSME public procurement involvement as revealed from previous studies.

5.4 Conclusions

This research study was aimed at assessing MSMEs' participation in public procurements in Nairobi County in Kenya particularly in line with their supply chain finance solutions, digitalization capabilities, and barriers to MSME public procurement participation. Given the significance of MSMEs for employment, information, and competitiveness, among other things, very few studies on MSMEs' access to finance and public contracts have been done from the perspective of developing countries, and Kenya is not an exception. Due to the fact that the majority of these MSMEs strongly rely on these contracts for their existence, the significance of MSMEs in participating and winning public procurement was required.

From the findings, it can be concluded that there is a positive and significant effect between Supply Chain Finance and MSME public procurement Participation. This implies that Supply Chain Finance contributes positively to MSME Public Procurement Participation among MSMEs in Kenya. Also, it can be concluded that digitalization has a positive and significant effect on MSME Public Procurement Participation. This means that Digitalization positively and significantly influences MSME public procurement involvement. It can also be concluded that barriers to MSME public procurement participation had a negative effect on MSME Public Procurement Participation. Therefore, it can be summarized that barriers to MSME public procurement participation rather have a negative impact on MSME Public Procurement Involvement.

According to the findings of the study, MSMEs are at a disadvantage in terms of their ability to compete, access money, and information flow from the standpoint of procurement agencies, which leads to supply chain financing solutions. As a result, it was discovered that MSME public procurement Participation was positively impacted by supply chain finance solutions. Based on the major findings, the researchers were able to draw the following conclusion regarding the competitiveness of MSMEs in the Kenyan economy with access to public contracts: MSMEs have the capacity to be flexible in their operations and their adaptability to changes either accidentally or unexpectedly when they have access to supply chain finance solutions. This conclusion was supported by Ong, Ismail, and Goh's (2010) study on the competitiveness of MSMEs. MSMEs are a driving factor for economic diversification, it might be said. The study can also draw the conclusion that MSMEs' digitization skills can serve as the key catalysts for such businesses to engage in public procurement. MSMEs might potentially serve as the primary engines for growth and development because of their advantages in terms of innovation, employment, geographical benefits, and the potential for decentralized supply options. Hence, making use of digital tools such Internet, and e-procurement technology, among others would help them to be able to get involved in public procurement calls.

Though there are barriers that mitigate MSMEs in public procurement participation, the findings of this study revealed that these barriers have a negative but significant effect on MSME public procurement participation. As such, though these micro, small, and medium enterprises seek to involve in the public procurement process, they are much affected by several barriers and challenges to achieving their expectations in responding to the public procurement calls.

5.5 Recommendations

From the summary of findings and conclusion drawn, the following recommendations are suggested for adoption and implementation;

By establishing incentives for MSMEs, the State can stimulate increased involvement by SMEs in public procurement markets. The presence of exclusive sourcing and requests for quotations in the procurement acts, which can enable officers to disregard MSMEs during open bids, is sometimes linked to the poor participation of SMEs.

Easy access to venture capital and other financial offers for MSMEs would go a long way to position them to be able to compete with large firms in participating in the public procurement process. Thus, supply chain finance solutions would increase the capacity of MSMEs to be able to actively involved in the procurement process including procurement planning, sourcing, and tendering, among others.

In most developed nations, using preferences has been a cornerstone of socioeconomic procurement practices. To prevent them from being used as a tool to fund corrupt or ineffective MSMEs, the use of MSME preferences must be deliberate and strategic. Public entities should be impartial when offering public procurement opportunities, provide MSMEs a chance to win these opportunities and avoid constantly basing contract awards on the principle of the lowest price.

The legal context of the debate and conclusions reveals that MSMEs lack the necessary understanding of the Public Procurement Acts and rules, or are occasionally ignorant of their contents, which would enable them to participate in any tender made available for consideration. The researcher advises MSMEs to obtain copies of the Act and arrange training sessions for capacity building for their staff members around the counties.

In order to improve MSMEs' access to public procurement contracts or chances, the researcher also recommends that additional efforts should be made to remove legal and regulatory framework that is perceived to be bureaucratic, expensive, and with a lot of tedious procedures.

The findings revealed that digitalization capabilities have a positive and significant effect on MSMEs' public procurement participation. It is therefore recommended that owners and managers of MSMEs invest in digital tools such as e-procurement technology, software, procurement management systems, etc. to make them competitive enough to participate in public procurement calls.

Last but not least, the researcher urges more investigation into the issues impeding MSMEs' access to government contracts.

5.5.1 Areas for Further Research

In view of the findings and limitations of this study, it is recommended that these areas be further investigated:

- i. The study was limited to using three variables as independent variables and recommended that future studies may investigate a model where digitalization will be the independent variable, supply chain finance, the mediator, and barriers, the moderator.
- ii. Carry out a similar study in other industries to validate the findings.



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APPENDICES

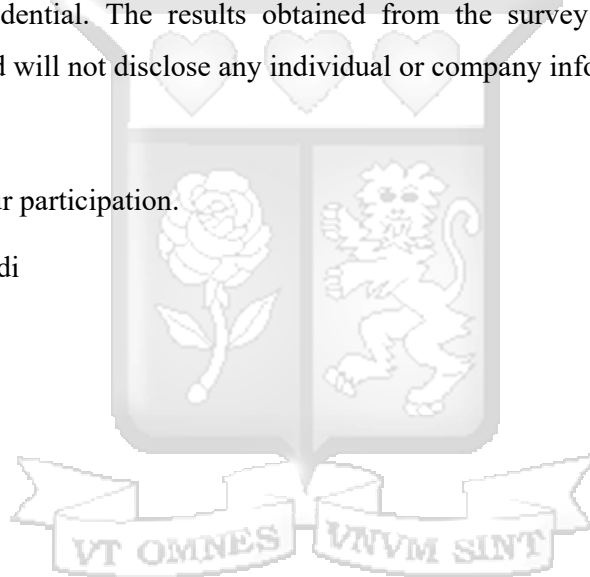
Appendix I: Letter of Introduction

Dear Respondent:

I am a Strathmore University student undertaking a Master's Degree. As part of the requirement of my program, I am carrying out a study on **PUBLIC PROCUREMENT AND MICRO AND SMALL ENTERPRISES: THE NEXUS OF SUPPLY CHAIN FINANCE, DIGITALISATION AND BARRIERS IN NAIROBI COUNTY**. To achieve this, you have been invited to participate in this academic research by filling out the questionnaire. The information obtained will be used for academic purposes only and will remain confidential. The results obtained from the survey will be presented in summary form and will not disclose any individual or company information.

Thank you for your participation.

Ascar Eunia Muladi



SECTION C: BARRIERS TO MSME PUBLIC PROCUREMENT INVOLVEMENT (Source: Di Mauro, Ancarani, & Hartley, 2020).

Using the 7-point Likert scale below, please indicate your level of agreement or disagreement concerning the following statements about your organization.

	1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neutral	5 Somewhat agree	6 Agree		7 Strongly agree			
						1	2	3	4	5	6
1. There are strict qualification requirements that reduce MSMEs' participation in public procurement											
2. There is difficulty in accessing information about procurement opportunities which reduces MSMEs' participation in public procurement.											
3. There are high costs related to the bidding process to reduce MSMEs' participation in public procurement											
4. Large contract sizes reduce MSMEs' participation in public procurement											
5. Award based on lowest price reduces MSMEs' participation in public procurement											
6. Delayed payment affects the opportunity of looking for government tenders											
7. Corruption affects your company winning government contracts											

SECTION D: MSME PUBLIC PROCUREMENT PARTICIPATION (Source: Di Mauro, Ancarani, & Hartley, 2020)

Using the 7-point Likert scale below, please indicate your level of agreement or disagreement concerning the following statements about your organization.

	1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neutral	5 Somewhat agree	6 Agree		7 Strongly agree			
						1	2	3	4	5	6
<i>For the past three years.....</i>											
1. Our MSME has been able to seek public procurement opportunities											
2. Our MSME involve in procurement planning											
3. Our MSME has submitted a bid in a public tender call/announcement											
4. Our MSME involve in public procurement training and development											

SECTION E: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please kindly write in ink in the box which corresponds to the statement, which in your opinion is the most appropriate answer to the related question. For the following questions, kindly select by checking (√) all that apply.

- Gender: Male [] Female []
- Age: [] 20-30years [] 30-40 years [] 40-50years [] Above 50years

3. What is your highest education? Middle School/Secondary Degree
Masters Other qualifications .
If other, please specify

4. What is your position in this company?

Owner Manager Worker Family member

If other, please specify

Firm Characteristics

5. How long has your business been in operation (years) [Firm Age]: Kindly state.....

6. Number of Employees in the Business [Firm Size). Kindly state

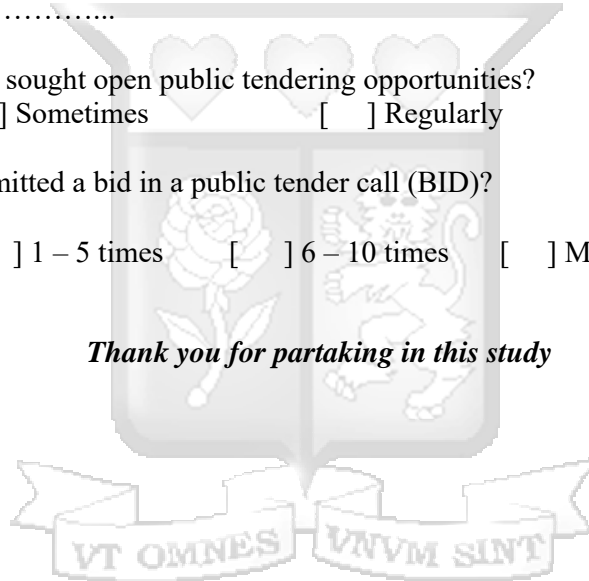
7. Have you ever sought open public tendering opportunities?

Never Sometimes Regularly

8. Have you submitted a bid in a public tender call (BID)?

Never 1 – 5 times 6 – 10 times More than 10 times

Thank you for partaking in this study



Appendix IV: Research Permit



24th April 2023

Ms Muladi Ascar Eunia,
ascar.eunia@strathmore.edu

Dear Ms Muladi,

RE: Public Procurement and Micro and Small Enterprises: The Nexus of Supply Chain Finance, Digitalization and Challenges in Nairobi County

This is to inform you that SU-ISERC has reviewed and **approved** your above SU-masters research proposal. Your application reference number is SU-ISERC1713/23. The approval period is from 24th April 2023 to 23rd April 2024.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consent, study instruments, and MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise, that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 48 hours
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

A blue ink signature of Dr. Ben Ngoya.

for: **Dr Ben Ngoya,**
Secretary; SU-ISERC

Cc: Mr Ambrose Rachtler,
Chairperson; SU-ISERC

