EFFECTS OF INFLATION ON THE PERFORMANCE OF SMES IN KENYA

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DECLARATION

I declare that this project proposal is my original work and that it has not been submitted to any other University for any degree award.

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This research proposal has been submitted for examination with my approval as the University Supervisor.

Dr. B. ONKOBA ONGERI

Signature Date: 1.12.2023

DEDICATION

This work is dedicated to my family.

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I am deeply grateful to God for guiding me on this journey. Achieving this milestone would not have been possible without the invaluable support of numerous individuals, and I want to express my heartfelt thanks for their contributions. First and foremost, I extend my sincere appreciation to Dr. Ongeri for being a constant source of support throughout the entire duration of this project. Dr. Ongeri, I am thankful for your prompt reviews, timely feedback, and, most importantly, for inspiring and assisting me in overcoming challenges during my studies. Your valuable advice and our insightful conversations in your office played a pivotal role in resolving some of the more intricate sections of my writing. Thank you immensely. I extend my sincerest gratitude to the entire University of Nairobi Department of Economics community. Your assistance is deeply appreciated. I cannot overlook expressing my immense gratitude to my family for standing by me throughout this endeavor. Your prayers and encouragement served as a constant source of motivation, propelling me toward the completion of this project. I am beyond appreciative for all your support, and may God bless each one of you abundantly.

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ABSTRACT

This research aims to assess the impact of inflation on the performance of Small and Medium Enterprises (SMEs) in Kenya, focusing specifically on its influence on the export growth of SMEs. The study also seeks to draw policy implications from its findings. The analysis will utilize secondary panel data sourced from the World Bank Enterprise Survey for the years 2007, 2013, and 2018, chosen for its comprehensive coverage of relevant variables. Employing panel data techniques such as Random Effects or Fixed Effects models, with guidance from the Hausman test, will facilitate a robust examination. The study, upon completion of the analysis, intends to provide policy recommendations based on the identified effects of inflation on SMEs' export growth. These recommendations aim to furnish policymakers with valuable insights to inform decisions that promote the resilience and advancement of SMEs in the face of inflationary challenges.

CHAPTER ONE:

INTRODUCTION

1.1 Background to the Study

The role of Small and Medium Enterprises (henceforth SMEs) holds significant importance both at micro and macro levels (Adhikary et al., 2021). Although lacking a universally accepted definition, SMEs have historically been defined qualitatively, leading to variations based on key variables. Various criteria, including independence, legal status, turnover, employment, balance sheet totals, and capital investments, have played a role in shaping definitions of SMEs. UNIDO and the World Bank, for instance, consider an SME to have fewer than 250 and 300 employees, respectively (ACCA, 2010). In the Kenyan context, classification is determined by factors such as the number of workers, annual turnover, and capital investments. Micro-enterprises, for instance, employ fewer than 10 individuals, while small enterprises employ between 10 and 50 people, each category having corresponding turnover and capital criteria as outlined in the MSMEs Act of 2012

SMEs globally play a pivotal role in job creation and income generation, contributing significantly to worldwide employment. The International Labour Organization (ILO) has actively intervened in promoting SMEs, recognizing their importance (ILO, 2005). In Kenya, SMEs constitute 98% of all businesses, generating 30% of annual jobs and contributing 3% to the country's GDP (Koskei, 2020). The sector employs a substantial portion of the Kenyan workforce, fostering job creation and enhancing household standards of living. SMEs are crucial to the nation's manufacturing sector, providing employment opportunities (Anis et al., 2020).

Despite their resilience and potential, many SMEs operate within the informal sector, limiting their growth potential and access to resources. Recognizing their importance, workshops and expos highlight the untapped potential of SMEs to rejuvenate the Kenyan economy (Muli, 2018).

1.1.0. Inflation impact on SMEs

Unlike larger entities, SMEs are more susceptible to external factors, with inflation being a significant challenge. In economics, inflation refers to the gradual increase in commodity prices over time. It signifies a loss in the real value of money, impacting the purchasing power of currency. While excessive money supply expansion is often cited as a cause of high inflation, factors influencing inflation at lower levels remain debated among economists. Low to moderate inflation may result from changes in real demand, supply variations, and increases in the money supply. Prolonged inflation is typically attributed to money supply growth outpacing economic expansion (Dwivedi, 2005).

In the prevailing economic landscape, economists widely advocate for maintaining a low and stable inflation rate. This approach, as opposed to zero or negative inflation, facilitates quicker labor market responses during economic downturns, mitigating the severity of such downturns. The responsibility of ensuring a low and stable inflation rate is entrusted to central banks, which employ interest rate adjustments and other monetary policy tools for this purpose (Lipsey, 2004).

Furthermore, the SME sector constitutes a significant portion of Kenya's workforce, creating well-paying jobs that contribute to the improvement of household standards of living. SMEs play a crucial role in the country's manufacturing sector by providing employment opportunities (Anis et al., 2020). While many small enterprises operate within the informal sector, offering immediate relief, they often face limitations in terms of growth, access to resources and markets, and long-

term socioeconomic impact. A workshop conducted in conjunction with the recently concluded 3rd Kenya Manufacturing Summit and Expo highlighted the substantial yet underutilized potential of SMEs to rejuvenate the Kenyan economy. The Expo underscored the resilience of the SME sector, evident in its significant representation among exhibitors. Therefore, the SME sector holds immense importance for the Kenyan economy, and the improvement of living standards for Kenyans hinges significantly on its performance (Muli, 2018). While economists generally agree that excessive expansion of the money supply triggers high inflation rates and hyperinflation, there is considerable debate over the factors influencing inflation at lower to moderate levels. Changes in the actual demand for goods and services, variations in their supply (such as shortages), and an expansion of the money supply might all be contributing factors to moderate inflation. However, most people agree that prolonged periods of inflation are primarily caused by the money supply growing more quickly than the rate of economic expansion (Dwivedi, 2005).

In the current economic landscape, prominent economists advocate for maintaining a low, stable inflation rate. Unlike zero or negative inflation, this approach reduces the likelihood of a liquidity trap—a situation in which monetary policy is unable to effectively stabilize the economy—and enables the labor market to adjust more swiftly during economic downturns. Setting interest rates, carrying out open market transactions, and creating banking reserve requirements are the typical methods used by monetary authorities—often central banks—to manage the money supply (Lipsey, 2004).

1.1.1 Status of inflation in Kenya

Inflation remains a pervasive challenge for global economies, significantly influencing their operational dynamics. In the context of emerging nations like Kenya, where inflation serves as a pivotal indicator of economic health, the central bank plays a crucial role in its management (Kiruri, 2018). Kenya's annual inflation rate reached 9.2% in September 2022, marking the sixth consecutive month of uninterrupted growth. This outperformed market estimates and beyond the central bank's goal range of 2.5%-7.5%. The jump was caused mostly by strong increases in food, gasoline, and housing prices, resulting in the highest inflation rate since June 2017. According to the Kenya National Bureau of Statistics (2022), consumer prices experienced a monthly rise of 0.9%, following a 0.4% increase in the preceding month. The Central Bank of Kenya (CBK) adopted inflation targeting in 2013 with the aim of maintaining an inflation rate within the 3-4% range (Rwigi, 2021). However, the actual inflation rate has consistently exceeded this desired level. Inconsistent monetary policy design and implementation have posed challenges for economies, hindering their ability to achieve target inflation levels and exposing the population to the repercussions of inflation. The growing cost of necessary items has reduced Kenyans' discretionary income, thereby impacting the performance of businesses, particularly small and medium-sized firms (SMEs).

In response to the inflationary pressures, the central bank has shifted to targeted inflation control (Kiruri, 2018). This approach involves announcing a specific inflation target and adjusting interest rates to align actual inflation with the desired target. This, in turn, influences the availability of credit for individuals and SMEs, exerting further impacts on the overall economic performance.

The intricate interplay between inflation, monetary policy, and their consequences underscores the ongoing challenges faced by emerging economies in maintaining economic stability.

1.1.2 Performance of SMEs

Small and medium-sized enterprises (SMEs) play a pivotal role in fostering economic development by contributing to national output, job creation, and alleviating income inequality and poverty (Fanta, 2015). Recognizing the importance of SMEs in the GDP growth of various nations, governments, researchers, and stakeholders worldwide have expressed substantial interest in SME finance (Du et al., 2015).

In China, SMEs constitute 99% of businesses and generate 60% of the country's gross domestic product, emphasizing their significant role in the nation's economic landscape (China National Bureau of Statistics, 2017). Similarly, in the United States, SMBs contribute to 67% of private sector employment, with 99.7% of employer enterprises falling under the category of SMBs (Small Business Administration, 2015). Despite their global prevalence, SMEs, particularly in emerging economies like China, often face challenges in accessing external funding necessary for expansion (Newman et al., 2012).

In the context of Kenya, SMEs are instrumental in industrialization and economic growth. Their contributions extend to the nation's overall development, including increased per capita income, regional economic balance, and resource utilization for growth and development (Ohuche & Oguiuba, 2014). The Capital Market Authority reports that SMEs are significant employers, providing jobs for over 70% of people in urban regions and over 90% in rural areas (2015). SMEs in Kenya account for slightly over 80% of employment and 40% of the country's GDP, making them a substantial force in the national economy (KNBS Report, 2016).

Despite their crucial role, SMEs encounter obstacles such as limited access to capital, poor management, insufficient information, and a lack of creditworthiness, hindering their growth and resilience (Capital Markets Authority, 2015). These challenges, influenced by both internal and external factors, include inadequate financial records, weak management structures, and a lack of collateral, leading financial institutions to reject loan advances to SMEs (Kariuki, 2012). Addressing these barriers is essential to unlocking the full potential of SMEs in contributing to economic development.

1.1.3 SME and Kenya's Economic Growth

Kenya, positioned as one of Africa's emerging economies, has demonstrated an impressive growth trajectory, with aspirations to attain middle-income status by 2030, as outlined in its Vision 2030 plan. To achieve this, the country has strategically supported small and medium enterprises (SMEs) and invested in ICT infrastructure to enhance their performance (Musau, 2013). Currently, over 98% of businesses in Kenya operate in the informal sector, constituting SMEs, with approximately 7.5 million entrepreneurs, primarily comprised of the youth, a dynamic and highly productive workforce (KNBS, 2019). Projections indicate a further increase in these figures by the end of 2016.

The significance of SMEs in Kenya is underscored by their role in employment, with over 92% of all employment in the country linked directly or indirectly to this sector (KNBS, 2020). The Economic Survey of 2020 notes a notable increase of 9.9% in employment in financial and insurance activities, attributed to the expansion of financial services into rural areas through increased branch networks and the adoption of agency banking.

Constituting slightly over 40% of the gross domestic product (GDP), the SME sector has garnered substantial attention from the Kenyan government, which has formulated official policies to foster

its growth. The establishment of the Micro, Small and Medium Enterprises Authority in 2017, facilitated by legislation such as the MSMEs Act, reflects the government's commitment to creating an enabling environment for SME development. The government's reform agenda places particular emphasis on crucial sectors like agriculture and SMEs.

Beyond employment creation, the SME sector has the potential to boost economic industrialization while harmonizing with wider national development goals. SMEs in Kenya, on the other hand, face financial restraints, owing to the stringent conditions imposed on small-scale enterprises when requesting loans from conventional commercial banks (Beck & Dermirguc-Kunt, 2006). Successfully tackling these obstacles is critical to fulfilling SMEs' full potential and their significant contribution to Kenya's economic growth and development.

1.1.4 Inflation and Organization Performance

Inflation poses significant challenges to the business sector, impacting productivity, resource allocation, and overall firm valuations. To effectively navigate the negative consequences of inflation, businesses need to evaluate its potential threats, understand their actual costs and pricing structures, and devise strategies to safeguard investments and gross margins (Ulrich Pidun, Daniel Stelter, and Katrin Van Dyken, 2010). High inflation rates can elevate production costs, leading to menu expenses, salary inflation, ambiguity, and challenges in international competitiveness (Pettinger, 2016). However, it can also benefit businesses by reducing the real value of their debt. Moderate inflation, associated with robust economic growth, can encourage demand-pull inflation, allowing businesses to raise prices and boost profits.

In the Nigerian context, a study examining the performance of banks found a negative correlation between inflation and firm performance, particularly in terms of profitability indicators such as return on equity (ROE) and reported profit (Chioma Dorothy Oleka, 2015). On the contrary,

evidence from Pakistan suggests a nuanced relationship, with return on equity (ROE) positively impacted by inflation while return on asset (ROA) remains unaffected (Zuhaib Zulfiqar and Nizam Ud Din, 2015).

Turning to the Kenyan economy, several studies have explored the dynamics of inflation. Kirimi (2014) identified the positive impact of both supply chain issues and currency rates on the nation's inflation rate. Okoth (2013) focused on how Kenyan currency rates are influenced by interest rates, revealing the necessity of raising interest rates to stabilize exchange rates. Tumkuo and Caroline's study in 2012 highlighted a clear relationship between Kenyan interest rates and inflation, indicating that an increase in one corresponds to an increase in the other. Koila's study (2016) affirmed a direct correlation between monetary policies and inflation in Kenya. Ndung'u's research (2018) delved into the complex interplay between inflation and economic growth, revealing conflicting patterns.

Omondi's investigation (2014) into how inflation impacts lending by Kenyan commercial banks discovered a positive correlation between inflation rates and the bank's base lending rate (Wamucii, 2010). The study emphasized that rising inflation rates lead to increased base lending rates as banks seek to compensate for the credit risk associated with diminishing purchasing power. These diverse findings underscore the need for businesses to carefully assess the local economic context and adopt tailored strategies to mitigate the multifaceted impacts of inflation on their performance.

1.1.4. Motivation to the study

Embarking on an empirical exploration of the repercussions of inflation on Small and Medium Enterprises (SMEs) in Kenya is propelled by various economic and pragmatic considerations. Several key motivating factors underpinning this study include: (i) SMEs hold a central and

influential role in Kenya's economic landscape, significantly contributing to employment, fostering innovation, and driving overall economic growth. Comprehending the effects of inflation on these enterprises is imperative for shaping effective economic policies and nurturing sustainable development. (ii) Inflation serves as a crucial economic indicator, reflecting the general increase in prices over time. Its multifaceted impact on SMEs encompasses influences on costs, pricing strategies, and overall business operations. Investigating this impact yields insights into the broader economic health and resilience of SMEs. (iii) Inflation can exert pressure on the costs of inputs, production, and operating expenses for SMEs. Examining how these cost dynamics affect profit margins and operational efficiency is essential for SMEs to adapt and thrive in an inflationary environment. (iv)

SMEs often operate with limited resources and financial flexibility. Inflation can introduce uncertainties in financial planning and management. Understanding the effects of inflation on financial stability and risk management practices of SMEs is crucial for their long-term sustainability. (v) Inflation may impact the competitiveness of SMEs, especially in markets where larger corporations may have more resources to navigate inflationary pressures. Investigating these competitive dynamics sheds light on the challenges SMEs face and helps in formulating strategies for enhanced competitiveness. (vi) SMEs need effective risk mitigation strategies to navigate economic uncertainties. An empirical investigation into the effects of inflation allows for the identification of specific risks associated with inflation and the development of strategies to mitigate these risks.

1.2 Statement of the Problem

According to a 2017 Central Bank of Kenya REPORT, SMEs make up 98 percent of all businesses in Kenya. They play a pivotal role by generating 30 percent of annual jobs and contributing 3 percent to the nation's gross domestic product (Koskei, 2020).The SME sector stands as a pivotal component of the Kenyan economy, playing a crucial role in economic growth and the improvement of living standards for Kenyans (Muli, 2018). However, amidst challenges like the COVID-19 pandemic and geopolitical uncertainties, the sustainability of SMEs is under scrutiny. Macroeconomic conditions, especially inflation, significantly impact the industry. Globally, 85 percent of small business owners express concern about inflation, with one-third citing it as their primary worry. The pandemic exacerbated the situation, amplifying supply chain challenges and driving up costs. Kenya's annual inflation rate increased to 9.2% in September 2022, beyond both the central bank's goal range and market forecasts for the seventh consecutive month (Kenya National Bureau of Statistics, 2022). Understanding the correlation between inflation and corporate performance is crucial for investors. Existing literature presents varied results on the impact of inflation on organizational performance. In Pakistan, Mahmood et al. (2014) discovered that inflation had a negative influence on stock prices, whereas Mahonye and Mandishara (2014) identified inflation as a key factor impacting stock market returns in Zimbabwe. Daferighe and Sunday (2012) hypothesized that in Nigeria, a low degree of influence functions as a buffer against inflation. In the Kenyan context, Kimani and Mutuku (2013) observed a negative correlation between inflation and stock market performance. However, studies in Kenya often integrate inflation with other macroeconomic variables, making it challenging to isolate its impact. Moreover, there is a lack of research specifically exploring how inflation affects the performance

of Kenyan SMEs. This study aims to address these gaps and unveil the dynamics of inflation's influence on small and medium-sized enterprises in Kenya.

1.3 Objective of the study

The General Objective of the Study is to determine the effects of inflation on the performance of SMEs in Kenya

1.3.1. Specific Objectives of the Study

i. To determine the effect of inflation on SMEs export growth in Kenya
ii. To draw policy recommendation based on our study findings

1.4 Research Questions

i. What is the effect of inflation on the SMEs' export growth in Kenya?
ii. What policy implication can rise from the nexus between inflation and export growth for SMEs in Kenya?

1.5 Significance of the study

The outcomes of this research endeavor will deepen our comprehension of inflation and its impact on SME performance, enabling SME management to make well-informed decisions regarding optimal asset allocation in times of inflation. Moreover, this study aims to furnish policymakers with valuable insights, presenting recommendations for the formulation of effective policies that can mitigate the negative impacts of inflation on SME performance. The anticipated findings will not only contribute to existing literature but also enhance our understanding of the intricate dynamics of how inflation shapes the performance of SMEs in Kenya.

1.6 Scope and organization of the study

From the introduction chapter above, it follows the literature review chapter and the methodological chapter thereafter.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature Review

2.2.1 Traditional export performance Theories

In this study, we review some of the main theories related to our study, such as the comparative advantage of D. Ricardo, Theory of Heckscher-Ohlin, Competitive Trade theory as well as Dynamic model theory. However, it gives much weight to competitive trade theory and dynamic model theory because it related to SME's export performance. But before we discuss this theories in details, its important to understand the pathways through which inflation may influence export growth of SMEs. Here are some key pathways through which inflation can affect SME export growth (i) Inflation often leads to an increase in the cost of production, including raw materials, labor, and energy expenses. For SMEs engaged in export activities, higher production costs can erode profit margins and reduce competitiveness in the global market. This pathways may lead to a negative export growth for below average firms (ii) Inflation can contribute to currency depreciation, leading to unfavorable exchange rate conditions. For SMEs involved in export, a

weaker domestic currency can make their products more competitive in international markets. However, it also means higher costs for imported inputs, potentially impacting overall export profitability. Through this channel, the export growth depends on the difference between exports and import of raw materials (iii) Central banks may respond to inflation by raising interest rates to curb inflationary pressures. Higher interest rates can increase the cost of borrowing for SMEs, affecting their ability to finance export-related activities such as production, marketing, and market entry (iv) Inflation can influence consumer purchasing power and demand. If inflation leads to reduced consumer spending power, it can affect the demand for exported goods and services. SMEs heavily reliant on consumer markets may experience slower export growth due to weakened demand (v) Inflation may impact the overall competitiveness of a country's exports. If inflation is higher in a particular country compared to its trading partners, it can lead to higher export prices, potentially reducing the competitiveness of SMEs in international markets (vi) Inflationary pressures can disrupt global supply chains, affecting the availability and cost of inputs for SMEs engaged in export activities. Supply chain disruptions can lead to production delays, increased costs, and challenges in meeting export orders. (vii) Inflation can affect contractual agreements between SMEs and their international partners. If contracts are denominated in a stable currency, inflation may lead to renegotiations or adjustments to pricing terms, impacting the profitability of export transactions and lastly (viii) Perception and expectations of future inflation can influence decision-making. If SMEs anticipate higher inflation in the future, they may adjust pricing strategies, investment plans, and risk management practices, impacting export growth.

2.2.1.1. Comparative advantage theory (CAT)

While the CAT itself doesn't explicitly address the connection between inflation and export performance, its core principle, emphasizing a firm's specialization in exporting products where it

holds a comparative advantage and importing those where it lacks such advantage, plays a crucial role in our examination of inflation's impact on export behavior. Inflation, being a consequence of market variable distortions like tax distortions, can potentially influence the comparative advantage of SMEs in the market. Distinctions in CAT may stem from knowledge-based variations (Balassa, 1963). In a scenario where labor is the sole production factor, a firm is inclined to export goods where it exhibits higher labor productivity relative to other goods. Hence, the Ricardian theory grounds trade in disparities of labor productivity. The CAT further elucidates how comparative advantage governs trade in models such as HO.. In the Ricardian trade model, technological disparities among countries and firms contribute to the emergence of comparative advantage.

2.2.1.2. Heckscher-Ohlin (H-O) theory

The Heckscher-Ohlin (H-O) hypothesis posits that firms engage in exports due to variations in their proportional resource endowments (land, labor, and capital) and in the degrees to which these elements are employed in different commodities. This theory breaks down commerce into two basic concepts: trade in factor content, which explores the composition of a product's inputs, and trade in products, which concentrates on specific things such as computers. The H-O theory provides insights into predicting technological differences, given its premise of similar production functions among trading countries (Enkhzaya, 2020).. According to this approach, a country's comparative advantage is determined by variables at the national level. When these models are used at the business level, it indicates that enterprises in certain nations export items in which they have a competitive advantage. As a result, the Competitive Trade Theory is critical in explaining inter-industry trade between industrialized and developing countries.

2.2.1.3. Dynamic model theory (DMT)

Moving on to the DMT developed by Roberts and Tybout (1997), it is hypothesized that enterprises participating in export operations, driven by the profit-maximization aim and rational decision-making, internally decide the choice to export and generate new items for the export market. Sunk costs are ascribed to company persistence in exporting, and the likelihood of companies participating in export operations is determined by unobserved heterogeneity across all firms. Taking market entrance costs into account, this model has showed empirical validity in assessing business exporting behavior. It recognizes business heterogeneity in production as well as decision-making about export operations (Roberts and Tybout, 1997). This model, which is based on the notion of increased returns to scale as a result of improved knowledge and technology, accounts for the increase in the firm's exportable goods production.

2.2.2 Fisher Effect Theory

Fisher (1930) laid the foundation for the Fisher effect theory, suggesting that nominal interest rates accurately encapsulate prevailing knowledge about inflation expectations. According to Laichena and Obwogi (2015), this theory supports the idea that the major goal of monetary policy should be to control inflation expectations in order to keep the real interest rate stable and promote saving and investment. The Fisher effect hypothesis states that the expected rate of return on common stocks is made up of the actual return plus the expected rate of inflation. It posits that the real return on common stock remains constant over time, implying that the rate of common stock will move in lockstep with the rate of inflation, balancing negative and positive returns (Mahonye & Mandishara, 2014).

Nominal interest rates on financial assets should follow anticipated inflation, according to the Fisher effect. It is anticipated that changes in short- and long-term interest rates would affect the

nominal risk-free rate similarly, which will then affect the discount rate (Kuwornu, 2012). According to Floros (2004), the Fisher hypothesis claims that there is no link between the monetary sector and real rates. On the other hand, when actual stock returns are used instead of nominal stock returns, it anticipates that real stock returns would remain unchanged by inflation (Shanmugam & Misra, 2008). Real rates of return are taken into consideration regardless of the rate of inflation, in contrast to the Fisher theory's basic tenet that nominal returns on financial assets should increase with inflation. Consequently, the results of this study when the Fisher effect hypothesis is applied show that stock returns and both predicted and unexpected inflation have an adverse connection. This concept helps to understand how inflation and the stock return performance of SMEs are related.

2.2 Empirical Literature review

2.3.1 Inflation

The impact of inflation on economic activities such as those in the SME is likely be through the Inflation-Unemployment relationship put across by both the original Phillips curve and augmented Phillips curve. Inflation has been defined over a long period depending on the situation. However, various definitions have stood out which are relevant to this study. Inflation is defined as the continuous increase in the general prices of services and goods for a certain period of time basically a year (Modebe & Ezeaku, 2016). Ahlgrim and D'Arcy (2012), defines inflation as the dynamic changes of prices across the economy which inadvertently leads to a drop in the value of the domestic currency. During the periods when inflation is experienced, the price levels often increase, the purchasing power of money reduces and in most cases the real value of the money deteriorates which may lead to a negative effect on the economy if it’s not controlled Modebe et al. (2016). In most economies, the macroeconomic policy is usually based on having stable prices

and maintaining a sustainable economic growth (Mwakanemela, 2013). Stability in this case doesn't necessarily mean having fixed prices since it is difficult to achieve this feat. It means having very minimum fluctuations in prices for a long period of time (Anyanwaokoro, 1999).

Companies engaged in the production of consumer goods might view moderate inflation as advantageous. It creates a sense of urgency among consumers to make immediate purchases rather than delaying. In the context of inflation, adjustments to a brand's pricing positioning can be subtly implemented, particularly when competitors' prices remain stable. If inflationary pressures prompt widespread price modifications across the industry, an unnoticed structural adjustment in pricing may occur (Ali & Ibrahim, 2018). However, businesses become more apprehensive when faced with excessively high price inflation. This situation introduces complexities in planning and investment decisions, and at a macroeconomic level, it may be associated with an increased likelihood of economic recession, leading to a reduction in consumer spending. In extreme cases, the prospect of substantial inflation may compel businesses to retain their inventory for longer periods, hoping for future appreciation in value.

Inflation raises the cost of manufacturing, raw materials, and overhead expenses for SMEs. Because inflation is not linear, it has varying effects on various sectors of the economy and at different times (Selcuk et al., 2018). A shortage of supplies that can delay the completion of manufactured goods is one of the most urgent effects. The entire market suffers when producers are unable to obtain the raw materials they require to create finished goods. Many entrepreneurs' finances are held hostage in inventory-in-process due to the interconnected market, which results in losses and raises demand and prices (Darmawan, 2018). Inflation raises interest rates concurrently, which may prevent SMEs from obtaining loans necessary to cover rising

manufacturing costs. The cost and availability of loans can pose substantial challenges during inflation. With the escalating expenses, only major corporations wielding control over the supply chain might endure, potentially forcing numerous SMEs out of business. While some firms may attempt to pass on additional costs to customers, in reality, many enterprises end up absorbing most, if not all, of the extra expenses to retain their clientele. Small firms cannot survive the high cost of manufacturing without passing those expenses forward to customers, as doing so will diminish their margin and make it impossible for them to maintain growing (Ibrahim & Ndidi, 2020). Additionally, as inflation increases, customers' purchasing power declines, meaning they can now only afford to purchase a smaller number of products and services than in the past. Consequently, companies may experience a decrease in sales, leading to a reduction in overall revenue. The association between rising interest rates and increasing inflation is noteworthy, as it hampers economic growth and elevates the risk of a recession, both of which negatively affect SMEs. Inflation can disrupt business planning and diminish investment, further compounded by the escalating costs of goods and services, undermining the currency's effectiveness as a medium of exchange. As a result of the customers' declining purchasing power, this will impact the sales revenues of the SMEs.

2.3.2 Interest rates

Interest rates are a representation of the cost of borrowing money for a specific amount of time. For many businesses, borrowing is an important source of funding. However, Myers and Steward (1984) claim that because interest rates are indexed to inflation, many businesses are quite concerned about the current interest rates. In some borrowing agreements, interest rates continue to have an impact on the company for the entire time the borrowing agreement is in force. Interest rates function as a compensation for the depreciation in the value of borrowed money, largely

attributable to inflation, and also as a profit margin to account for the lender's risk of default throughout the loan duration. Elevated interest rates discourage potential borrowers and heighten the risk of default in an existing loan portfolio, potentially adversely affecting financial institutions whose primary business revolves around lending money. Early in 1999, this bad debt situation was noted. In a study of U.S. corporations, Jalilvand and Harris (1984) found that business size, interest rate conditions, and stock price levels all affected how quickly capital structure modifications were made, indicating that they did have an impact.

Interest rates affect a nation's inflation rate as well as the performance of SMEs. When taking out a loan from a lender, people pay interest rates, which are calculated as a percentage of the borrowed amount over a certain period of time, usually a year. As a proportion of the original amount deposited, the interest rate, on the other hand, represents the profits from lending money to a bank or other financial institution (Isola & Mesagan, 2018). Because government policies directly affect economic development, they have an impact on the interest rates that financial firms may charge.

Interest rates are critical in determining the affordability of loans for individuals and organizations, impacting their decisions to invest, spend, or save money. Kenya's central bank regularly controls interest rates in order to reduce substantial currency volatility and instability in the country. Interest rates are adjusted to avoid negative economic repercussions by stabilizing the falling currency and minimizing inflationary pressures.

Amonoo et al. (2003) define interest rate as the premium received by the lender after a predetermined period, representing the cost of capital from the borrower's perspective. Interest rates exert three major effects on businesses. Firstly, as interest rates rise, the overall price consumers pay for goods and services increases, leading to a likely decline in the demand for

items. Secondly, since most companies borrow money to finance regular business operations, managers must either tolerate reduced profits or raise product prices to cover operating expenses.

The third influence of interest rates is on corporate expansion, and since the company occasionally needs to use credit to finance new equipment, the manager is very concerned about interest. Therefore, lower interest rates could indicate a favourable period for the company, and higher rates might prompt a manager to postpone expansion until borrowing costs fall. There is a change in the supply and demand for loanable money during periods of rising and dropping interest rates, respectively. Periodically, demand declines as more companies decide to borrow money to expand their operations, which raises interest rates. Demand declines as well once enterprises have finished expanding or if there is a general reduction in the sales of finished goods and services.

2.3.3 Exchange rates

The exchange rate plays a pivotal role in determining the country's economic position in the global economy. It is closely monitored and regulated by the central bank due to its substantial impact on the nation's trade volume. Additionally, interest rates hold significance as they influence businesses, particularly SMEs, and their actual return on investment (Vera, 2020). The real return of a portfolio is significantly influenced by the rate of exchange of the currency in which the majority of its investments are held. As a result, a dropping exchange rate lowers people's ability to buy things and the amount of income and capital gains they can expect to receive from any returns. Furthermore, the exchange rate has ripple effects on other income sources, encompassing interest rates, inflation, and capital gains from local assets. Despite the intricacies of exchange rate analysis, investors and stakeholders should be cognizant of its influence on their assets (Nyaga, 2020). Exchange rates, driven by supply and demand dynamics, play a crucial role in determining the global balance of payments. According to James (2014), five key factors, including

infrastructure, parity conditions, and political risks for foreign direct investment, shape currency rates. Changes in exchange rates can impact the performance of SMEs. Exchange rates may deviate from their equilibrium level for two main reasons. Firstly, governments and central banks can directly influence the real exchange rate through actions known as currency manipulation. They wield tools such as capital controls or targeted foreign exchange interventions to alter the actual value of the exchange rate. Secondly, misalignments in exchange rates may result from distortions in the global financial system, domestic structural factors, or unintended consequences of macroeconomic policies. The extent of control policymakers have over the real exchange rate is a matter of scholarly debate (Eichengreen, 2007; Rodrik, 2008)

Foreign exchange rate risk refers to a company's vulnerability to unforeseen changes in exchange rates, impacting cash flows, assets, liabilities, or operating incomes. The three main types of foreign exchange risk that SMEs frequently encounter are accounting (translation) exposure, transaction (commitment) exposure, and economic (operational, competitive, or cash flow) susceptibility (Eiteman et al., 2006). Effectively managing the significant volatility of currency rates is critical for enterprises doing international business, especially given the unpredictability of the Kenyan shilling's value in recent years. by stabilizing the falling currency and lowering inflationary pressures(Shapiro, 2006).

Events in the foreign exchange market can significantly influence trade and investment within a nation. As a result, keeping the exchange rate steady can have a favorable impact on household income, company investment, import decisions, and the development of government fiscal and monetary policies. Fluctuations in foreign currency can influence the financial markets and other sectors of an open economy. Studies indicate that the appreciation of floating exchange rates

diminishes export market competitiveness and negatively affects the local stock market of export-driven economies (Charles, 2006). This, in turn, has implications for the performance of businesses, including SMEs.

2.3.4 Gross Domestic Product

Economic booms and busts are episodes that occur in economies; these episodes are referred to as cyclic variations in an economy. Comparatively to times when the economy is in a recession, the demand for credit rises during periods when the economy is at its height due to more vigorous business and investment activity (Athanosoglou et al, 2005). Profitability in businesses in the SME sector suffers when economic growth is slowing down since there is less demand for their products (Ongore and Kusa, 2013). On the other side, enhanced profitability in the industry would be felt where economic growth is experienced with a positive and expanding economic output as a result of a rise in product demand.

Numerous studies have explored the relationship between GDP growth and business performance, particularly in the context of private equity and banking sectors. For instance, research by Bernoth, Colavecchio, and Sass (2010) and Gompers and Lerner (1998) suggests a positive correlation between financial performance and GDP growth. This connection implies increased investment activities during periods of GDP growth, leading to more entrepreneurship opportunities and a greater infusion of venture capital into the market. Businesses tend to perform better during rapid GDP development, seeking additional funding for expanding investment activities as overall demand for their products rises. This dynamic enables SMEs to diversify and expand their portfolios, enhancing their chances of profitability.

However, some studies present nuanced findings regarding the impact of GDP growth on specific sectors. Scott and Arias (2011) conducted an analysis of the five largest banks in the United States,

revealing that the profits of the banking industry were not directly correlated with GDP growth. Hoffmann (2011) reached a similar conclusion in a study on US banks, indicating no meaningful connection between banks and GDP. Sufian (2011) studied Korean commercial banks from 1992 to 2003, finding that inflation had a productive effect on ROA, while GDP had a negative effect.

Different perspectives emerge in studies focused on specific countries. Damena (2011) explored the profitability determinants of Ethiopian commercial banks, noting a favorable correlation between the country's GDP, inflation, and interest rates. Davydenko (2011) observed a positive correlation between return on assets in Ukrainian banks and both GDP and inflation rates. In a study on Latvian banks during an economic crisis, Saksonova and Solovjova (2011) found that inflation had a negative impact on return on assets, while GDP growth had a positive effect. Examining various regions, Khrawish (2011) discovered a negative effect of GDP and inflation on returns on assets and returns on equity in listed Jordanian banks. Alper and Anbar (2011) explored Turkish banks, noting minimal effects of real interest rates, GDP growth, and inflation rates on assets and equity returns. Sharma and Mani (2012) studied Indian commercial banks, finding minimal influence of GDP and inflation rates on return on assets over a five-year period. Zeitun (2012) investigated Gulf Cooperation Council nations' banks, revealing a positive association between GDP, return on assets (ROA), and return on equity (ROE), but a negative relationship with inflation rates. While existing studies focus on banks, there is a notable gap in understanding the impact of these macroeconomic factors on SMEs, which this analysis aims to address.

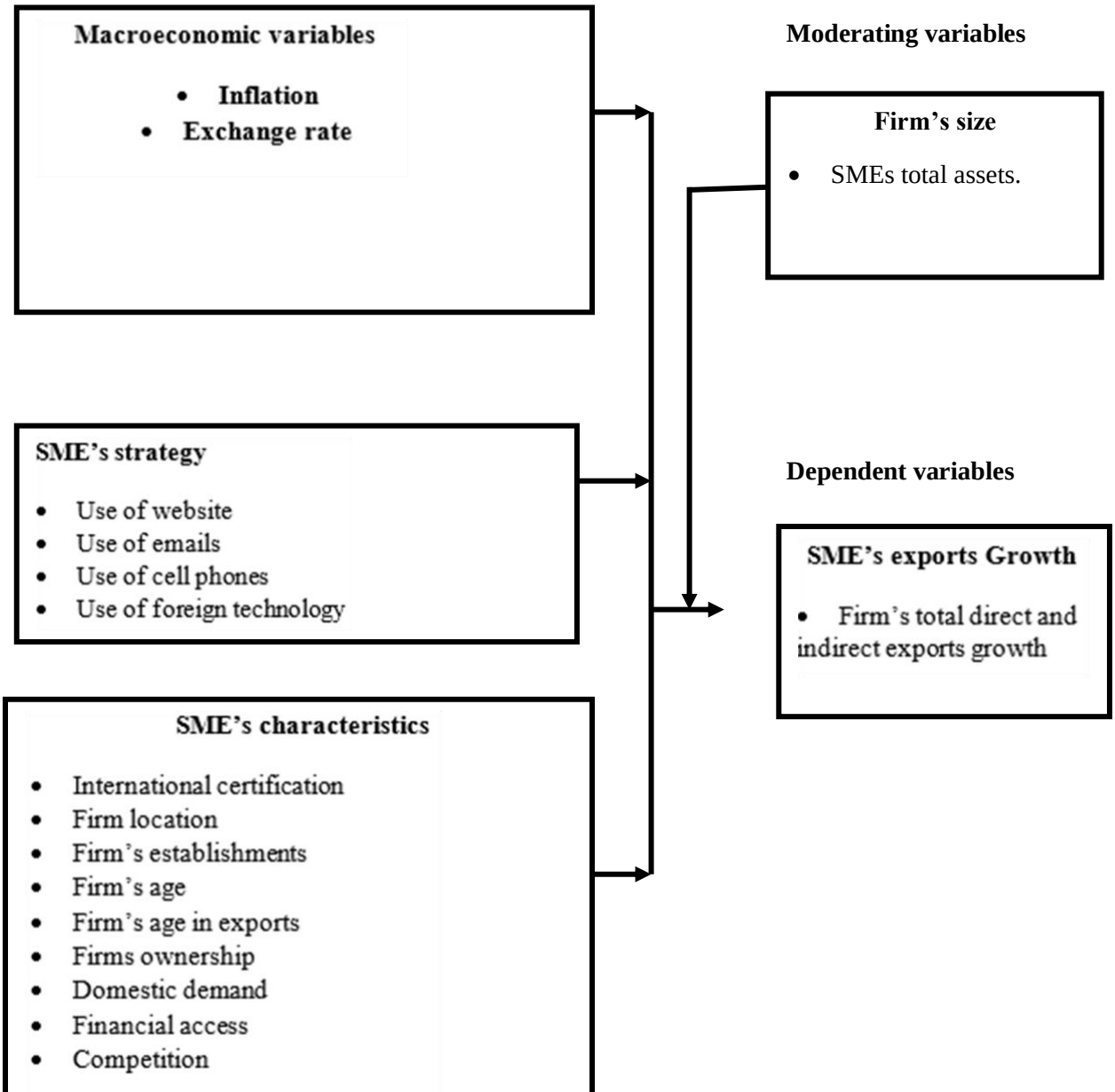
2.3 Conceptual framework

The conceptual framework used in this study links SME performance (in our case, we take the dimension of export performance) and inflation. Based on our literature review and the World

Bank Enterprise Survey data base that have been conducted previously (2007, 2013 and 2018) the following conceptual framework can be developed.

From Figure 1 below, the SME's export performance (which is proxied in this study as SME's export growth) is influenced by SME's internal characteristics (SME's location, SME's establishments, SME's age, SME's age in exports, SME's ownership, Domestic demand, Financial access, Competition), Use of ICT (utilizing of website, use of emails, use of cell phones and use of foreign technology) and macroeconomic variables such as exchange rate and inflation.

Figure 1: Conceptual Framework



2.4 Overview of literature

Based on both theoretical and empirical literature above, there exist a gap linking inflation and SME's export performance. Most studies have concentrated on the SME's strategy and export performance or internal firm level characteristics and SME's performance. Thus, the current study seeks to fill the knowledge gap by studying the SME's export performance using a panel survey data from the World Bank data set.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section of the research proposal, we delve into the methods that will be employed to fulfill the study objectives. Specifically, we present and discuss the conceptual and theoretical framework opining the study area and its estimable model, definition and source of the variables of interest as well as the pre-estimation and estimation techniques. We begin with the conceptual framework linking inflation with SME performance.

3.2 Theoretical Framework

To understand the link between inflation and SME performance, this study relies on both original Phillips curve and the augmented Phillips curve. To begin with, the original Phillips Curve predicted that lower unemployment rate was associated with higher inflation. That is, as inflation rate increases, the unemployment of resources (including those of SME) reduces. Intuitively, this implies that SMEs will likely increase the production of their exports. This relation is given as

P = $P^e(1+m)F(U_t, Z_t)$ ……(1)

Where

$F(U_t, Z_t)$ = 1-$\propto U_t + Z_t$ is the wage setting equation, P is the current price level, m is the mark cost, U_t is the current unemployment level, Z_t is the factors influencing wage setting equation.

Substituting the wage setting equation in original Phillips curve equation yield

P = $P^e(1+m)(1-\propto U_t + Z_t$)……(2)

Equation 2 reveals that general price level have an inverse relationship with unemployment level. Bringing the element expected inflation, the original Philips curve summarizes the inflation-unemployment relationship as

$\pi_t = \pi_t^e + (m + Z_t) - \propto U_t$ …….(3)

Where $\pi_t = \frac{p - p_{-1}}{p_{-1}}$ and $\pi_t^e = \frac{p^e - p_{-1}}{p_{-1}}$

From equation 3, we can observe that an increase in inflation would decrease unemployment rate. If SME producers perceive expect inflation to rise, will lead to current inflation to increase. Equally, if wage setters perceive expect inflation to rise, then they will negotiate for higher wages. This increase in the nominal wage will likely make production of SME' export costly which will further push general prices even higher. However, this relationship between unemployment and inflation was accurately predicting the inverse relationship till 1960s. This is because, according to Phillips curve, key stakeholders in the economy such as wage setters, SME producers and the consumers formed expectation based on between current inflation and expected inflation of the form

$\pi_t = \emptyset \pi_t^e$ ……(4)

And the $\emptyset = 0$

But as from 1970s, when the oil prices shock caused a persistent increase in inflation $\emptyset \neq 0$ and hence, this led to augmented Phillips curve of the following form

$\pi_t = \emptyset \pi_{t-1}^e + (m + Z_t) - \propto U_t$ …….(5)

Where $\emptyset \neq 0$

Rearranging equation 5 gives

$\pi_t - \emptyset\pi_{t-1}^e = (m + Z_t) - \propto U_t$ …….(6)

According to equation 6, an increase or decrease in unemployment rate will lead to a change in inflation rate $\pi_t - \emptyset\pi_{t-1}^e$ rather than inflation rate itself. This changes in inflation affects production (more so the exportable of the SME in an economy). In the short run, inflation will increase production of exports as SME producers take advantage of higher output prices. That is, the value of α_1 in equation 7 is positive.

$X_{it} = \alpha_0 + \alpha_1\pi_{it}$…….(Eqn 7)

However, in the long run, where workers form rational expectations, the value of α_1 in equation 7 is negative.

3.3 Model specification

The model outlined in equation 8 expands upon the theoretical framework detailed in subsection 3.2.

$$X_{it} = \alpha_0 + \alpha_1\pi_{it} + \alpha_2 Z_{it} + \alpha_3 S_{it} + U_i + U_j + \varepsilon \ldots (Eqn. 8)$$

Where X_{it} refers to the export growth by the ith SME at a given time period t, It is measured as a change in export quantities between the current and previous export in monetary terms.

π_{it} is the inflation in period t for each specific sector where the SME belongs while Z[1]it is firm characteistics.

U_i and U_j represent individual effects and specific panel effect respectively and ε represent the Error term while S_{it} is the firm's strategies used in export promotion such as use of ICT components for marketing. In summary, the dependent and independent variables and how they are measured is shown in the next subsection below.

3.4 Description of variables

Table 1: description of the exogenous and endogenous variables used in the study and their priori relationship

Variable	Definition	Measurement	Expected
Dependent variable			
SME export performance	This is the export growth for individual SME	It is measured as the current export value minus export value of previous year (i.e. $X_t - X_{t-1}$) in dollars	
Independent variable			
SME strategy			

[1] Z_{it} represents the firm characteristics which include the size of the firm, location, age and the number of years the firm has been exporting, the number of competitors, source of finance, the total number of entity establishments in the firms, the trend in the domestic demand of the main product produced, ownership of international certification and the nature of the firm's ownership by shareholding,

Mobile money utilization for payment	Refers to mobile money utilization by firms to make payments to suppliers	1 if yes, 0 otherwise	+
Mobile money utilization for receivables	Refers to mobile money utilization by firms to receive payments for sales	1 if yes, 0 otherwise	+
SME characteristics			
Technology licensed from foreign country	Refers to the utilization of technology licensed in the foreign nation by firms.	1 if yes. 0 otherwise	+
International certification	Refers to the firm having an international certification as a requirement to meet the international standards for exports	1 if yes. 0 otherwise	+
Location	Is the region of the establishment of the entity	1 if located in Central 2 if located in Nyanza 3 if located in Mombasa 4 if located in Nairobi 5 if located in Nakuru	+/-

Number of establishments	Is the total number of entity establishments in the firms	Total number of establishments that the firm has within the country	+
Age of the firm	This is the number of years a firm has been operational.	The difference in between the year the survey was conducted and the year the firm was established	+
Firm ownership	Is the nature of the firm's ownership by shareholding	1 if private domestic ownership 2 if private foreign ownership 3 if government/ state, 4 if others	+/-
Domestic demand	Refers to the trend in the domestic demand of the main product produced by the firm	1 if increased in 12 months, 0 otherwise	+/-
Macroeconomic variables			
Inflation	This is the general price increase in the SME origin country	This was measured as a dummy variable indicating whether inflation was a serious problem or not. Hence perception of inflation = 1 if not serious proble, 0 otherwise	-

Exchange rate	This is the real effective exchange rate	This is the rate at which the Kenyan shillings is trading with the SME export destination	+

Source: Author's Computation

3.5 Data Source and Type

Shall use panel data from WB enterprise survey wave 1-3 conducted in: baseline survey (2007), midline survey (2013), and end line survey (2018). The selection of this database is based on its comprehensive coverage of all the variables essential to the study model. The sample for the study will include 1001 enterprises (657 in 2007, 781 in 2013, and 1001 in 2018) within the manufacturing sector, representing 53.01 percent of the total enterprises surveyed.

3.6.Diagnostic Tests

These tests will include multicollinearity test, autocorrelation test, normality test and stationarity test. If these econometric problems are detected appropriate approaches will be used to correct them. A detailed discussion of these diagnostic tests is as below.

3.6.1. Normality Test

The error component in a conventional linear regression model must follow a normal distribution with a zero mean. This is a significant assumption since these error components have a linear dependence on the computed coefficients. Consequently, the resultant coefficients similarly follow a normal distribution with population parameter and population variance when the error terms exhibit a normal distribution with zero mean and variance. The error term (also known as the disturbance term) in the Classical Linear Regression (CLR) model must follow a normal

distribution with a mean of zero. Given that the estimated coefficients are a linear function of the error terms, this assumption is crucial. Within the formula:

$$Y=\beta X+\epsilon$$

where β computed as:

$$B^{\wedge} = (X'X)^{-1}[(X'Y)]$$

And $Y = \beta X + \epsilon$, therefore:

$$B^{\wedge} = (X'X)^{-1}[X'(\beta X + \epsilon)]$$

This simplifies to:

$$B^{\wedge} = (X'X)^{-1}[(X'X\beta)] + (X'X)^{-1}\epsilon$$

Thus, assuming that the error terms is i.i.d with a zero mean and variance, the estimated coefficients will also exhibit a normal distribution with population parameter and population variance. To test the normality test in this study, we shall use the Shapiro Wilk test with the following hypothesis: The null hypothesis posits normally distributed disturbance terms, while the alternative suggests non-normally distributed error terms (Wakyereza, 2017). That is

H_0: normality of error terms

H_1: non-normally of error terms

3.6.2. Multicollinearity Test

The use of linear regression models requires that the explanatory variables used in the regression should be linearly independent of each other. Perfect multicollinearity may lead to singularity of

the explanatory variable matrix. This has a potential of having no inverse of the (X'X) matrix. Recall, $\hat{\beta}=(X'X)^{-1}(X'Y)$. Thus linearly dependent variables may result to inconsistency of estimated parameters which cannot be relied on. In this study, we shall use the Variance Inflation Factor test.

3.6.3. Heteroscedasticity Test

When there is a difference in the errors among the independent variables, heteroscedasticity is present. The simple fact that they exist renders statistical significance tests worthless since they rely on the presumption of uncorrelated and consistent modeling errors. In order to prove the existence of heteroscedasticity, the Breusch-Pagan test was used (Khaled, Lin, Han, Zhao, & Hao, 2019). The homoscedasticity assumption is upheld if the p-value is greater than 0.05. When the homoscedasticity assumption is violated, the data are transformed and weighted least square regression is applied.

3.6.4. Unit Root Test

Macro-economic data is vulnerable to fluctuations, particularly due to the trending characteristics of time series data. To address potential spurious inferences, deterministic factors such as intercept and linear trend terms are included. The Augmented Dickey-Fuller (ADF) test, developed by Dickey and Fuller (1981), will be employed to evaluate the stationarity of the data. A series is deemed stationary when it exhibits restricted variance, a stable mean, tends to revert to the equilibrium mean value, and possesses an order of integration (I) equal to 0. Conversely, a series is considered non-stationary if there is covariance and an unstable mean. Non-stationary variables can be transformed into stationary ones through differencing to achieve an order of integration (I) equal to 0.

ADF test hypothesis are;

$H_0: \beta = 0$ (Non-stationary series)

$H_1: \beta \neq 0$ (Stationary series)

.

3.6.5. Cointegration Test

After establishing stationarity, the analysis will progress to investigate the existence of short-run and long-run relationships among the variables, employing the Autoregressive Distributed Lag (ARDL) Bounds test. Originally introduced by Pesaran and Shin (1999), expanded upon by Pesaran et al. (2001), and subsequently enhanced by McNown et al. (2018), the ARDL model is regarded as more advantageous than Johansen and Juselius (1992) and Engle and Granger (1987). This model is applicable to series integrated of orders I (0), I (1), or fractionally, showcasing its versatility. Moreover, it proves to be unbiased and more efficient in both small and large datasets (Ali et al., 2021; D. Asteriou et al., 2021). The test adheres to the F-distribution outlined by Narayan and Narayan (2005) and incorporates critical values suggested by Pesaran and Timmermann (2005). The Augmented ARDL involves t-tests and F-tests on the coefficients of lagged variables.

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CHAPTER FOUR
DATA ANALYSIS, RESULTS, AND DISCUSSION

4.1 Introduction

In this chapter, we unveil the outcomes of our analysis and delve into a comprehensive discussion of the findings. We commences with an in-depth exploration of our dataset, utilizing descriptive statistics. The robustness and dependability of our findings are then confirmed by introducing diagnostic tests, such as the analysis of a correlation matrix, multicollinearity tests, and heteroscedasticity tests. In addition, we do post-estimation analyses after pre-estimation tests, like the unit root test, to determine whether the variables are stationarity. The Hausman Test and the Poolability Test are two of these post-estimation tests that are essential for deciding between fixed effect and random effect models or pooled Ordinary Least Squares (OLS) against OLS. We hope to test and reinforce the integrity of our analytical framework with this methodical approach.

4.2 Descriptive statistics

The findings presented in Table 2 indicate that the average export intensity, serving as a proxy for export performance, was approximately 4.20% in 2007. There was a notable enhancement in SMEs' export performance in 2013, with an export intensity of 29.97%. However, in comparison to 2013, there was a overall decline in export intensity in 2018, registering at 10.99%. This implies that export performance of SMEs in Kenya is highly volatile and this could be due to (i) Economic and Political Instability: Kenya, like many countries, may experience economic and political fluctuations. Changes in government policies, elections, or economic downturns can significantly impact SMEs, leading to fluctuations in export performance (ii) Global Market Dynamics: SMEs are often sensitive to changes in the global market. Shifts in demand, currency exchange rates, or

international trade policies can cause abrupt changes in export performance (iii) Dependency on Specific Markets: If SMEs heavily rely on a few key export markets, any disruptions or changes in those markets can have a disproportionate impact on their overall export performance. Diversification in target markets can help mitigate this risk. (iv) Industry-Specific Challenges: Certain industries may face specific challenges such as changes in commodity prices, regulatory hurdles, or technological disruptions. SMEs operating in these industries may experience higher volatility in export performance. (v) Limited Resources and Capacity: SMEs often have limited resources and capabilities compared to larger enterprises. This can make them more vulnerable to external shocks, as they may lack the capacity to absorb and navigate through challenges effectively (vi) Adaptability and Innovation: SMEs that struggle to adapt to changing market conditions or embrace innovative practices may find it challenging to maintain consistent export performance. Flexibility and innovation are crucial for long-term stability (vii) Access to Finance: Limited access to finance can hinder SMEs' ability to weather economic uncertainties. Adequate financial support is essential for them to invest in technology, expand operations, and withstand market fluctuations (viii) Supply Chain Disruptions: SMEs may face disruptions in their supply chains, affecting production and, consequently, export capabilities. Events like natural disasters, pandemics, or geopolitical tensions can disrupt supply chains and impact export performance.

Thus to enhance the stability of SMEs' export performance, strategies such as diversifying markets, improving adaptability, and strengthening financial resilience can be crucial. Additionally, government policies that promote a stable economic environment and provide support to SMEs can play a significant role in mitigating volatility.

Turning to mobile money utilization, the study reveals a notable shift. In 2007, none of the sampled firms received payments through mobile transactions. However, by 2013, an average of about 68.97% of firms in the sample were receiving payments through mobile money, which further improved to about 87.19% in 2018, indicating a growing convenience in this mode of payment. Conversely, about 50% of firms were observed to use mobile money for paying suppliers, with a marginal decrease from 50% in 2013 to 47.03% in 2018. The use of mobile money for payments in the context of SMEs engaged in exporting offers several valuable benefits: (i) Mobile money provides a convenient and accessible platform for SMEs engaged in export activities. It eliminates the need for physical presence at banks or other financial institutions, allowing for quicker and more efficient transactions. (ii) Traditional banking transactions, especially for international trade, can incur significant fees. Mobile money transactions often have lower costs, making it a cost-effective option for SMEs looking to minimize expenses associated with payment processing (iii) Mobile money transactions are typically faster than traditional banking methods. This speed is particularly advantageous for SMEs engaged in exporting, where timely payments and transactions are crucial for maintaining smooth operations and cash flow. (iv) Mobile money services contribute to financial inclusion by providing SMEs with a digital financial platform. This is especially relevant in regions where access to traditional banking services may be limited. It empowers SMEs to participate more actively in the global market (v) Mobile money transactions are often secured through encryption and authentication measures, reducing the risk of fraud compared to traditional payment methods. This security is vital for SMEs engaged in cross-border trade, where fraud risks can be higher. (vi) For SMEs involved in international trade, mobile money platforms may offer flexibility in currency exchange. This can simplify the process of dealing with multiple currencies and facilitate cross-border transactions. (vii) Mobile money platforms provide

digital records of transactions, offering SMEs a transparent and easily accessible record-keeping system. This can be valuable for financial management, auditing, and compliance purposes. (viii) The use of mobile money streamlines payment processes, reducing administrative burden for SMEs. This efficiency is especially crucial for small businesses with limited resources, allowing them to focus more on core business activities and (ix) Embracing mobile money aligns SMEs with digital trends and modern business practices. This can enhance their competitiveness in the global market and attract partners and customers who prefer digital payment solutions.

The value of having a firm website for SMEs engaged in export performance is significant and can contribute to various aspects of their business: (i) A firm website serves as a global storefront, providing SMEs with the opportunity to showcase their products or services to a worldwide audience. This increased visibility can attract potential international customers and partners, enhancing the SME's export opportunities (ii) Having a well-designed and professional-looking website enhances the credibility of SMEs in the eyes of potential international clients. It conveys a sense of professionalism and stability, which is crucial for building trust in the global market (iii) A website allows SMEs to reach new markets and customers beyond their local or national boundaries. This expansion of the target market can contribute to increased export sales and business growth (iv) Unlike traditional brick-and-mortar establishments with limited operating hours, a website is accessible 24/7. This constant availability facilitates international transactions, enabling SMEs to engage with customers from different time zones at any time (v) A website serves as a centralized platform for communication and information dissemination. SMEs can provide detailed product information, pricing, shipping details, and contact information, making it easier for potential customers and partners to engage with them (vi) An online presence allows SMEs to implement digital marketing strategies to promote their products or services. Through the

website, SMEs can engage in content marketing, social media integration, and other online promotional activities to strengthen their brand and attract international customers and (vii) The website can be used as a tool for customer relationship management. SMEs can incorporate features such as online chat, customer feedback forms, and newsletters to establish and maintain relationships with international clients and (viii) For SMEs involved in the export of physical goods, an e-commerce-enabled website provides a platform for online sales. This direct-to-consumer approach can streamline the export process and eliminate intermediaries, improving profit margins.

The use of international technology by SMEs can indeed have a positive impact on their export performance. For instance, International technology often comes with advanced tools and systems that can significantly enhance the productivity and efficiency of SMEs. Streamlining operations and production processes can contribute to better export performance. Equally, utilizing international technology can provide SMEs with the tools and platforms needed to access and navigate global markets. This includes e-commerce platforms, digital marketing tools, and other technologies that facilitate international trade. Additionally, Adopting international technology can contribute to product quality and innovation. Incorporating cutting-edge technology into product development can make SMEs more competitive in the global marketplace, attracting international customers. Further, Technology can optimize supply chain management for SMEs involved in export. This includes inventory management, logistics, and communication systems, which can contribute to smoother international transactions or International technology facilitates seamless communication and collaboration on a global scale. This is crucial for SMEs working with international partners, suppliers, and customers, enhancing overall efficiency and effectiveness in the export process.

SMEs had an average firm statement of about 5 branches in 2013 and an average of 6 in 2018. This implies that between the two periods, there was an expansion of branches among some SMEs. However, an increase in the number of SME establishments can have both positive and nuanced implications for their export performance. For example, with more establishments, SMEs may have the capacity to diversify their product offerings and target markets. This diversification can contribute to a more robust and resilient export strategy or a higher number of establishments typically means increased production capacity. This can enable SMEs to meet larger export orders, take advantage of economies of scale, and compete more effectively in international markets. Equally, multiple establishments can contribute to a more resilient supply chain. In the face of disruptions, having diverse production facilities can help SMEs maintain continuity in operations and fulfill export commitments. Additionally, if the new establishments are located strategically, they may facilitate geographical expansion. This expansion can help SMEs access new markets, reduce transportation costs, and respond more effectively to regional market demands. Further, with an increased number of establishments, SMEs may implement efficient production and distribution systems. This operational efficiency can positively impact export performance by reducing lead times and improving overall service to international clients.

On the other hand, managing multiple establishments can present coordination challenges. SMEs need effective management and communication strategies to ensure coherence in operations and maintain consistent product quality across different locations. Further, Establishing and maintaining additional facilities require financial investment. While it may lead to long-term gains, SMEs need to carefully manage the financial implications and ensure that the benefits outweigh the costs. Therefore, while an increase in the number of SME establishments has the potential to positively impact export performance, careful planning, strategic management, and adaptation to

market conditions are essential. It's crucial for SMEs to assess their specific context, market dynamics, and organizational capacity to determine the most effective approach to expansion and its implications on export activities.

Domestic demand for the main product exhibited mixed episodes of increase and decrease. The sustained decline in episodes of increasing domestic demand from about 73% in 2007 to approximately 45% in 2018 was noteworthy. However, episodes of unchanged domestic demand increased over time, from 13% in 2007 to about 32% in 2018.

Lastly, the main variable of interest, perception of inflation was found to affect about 78.57% of SMEs in 2013. In 2018, about 90.34% of the SMEs reported that inflation had affected their export performance. The impact of inflation on SMEs' export performance can be multifaceted, influencing various aspects of their operations and competitiveness in the global market. For example, inflation can lead to an increase in the cost of raw materials, labor, and other production inputs. For SMEs involved in export, this can raise the overall cost of production, potentially impacting profit margins and pricing competitiveness in international markets. Inflation is often associated with changes in exchange rates. Equally, currency depreciation, driven by inflation, can affect the competitiveness of exports. SMEs may find that their products become more expensive for foreign buyers, potentially leading to a decline in demand. Further, inflationary pressures may compel SMEs to adjust their pricing strategies. They may face challenges in balancing the need to cover increased costs with the imperative to remain competitive in the global market. Striking the right balance is crucial for maintaining export volumes. Additionally, Inflation can impact the financial stability of SMEs, particularly if they are carrying debt. Rising interest rates, often associated with inflation, can increase borrowing costs and affect the overall financial health of

SMEs engaged in export activities. Further, inflation can influence consumer purchasing power both domestically and internationally. If inflation erodes consumer confidence and reduces spending, SMEs may experience a decline in demand for their export products, affecting overall export performance. Lastly, inflationary pressures can disrupt global supply chains, affecting the timely availability of inputs for SMEs. Delays in the supply chain can lead to production inefficiencies and impact the ability to meet export deadlines. Thus the impact of inflation on SMEs' export performance is interconnected with various economic factors. Successful navigation of these challenges requires proactive financial management, strategic planning, and a keen understanding of market dynamics to ensure sustained competitiveness in the global marketplace

Table 2: Descriptive Statistics

Variable	2007	2013	2018
Export (%)	4.204981 (12.58454)	27.97403 (42.33543)	10.98516 (27.71239)
mobile_money_receivables (1/0)	--	.6896552 .4708236)	.8718929 (.334529)
mobile_money_payments (1/0)	--	.4285714 (.5039526)	.4359465 (.4963549)
Firm Website (1/0)	--	.5 (.5091751)	.4703633 (.4995987)
Technology from Foreign (1/0)		.2 (.4140393)	.1569767 (.364841)
International Certification (1/0)		.5 (.5091751)	.1185468 (.323564)
Location			
• Nakuru	.1248097 (.3307549)	.1144414 (.3185637)	.09826 (.2978183)
• Kisumu	.130898 (.3375458)	.126703 (.3328668)	.0696008 (.2546034)
• Nairobi	.6118721 (.4876952)	.4482289 (.4976516)	.3039918 (.4602147)
• Kirinyaga		.020436 (.1415827)	.0747185 (.2630713)
• Kiambu		.0490463 (.216112)	.1064483 (.3085685)

• Nyeri		.0326975 (.1779651)	
• Murang'a		.0190736 (.1368769)	
• Kilifi			.0696008 (.2546034)
• Machakos			.0706244 (.2563275)
• Trans Nzoia			.0409417 (.1982566)
• Uasin Gishu			.0706244 (.2563275)
Firm Size			
• Small (5-19 Employees)	.5977011 (.490832)	.6753247 (.471324)	.5222672 (.4998413)
• Medium (20-99 Employees)	.4022989 (.490832)	.3246753 (.471324)	. .4777328 (.4998413)
Number of Establishments	--	4.857143 (5.816415)	5.475248 (21.5836)
Firm Ownership (1/0)			
• Private_domestic_owned	12.66667 (12.42364)	77.39286 (38.08309)	90.85851 (26.57252)
• Private_foreign_owned		13.5 (30.36262)	8.068834 (25.34088)
• State_owned		1.071429 (3.149704)	.1338432 (3.060886)
Domestic Demand			
• increased	0.729798 (0.657211)	0.5523151 (1.20456)	0.4523151 (0.20456)
• decreased	.1363636 (.3436084)	.1903945 (.3929495)	.1803905 (.3929495)
• Unchanged	.1338384 (.3409093)	.2572899 (.4375159)	.3172899 (.4375159)
Perception on inflation	--	.7857143 (.4178554)	.9034749 (.2955955)

4.3 Diagnostic tests

4.3.1 Correlation Matrix

Our computation of the correlation matrix was driven by two primary rationales. Firstly, it aimed to unveil the patterns within the variables of interest, shedding light on whether they exhibited

positive or negative correlations. Secondly, the computation served as a diagnostic check to assess the feasibility of conducting a linear regression analysis for our study.

In examining the pattern of correlations, our interest was to discern the nature of relationships between variables. The diagnostic check was grounded in the theoretical premise that highly correlated variables could introduce unreliability in linear regression estimates. Figure 4.0, as presented in our analysis, reveals that all variables of interest exhibit low correlations, each falling below the 50% threshold. This suggests that linear regression estimates can be considered reliable in our context

Figure 1: correlation Matrix

	exp	Mobile~s	mob_pa~t	f_webs~e	t_from~n	i_cert	locatn	n_estab	age	P~dome~d	P~fore~d	State_~d	Inflat~n	Domest~d
exp	1.0000													
Mobile_Rec~s	-0.3176	1.0000												
mob_payment	-0.2772	0.3273	1.0000											
f_website	-0.2059	0.3393	0.2182	1.0000										
t_from_forgn	0.0261	-0.1336	-0.0680	-0.2004	1.0000									
i_cert	-0.2059	0.0714	0.2182	0.4643	0.4677	1.0000								
locatn	0.1914	-0.0058	0.2042	-0.4737	-0.2284	-0.3865	1.0000							
n_estab	-0.0163	-0.3330	-0.4070	-0.5162	-0.1869	-0.4663	0.1436	1.0000						
age	-0.2175	0.2741	0.3943	0.3173	-0.3535	-0.0398	0.3424	-0.2317	1.0000					
Private_do~d	0.2242	-0.1236	0.2725	0.1236	0.0910	0.2453	-0.2847	-0.2703	-0.2986	1.0000				
Private_fo~d	-0.1530	0.0890	-0.3679	-0.0890	-0.0784	-0.3639	0.2693	0.5468	0.0547	-0.6504	1.0000			
State_owned	0.0973	0.0262	-0.3203	-0.0262	0.7845	0.3669	-0.2858	-0.1711	-0.1763	-0.0327	-0.0038	1.0000		
Inflation	0.2047	0.2619	0.4924	0.6447	-0.0754	0.3425	-0.2000	-0.6387	0.0067	0.4619	-0.3042	-0.2070	1.0000	
Domestic_D~d	-0.2248	0.0442	-0.2027	-0.0442	-0.3310	-0.3760	-0.2124	0.5466	-0.0385	-0.0929	0.1881	-0.2597	-0.3493	1.0000

4.3.2 Multicollinearity test

Table 3 (a) firm website, stated owned and location were found to suffer from serious multicollinearity since their VIF was greater than the threshold 10. Thus we dropped them and in panel (b), multicollinearity was not a serious problem in our data set.

Table 3: VIF Multicollinearity Test:

(a)

Variable	VIF	1/VIF
f_website	11.69	0.085524
State_owned	10.76	0.092942
locatn	10.35	0.096588
Private_fo~d	7.72	0.129490
n_estab	7.51	0.133235
t_from_forgn	6.83	0.146460
Inflation	5.39	0.185556
age	5.34	0.187399
Mobile_Rec~s	4.83	0.206988
mob_payment	4.60	0.217244
Private_do~d	3.06	0.326927
Domestic_D~d	3.05	0.328150
i_cert	2.82	0.354544
Mean VIF	6.46	

(b)

Variable	VIF	1/VIF
n_estab	6.58	0.151992
Inflation	4.97	0.201081
Private_fo~d	4.93	0.202898
mob_payment	2.96	0.338121
Private_do~d	2.89	0.346358
t_from_forgn	2.57	0.388985
age	2.49	0.401570
Domestic_D~d	2.38	0.419443
locatn	2.23	0.447623
i_cert	2.08	0.479917
Mobile_Rec~s	1.80	0.555362
Mean VIF	3.26	

4.3.3 Heteroscedasticity test

Based on the p values that were greater than p critical value of 0.05, we thus failed to reject the null hypothesis of homoscedasticity and concluded that there was no presence of heteroscedasticity.

Figure 2: Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of exp

         chi2(1)      =     1.07
         Prob > chi2  =   0.3019
```

4.3.4 Poolability test

Selecting between a pooled OLS model and a fixed effect panel model is the first step towards selecting the right model for static panel data. We used a poolability test to do this. In order to determine if all fixed effects are jointly equal versus at least one fixed effect, we may use the F test. In other words, the alternative hypothesis contends that at least one alpha i is different from the null hypothesis, which holds that all alpha i's are equal. We end there and determine that the pooled panel is the proper model for the dataset if we are unable to reject H0, which occurs when the p-value is high. However, we reject H0 and the F test if the p values are small.

Figure 3: Used Chow's Poolability test

```
     sigma_u |  .39056701
     sigma_e |  .08332537
         rho |  .95646559   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(55, 500) = 23.73                     Prob > F = 0.0000
```

4.3.5 Hausman Test for Fixed and Random Effect

This test was used to evaluate the suitability of the two models (fixed effect and random effect) for our collection of data. This test pits alpha i is CORRELATED with the explanatory factors against the null hypothesis that alpha i is UNCORRELATED with the explanatory variables. Based on Figure 4's outcome, we determine that the random effect model fits our data set and do not reject the null hypothesis.

Figure 4: Hausman Test for Fixed and Random Effect

```
                            b = consistent under Ho and Ha; obtained from xtreg
             B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         1.09
                Prob>chi2 =       0.2964
                (V_b-V_B is not positive definite)
```

4.4 Random effect regression results

Table 4 presents the outcomes derived from a random effect model, chosen after a Hausman test failed to reject the null hypothesis of alpha i being uncorrelated with explanatory variables, as opposed to alpha i being correlated. Additionally, for robustness, the results were compared with pooled OLS.

The finding reveals that contrary to our priori expectation of inflation negatively affecting the export performance of SMEs, we found that holding all other factors constant, a positive

perception of inflation improved SMEs' export by about 57.07%. The perception of inflation can have both direct and indirect impacts on the export performance of Small and Medium Enterprises (SMEs). For instance a positive perception of inflation, especially if it is moderate and stable, may lead to increased confidence among SMEs. This confidence can translate into strategic decisions such as expansion and investment in technology. As SMEs upgrade and streamline their operations, they can enhance cost efficiency, making their products more competitively priced in the international market. Equally, inflation is often linked to currency values. A perception of controlled inflation may contribute to a stable currency, making it more predictable for SMEs engaged in international trade. A stable currency reduces the uncertainty associated with exchange rate fluctuations, enabling SMEs to plan and price their exports more effectively. Additionally, a positive perception of inflation might encourage financial institutions to offer more favorable lending terms to SMEs. Lower interest rates, as a response to controlled inflation, can reduce the cost of capital for SMEs. With easier access to finance, SMEs can invest in technology, market research, and product development, all of which are crucial for enhancing export capabilities. Further, inflation, when perceived positively, can contribute to overall economic stability and boost consumer confidence. When consumers are confident in the stability of prices, they are more likely to spend, both domestically and on imported goods. This increased domestic consumption can positively impact SMEs' production capacity and, consequently, their ability to meet international demand.

The findings indicate that holding all other factors constant, firms opting to use mobile money for supplier payments experienced a roughly 0.84% decline in export performance. This finding contradict the work by Gosavi (2018), suggesting a positive association between digital payment methods and export growth. Surprisingly, if firms opted for mobile money to receive payments

from customers, their export value decreased by approximately 52%, contrary to expectations and prior research indicating a positive link between digital payments and export growth (Gosavi, 2018; Hughes & Lonie, 2007; Maurer, 2012). The plausible reason behind this observation could lie on: (i) Mobile money systems may not be universally accepted or easily integrated into international financial transactions. Suppliers or customers in the global market may prefer traditional banking channels or other internationally recognized payment methods. This limited acceptance can hinder the smooth flow of transactions and potentially restrict the export capabilities of SMEs (ii) Mobile money systems may pose challenges in terms of currency conversion. International trade often involves transactions in multiple currencies, and mobile money platforms may not provide efficient or cost-effective solutions for converting funds. This can result in additional fees and complexities, negatively impacting the financial aspects of export transactions for SMEs. (iii) International trade involves a higher level of perceived risk and security concerns. Mobile money systems, while convenient for domestic transactions, may be perceived as less secure or more prone to fraud in the context of cross-border trade. This perception can lead to a lack of trust among international partners, affecting the willingness of SMEs to engage in and expand their export activities (iv) Mobile money transactions often come with limits on the amount of money that can be transferred. For SMEs involved in larger export transactions, these limits may be restrictive. Additionally, the costs associated with mobile money transactions, especially across borders, can be relatively higher compared to traditional banking methods, reducing the cost-effectiveness of using mobile money for international trade and (v) International trade involves adherence to complex regulatory and compliance standards. Mobile money systems may not seamlessly integrate with these requirements, leading to delays and complications in cross-border transactions. SMEs may face challenges in meeting the regulatory standards of both

their home country and the countries they are exporting to, affecting the efficiency of their export operations.

Moreover, fluctuations in domestic demand for the main product significantly affect export levels. A decrease in domestic demand leads to a 37.38% decline in export performance, while a constant demand declined export performance by 15.47% compared to an increase in domestic demand. This finding resonates with studies by Baccaro & Benassi (2017) and Moon (2015), highlighting the critical role of domestic demand in a firm's export behavior. The plausible reason behind our observation are (i) A decline or stagnation in domestic demand often leads to decreased production scales for SMEs. When domestic sales are not growing, SMEs may scale down their production to avoid excess inventory. This reduction in production volume can limit the ability of SMEs to meet the quantity demands of international markets, potentially hindering export performance. (ii) SMEs may struggle to achieve economies of scale when domestic demand is stagnant or declining. Exporting often requires efficiency in production processes to compete on an international level. Reduced production volumes can result in higher per-unit production costs, making it challenging for SMEs to offer competitive pricing in the global market. (iii) In the face of weak domestic demand, SMEs may face challenges in allocating resources effectively. Limited financial resources may be directed towards maintaining the existing domestic operations rather than investing in market research, international marketing strategies, or product adaptation for foreign markets, hindering the expansion of export activities. (iv) Declining or unchanged domestic demand may lead to a lack of incentive for SMEs to invest in innovation and new product development. This lack of innovation can make it difficult for SMEs to offer unique products or adapt existing ones to meet the preferences of international customers, limiting their competitiveness in global markets and (v) Weak domestic demand may result in reduced marketing budgets for SMEs. Building a

strong international brand presence and marketing products effectively in foreign markets require significant investment. SMEs facing challenges in the domestic market may not allocate sufficient resources to international marketing efforts, affecting their visibility and success in export markets

The study also touches upon the influence of technology from foreign sources, indicating a positive association with export performance of SMEs. For instance, holding all other factors constant, using foreign technology licensed by SMEs increased SMEs export performance by 29.83%, while having international certification to meet export standards declined SMEs export performance by about 31.19%. These findings conform to the study by Battaglia et al. (2018) but disagree with Forslid et al. (2018), suggesting that foreign technology may encourage domestic sales rather than exports. Plausibly, (i) Foreign technologies often come with advanced and efficient processes that can streamline the production and operational workflows of SMEs. Improved efficiency enables SMEs to enhance productivity, reduce costs, and meet international demand more effectively, contributing to improved export performance (ii) Technology from foreign sources often brings cutting-edge innovations and best practices to SMEs. This infusion of new ideas and technologies allows SMEs to stay competitive in global markets by offering innovative products and services. This adaptability is crucial for meeting the dynamic demands of international customers and staying ahead of global competition (iii) Adopting technology from foreign sources can lead to improvements in product quality and consistency. Meeting or exceeding international quality standards is essential for gaining customer trust and building a positive reputation in export markets. Enhanced product quality contributes to increased customer satisfaction and loyalty (iv) Foreign technologies may be designed with global compatibility, making it easier for SMEs to enter and navigate international markets. This adaptability facilitates smoother integration with international supply chains, compliance with global standards, and an overall improved ability to

conduct business on a global scale (v) The adoption of foreign technology often involves knowledge transfer and training programs. SMEs can benefit from acquiring new skills and expertise that are essential for utilizing the technology effectively. This knowledge transfer not only enhances the capabilities of the workforce but also contributes to the overall competitiveness of SMEs in the global market (vi) Foreign technologies may offer cost-effective solutions and optimization tools that enable SMEs to manage resources more efficiently. This can include inventory management systems, production planning software, and supply chain optimization tools. Cost reduction and resource optimization contribute to improved financial sustainability, crucial for successful international trade (vii) Foreign technologies often come with communication and collaboration tools that facilitate seamless interaction with international partners, suppliers, and customers. Efficient communication is essential for managing global supply chains, addressing customer needs, and building strong business relationships, ultimately contributing to improved export performance. n conclusion, the adoption of technology from foreign sources empowers SMEs with the tools and capabilities needed to thrive in the competitive landscape of international trade. It not only enhances operational efficiency and product quality but also positions SMEs to adapt to global trends and meet the diverse demands of international markets, ultimately contributing to improved export performance

The number of establishments within a firm was found to have a significant influence, with an additional establishment marginally increasing export performance by about 8.18%. This corresponds with the work of Merino et al. (2015), emphasizing the direct association between the

number of establishments and a firm's export level. This is plausibly due to (i) Multiple establishments allow SMEs to diversify their product and service offerings. This diversification enables them to cater to a broader range of international markets and respond to varying demands. A diverse product and service portfolio enhances the competitiveness of SMEs in the global market, contributing to improved export performance (ii) Having multiple establishments allows SMEs to establish a physical presence in different regions or countries. This physical presence enhances accessibility to local markets and facilitates stronger connections with customers, suppliers, and partners in those regions. A widespread market presence can lead to increased export opportunities and improved performance in diverse geographic areas. (iii) Multiple establishments provide SMEs with greater flexibility in managing their supply chains. This flexibility is crucial for adapting to changing market conditions, mitigating risks, and responding to the specific requirements of different international markets. A well-managed and flexible supply chain contributes to enhanced export performance. (iv) Establishments in different locations allow SMEs to localize production to meet the specific needs and preferences of local markets. This adaptability is vital for addressing cultural differences, regulatory requirements, and market trends in various regions. Localized production increases the relevance and appeal of SMEs' products in international markets. (v) Distributing operations across multiple establishments can mitigate risks associated with economic, political, or environmental factors in a particular region. If one location faces challenges, other establishments can continue operations, reducing the overall impact on the business. Risk mitigation strategies contribute to the resilience and sustainability of SMEs in international trade. (vi) Establishments in different regions provide SMEs with access to local talent pools and resources. Utilizing local expertise enhances the ability of SMEs to understand and navigate diverse markets. Access to local resources, such as raw materials or specialized skills,

contributes to operational efficiency and competitiveness in the global market (vii) Multiple establishments strategically located can optimize logistics and distribution networks. This efficiency is essential for timely delivery of products to international customers, reducing lead times and transportation costs. A well-designed logistics network enhances the reliability and attractiveness of SMEs in the global marketplace.(viii) Establishments in various locations facilitate effective customer relationship management. Proximity to customers allows SMEs to provide personalized services, address customer inquiries promptly, and build stronger relationships. Positive customer relationships are integral to sustaining export performance and securing repeat business in international markets. (ix) Multiple establishments contribute to economies of scale, especially when they operate in coordination. The combined output of different establishments can lead to cost efficiencies in production, procurement, and distribution. Economies of scale enhance the cost competitiveness of SMEs in international markets, positively influencing export performance. In conclusion, the number of establishments within SMEs enhances their ability to navigate the complexities of international trade by providing flexibility, adaptability, risk mitigation, and operational efficiency. This, in turn, contributes to improved export performance and sustainability in the global marketplace.

The age of the firm also emerges as an influential factor, with an additional year increasing export performance of SMEs by approximately 0.41%. This confirms findings by Dosi et al. (2015), Stucki (2016), and Quartey et al. (2017). Plausible this is because (i) Older SMEs often have accumulated industry knowledge and experience. This depth of understanding allows them to navigate complex international markets more effectively. They are familiar with market trends, customer preferences, and regulatory environments, contributing to strategic decision-making and improved export performance. (ii) Over time, older SMEs tend to build extensive business

networks, both domestically and internationally. These established networks facilitate access to suppliers, distributors, and partners in various regions. Strong connections enhance the SMEs' ability to navigate global markets, identify opportunities, and establish successful export relationships. (iii) The age of an SME contributes to the establishment of a brand reputation and trust in the market. Older businesses have had the opportunity to build a track record of reliability, quality, and consistency. A positive reputation enhances the trust of international customers, making it easier for the SME to enter and succeed in foreign markets. (iv) While age is often associated with experience, older SMEs can also be adaptive and innovative. Over the years, they may have implemented new technologies, processes, and business models to stay competitive. This adaptability allows them to respond to changing market dynamics and innovate in product development or marketing strategies, contributing to export success (v) Older SMEs are likely to have a better understanding of regulatory compliance requirements in various markets. Navigating complex international regulations is crucial for successful exports. The experience gained over the years helps SMEs comply with diverse regulatory frameworks, reducing the risk of legal and compliance issues that could hinder export activities (vi) The age of an SME is often correlated with financial stability. Older businesses may have built up financial reserves, access to capital, or established credit relationships. Financial stability provides the resources needed for market research, international expansion, and investment in export-related activities, contributing to improved export performance. (vii) Older SMEs are more likely to have a base of loyal customers accumulated over the years. Repeat business from satisfied customers is a valuable asset in the context of export performance. Loyal customers may act as advocates for the SME in international markets, facilitating market entry and sustaining long-term success (viii) Older SMEs often have a history of export experiences, including successes and challenges. Learning from past

experiences allows them to refine strategies, avoid pitfalls, and capitalize on opportunities in subsequent export endeavors. This accumulated knowledge enhances the efficiency and effectiveness of export operations. (ix) Older SMEs are more likely to have a long-term vision and strategic planning in place. A clear vision and strategic approach contribute to sustained efforts in international markets. Long-term planning allows SMEs to set realistic export goals, invest in necessary resources, and build enduring relationships with international stakeholders and (x) Established SMEs often attract and retain skilled employees. A skilled workforce is crucial for international trade, as it ensures that the SME has the expertise needed for product development, marketing, logistics, and customer service in diverse international markets. A skilled workforce positively influences export performance. In summary, the age of an SME brings a wealth of experience, established networks, and a strong foundation that positively influences its ability to succeed in international markets. While younger businesses may also thrive in exports, the longevity of older SMEs provides unique advantages in terms of knowledge, reputation, and adaptability, contributing to sustained export performance.

Table 4: Random Effect Models Results

VARIABLES	(Model 1) Random effect	(Robustness check) Pooled OLS
mobile_money_payments	-.8385034*** (.0120712)	-.8385034 *** (.0120712)
mobile_money_receivables	-52.94189*** (.0139343)	-52.94189*** (.0139343)
Domestic Demand		
• decreased	-37.38151*** (.0429947)	-37.38151*** (.0429947)
• Unchanged	-15.47249*** (.0166666)	-15.47249*** (.0166666)
Inflation	57.06626*** (.0341859)	57.06626 *** (.0341859)
Private domestically owned	**-.1534138** *** **(.0001457)**	**-.1534138** **(.0001457)**

Private foreign owned	-.8960801***	-.8960801***
	(.0002627)	(.0002627)
Firm phone		
Technology from Foreign	29.83422***	29.83422***
	(.0188623)	(.0188623)
International Certification	-31.18637***	-31.18637***
	(.0163242)	(.0163242)
Location	3.084565***	3.084565***
	(.0029792)	(.0029792)
Number of Establishments	8.176878***	8.176878***
	(.0038326)	(.0038326)
Age	.4105584***	.4105584***
	(.0002432)	(.0002432)
Constant	-38.55115***	-38.55115***
	(.0737917)	(.0737917)
R-squared		0.8312

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter encapsulates the summary and conclusions drawn from the pivotal discoveries of our study. Following this synthesis, we delve into potential policy implications aimed at the primary beneficiaries of these findings. In conclusion, we propose areas worthy of further exploration, acknowledging the inherent limitations of our study.

5.2 Summary of finding

The motivation to study the impact of inflation on SMEs' export performance stems from the desire to enhance the resilience, competitiveness, and success of SMEs in the dynamic landscape of international trade. The findings have far-reaching implications for various stakeholders, from policymakers shaping economic strategies to entrepreneurs navigating the complexities of the global marketplace. Thus this study sought to assess the impact of inflation on the performance of Small and Medium Enterprises (SMEs) in Kenya, focusing specifically on its influence on the export growth of SMEs and to draw policy implications from its findings.

To achieve these objectives, the study utilized secondary panel data sourced from the World Bank Enterprise Survey for the years 2007, 2013, and 2018, chosen for its comprehensive coverage of relevant variables. The study employed a panel data techniques such as Random Effects or Fixed Effects models, with guidance from the Hausman test, to settle on Random Effect model and with an OLS as a robust checker.

The findings reveals that contrary to our priori expectation of inflation negatively affecting the export performance of SMEs, we found that holding all other factors constant, a positive

perception of inflation improved SMEs' export by about 57.07%. Further, holding all other factors constant, firms opting to use mobile money for supplier payments experienced a roughly 0.84% decline in export performance. Surprisingly, if firms opted for mobile money to receive payments from customers, their export value decreased by approximately 52%, contrary to expectations and prior research indicating a positive link between digital payments and export performance. Moreover, fluctuations in domestic demand for the main product significantly affect export levels. A decrease in domestic demand leads to a 37.38% decline in export performance, while a constant demand declined export performance by 15.47% compared to an increase in domestic demand. Additionally, holding all other factors constant, using foreign technology licensed by SMEs increased SMEs export performance by 29.83%, while having international certification to meet export standards declined SMEs export performance by about 31.19%. Equally, the number of establishments within a firm was found to have a significant influence, with an additional establishment marginally increasing export performance by about 8.18%. and lastly, the age of the firm also emerges as an influential factor, with an additional year increasing export performance of SMEs by approximately 0.41%.

5.3 Conclusion

In conclusion, the study reveals that SMEs export Performance in Kenya is enhanced by positive perception of inflation, technology from foreign, age and number of establishment. However, findings reveals that SMEs export Performance in Kenya is hindered by mobile money payment to suppliers, mobile money receivable from customers, decrease or unchanged domestic demand and international certificate

5.4 Recommendations

Based on the findings that SMEs export performance in Kenya is enhanced by a positive perception of inflation, technology from foreign sources, age, and the number of establishments, the following recommendations are proposed:

(i) Government bodies and industry stakeholders should engage in awareness campaigns to foster a positive perception of inflation among SMEs. Providing educational resources and information about the benefits of a stable and moderate inflation environment can contribute to increased confidence among SMEs engaged in international trade.

(ii) Government agencies and industry associations should facilitate the adoption of technology from foreign sources by SMEs. This can be achieved through initiatives such as technology transfer programs, financial incentives for technology investments, and partnerships with international technology providers. Training programs should also be offered to ensure effective utilization of the adopted technologies.

(iii) Recognize the value of older SMEs with established industry knowledge and networks. Implement support programs, mentorship initiatives, and funding opportunities specifically tailored for aging SMEs looking to expand their export activities. Leveraging the experience of these businesses can contribute significantly to the overall success of the export sector.

(iv) Encourage SMEs to diversify their establishments across regions or countries. Government policies and financial incentives can be designed to support SMEs in establishing a physical presence in different markets. This diversification strategy

enhances access to diverse customer bases, supply chains, and business networks, thereby positively impacting export performance.

(v) Governments should formulate and implement export-friendly policies that take into account the identified factors. Policies should aim to maintain a positive perception of inflation, provide support for technology adoption, recognize the contributions of aging SMEs, and incentivize the establishment diversification efforts of SMEs engaged in international trade

(vi) Government trade promotion agencies should actively assist SMEs in gaining access to international markets. This includes facilitating participation in international trade fairs, providing market intelligence, and supporting export-oriented initiatives. Initiatives that connect SMEs with global buyers and distributors can enhance their export opportunities.

(vii) Allocate resources for research and development initiatives focused on technology adaptation and innovation within SMEs. This can involve creating research grants, innovation hubs, and collaboration platforms that bring together SMEs, research institutions, and technology experts. The goal is to continuously enhance the technological capabilities of SMEs to remain competitive in global markets.

(viii) Implement programs that encourage continuous learning and adaptation among SMEs. This can involve training programs, workshops, and seminars on international trade dynamics, market trends, and technological advancements. Enhancing the adaptability of SMEs ensures they stay abreast of changes in the global business environment.

(ix) Develop industry-specific support programs that take into account the unique characteristics and challenges of different sectors. This may include tailored training

programs, sector-specific technology adoption initiatives, and export promotion efforts designed to address the specific needs of SMEs within each industry.

(x) Foster collaboration between SMEs, industry associations, government agencies, and international partners. Collaborative platforms can facilitate knowledge sharing, joint ventures, and collective efforts to address common challenges. Building a supportive ecosystem enhances the overall resilience and competitiveness of SMEs engaged in international trade.

By implementing these recommendations, stakeholders can contribute to a conducive environment for SMEs to thrive in international trade, leveraging positive perceptions of inflation, technology adoption, age, and establishment diversification for enhanced export performance in Kenya.

Appendix

Random Effect model

```
Random-effects ML regression                    Number of obs     =         15
Group variable: idstd                           Number of groups  =         15

Random effects u_i ~ Gaussian                   Obs per group:
                                                              min =          1
                                                              avg =        1.0
                                                              max =          1

                                                LR chi2(12)       =   1.44e+07
Log likelihood  =  -30450446                    Prob > chi2       =     0.0000
```

exp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Mobile_Receivables	-.8385034	.0120712	-69.46	0.000	-.8621624	-.8148444
mob_payment	-52.94189	.0139343	-3799.39	0.000	-52.9692	-52.91458
t_from_forgn	29.83422	.0188623	1581.69	0.000	29.79725	29.87119
i_cert	-31.18637	.0163242	-1910.43	0.000	-31.21837	-31.15438
locatn	3.084565	.0029792	1035.36	0.000	3.078725	3.090404
n_estab	8.176878	.0038326	2133.51	0.000	8.169366	8.18439
age	.4105584	.0002432	1687.92	0.000	.4100817	.4110352
Private_domestic_owned	-.1534138	.0001457	-1052.66	0.000	-.1536995	-.1531282
Private_foreign_owned	-.8960801	.0002627	-3410.88	0.000	-.896595	-.8955652
Inflation	57.06626	.0341859	1669.29	0.000	56.99926	57.13327
Domestic_Demand						
Decrease	-37.38151	.0429947	-869.45	0.000	-37.46578	-37.29724
Remain the same	-15.47249	.0166666	-928.35	0.000	-15.50516	-15.43982
_cons	-38.55115	.0737917	-522.43	0.000	-38.69578	-38.40652
/sigma_u	0	(omitted)				
/sigma_e	10.49051	.0026099			10.4854	10.49563
rho	0	(omitted)				

```
LR test of sigma_u=0: chibar2(01) = 0.00                Prob >= chibar2 = 1.000
```

OLS regression result

Model	4.3772e+09	12	364764921	Prob > F	= 0.0000
Residual	889024482	8,078,293	110.051032	R-squared	= 0.8312
				Adj R-squared	= 0.8312
Total	5.2662e+09	8,078,305	651.894616	Root MSE	= 10.491

exp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Mobile_Receivables	-.8385034	.0120712	-69.46	0.000	-.8621625	-.8148444
mob_payment	-52.94189	.0139343	-3799.39	0.000	-52.9692	-52.91458
t_from_forgn	29.83422	.0188623	1581.69	0.000	29.79725	29.87119
i_cert	-31.18637	.0163242	-1910.43	0.000	-31.21837	-31.15438
locatn	3.084565	.0029792	1035.36	0.000	3.078725	3.090404
n_estab	8.176878	.0038326	2133.51	0.000	8.169366	8.18439
age	.4105584	.0002432	1687.92	0.000	.4100817	.4110352
Private_domestic_owned	-.1534138	.0001457	-1052.66	0.000	-.1536995	-.1531282
Private_foreign_owned	-.8960801	.0002627	-3410.88	0.000	-.896595	-.8955652
Inflation	57.06626	.034186	1669.29	0.000	56.99926	57.13327
Domestic_Demand						
Decrease	-37.38151	.0429947	-869.44	0.000	-37.46578	-37.29724
Remain the same	-15.47249	.0166667	-928.35	0.000	-15.50516	-15.43982
_cons	-38.55115	.0737918	-522.43	0.000	-38.69578	-38.40652

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