MANAGING SUPPLY CHAIN RISKS AMID GEOPOLITICAL CONFLICTS WITH INSIGHTS FROM UGANDAN CROSS-BORDER SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)

JOSEPH NIXON EMBA

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UGANDA CHRISTIAN UNIVERSITY

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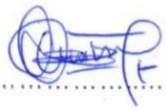
DECLARATION

As per the university values of integrity and diligence. I, **EMBA JOSEPH NIXON**, hereby declare that this dissertation titled **"**MANAGING SUPPLY CHAIN RISKS AMID GEOPOLITICAL CONFLICTS WITH INSIGHTS FROM UGANDAN CROSS-BORDER SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)**"** is my original work and never been submitted to any academic institution for any award.

Signature: 

Name: Emba Joseph Nixon

Date: 7th May 2026

APPROVAL

This dissertation titled "MANAGING SUPPLY CHAIN RISKS AMID GEOPOLITICAL CONFLICTS WITH INSIGHTS FROM UGANDAN CROSS-BORDER SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)" has been submitted by EMBA JOSEPH NIXON of REG NO. S23B12 /010 to the school of business in partial fulfillment of the requirement of the award of Bachelor Degree of Procurement and Logistics Management of Uganda Christian University with my approval as the supervisor

Supervisor's Name: Mr. Muloosi Pascal

Sign:.....

Date:.....28/4/2025

DEDICATION.

This study paper is dedicated to my dear beloved guardians, who have continuously supported me throughout my academic journey both financially and morally, and who never stop trying to see that I receive an education. I pray that the heavenly Father would reward them abundantly for this generosity and love they have shown to me for all these years.

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ABSTRACT

This study examined how Small and Medium-Sized Enterprises (SMEs) engaged in cross-border trade in Uganda manage supply chain risks arising from geopolitical conflicts. SMEs play a critical role in Uganda's economy however, their operations are highly vulnerable to disruptions such as border closures, tariff increases and currency fluctuations caused by regional and global conflicts. The study was guided by the Supply Chain Resilience Theory, focusing on three key capabilities namely absorption, anticipation, and recovery.

A qualitative exploratory research design was adopted to gain in-depth insights into the lived experiences of SMEs operating in key border regions. Primary data were collected through semi-structured interviews with eleven purposively selected participants, including SME owners, logistics supervisors and cross-border trade coordinators. The thematic analysis was used to analyze the data analysis with the help of ATLAS.ti, where it is possible to identify the common patterns and themes.

The results showed that buffering strategies used by SMEs like maintaining safety stock are highly relied on to accommodate disruptions but the methods are costly in terms of finance. Informal information networks such as peer traders largely drive the anticipation of risks and online communication systems, because of the lack of credible formal early-warning systems. Regarding recovery, the SMEs embrace flexible and adaptive mechanisms like supplier replacing, mobile transactions using mobile money, short term borrowing and using more than one currency to deal with financial instability brought about by currency fluctuations.

Nonetheless, these resilience strategies are largely reactive, circumscribed by structural problems like high transportation expenses, red tape and inadequate availability of funds. The paper finds that although adaptive capacity of Ugandan cross-border SMEs is great, their systemic strength is still constrained by the external systemic influences. It recommends the enhancement of institutional backing, enhancement of trade infrastructure and creation of formal information systems to enhance SME resilience and sustainability in volatile geopolitical environments

CHAPTER ONE

1.0 BACKGROUND OF THE STUDY

Small and Medium-Sized Enterprises (SMEs) formed the backbone of Uganda's economy, accounting for over 80% of employment and more than 90% of business institutions (UBOS, 2023). Their expansion and growth were closely tied to cross border trade with its neighbors like Kenya, Rwanda, Tanzania, Democratic Republic of Congo and South Sudan in various sectors like retail, light manufacturing and agriculture (De-Fragmenting Africa, 2023). However, being landlocked Uganda was vulnerable to external shocks, particularly geopolitical conflicts which disrupted regional trade flows and left SMEs exposed to significant supply chain risks. These risks manifested as currency volatility, delivery delays, reduced competitiveness and increased transportation costs (IMF, 2024).

Recent global and regional conflicts emphasized these vulnerabilities like the Russia-Ukraine conflict which led to increased fuel and fertilizer prices, pressing SMEs profit margins and increasing costs (IMF, 2024). Border closures in DRC increased smuggling and delayed mineral and food exports (International Crisis Group, 2024). Civil unrests in South Sudan also reduced trade volumes by up to 80%, disrupting border markets like Elegu (WFP, 2024). Likewise the 2019 Uganda-Rwanda border dispute disrupted tea and coffee exports, leading to a sharp rise in transportation costs (Rwanda Development Board, 2023). These conflicts pointed out the gravity of these risks faced by SMEs yet most of the existing literature mainly focused on multinational corporations and trade blocs, neglecting smaller enterprises in landlocked developing countries.

Although vulnerable, SMEs did not sit back and be the victims of these shocks. They used some Supply Chain Risk Management (SCRM) measures such as supplier diversification, informal trade networks or relying on cooperative associations to remain in business.

Nonetheless, there was a dearth of empirical research on the specific manner in which Ugandan cross border trading SMEs specifically dealt with these risks that were brought about by the geopolitical conflicts and created a knowledge gap both in theory and practice. It was significant to fill this gap of knowledge since the resilience of a supply chain was achieved with an effective supply chain risk management (SCRM) approach against the fragile trade environment.

The objective of the study was to determine the impact of geopolitical conflicts (IV) on supply chain risks (DV) of Ugandan cross border trading SMEs. The Supply Chain Resilience Theory (Ponomarov and Holcomb, 2009) was the critical theory used in conducting the research. Absorption, anticipation, and recovery aptitudes highlighted in the theory, were in tandem with the specific objectives of the study. The former looked at the absorption capacity which highlighted the capacity of SMEs to absorb shocks through maintaining operations during disruptions such as border closures which reflected the consideration of the theory that resilient supply chains are capable of absorbing shocks. Second, the anticipation capabilities measured how SMEs reacted proactively to trade restrictions and tariff increases, by anticipating the possible disruption. The third objective examined recovery processes by examining the recovery of financial stability in SMEs following the currency fluctuations that demonstrated the recovery aspects of the theory. This research not only demonstrated how conflicts posed risks to SMEs such as border closures, tariff increases and currency fluctuations but also how SMEs responded with adaptive mechanisms such as local sourcing and supplier diversification (UNIDO, 2024). These dynamics were important in creating resilience in the EAC and COMESA models, and ensuring that Ugandan SMEs would stay competitive in unstable geopolitical contexts.

1.1 STATEMENT OF THE PROBLEM

Small and Medium-Sized Enterprises (SMEs) were the backbone of the Ugandan economy contributing over 70% of the private sector and over 80% of employment (UBOS, 2023). They played a vital role in cross border trade within East Africa and the Greater Lakes Region in sectors such as retail, manufacturing, agriculture among others. However, their growth potential and sustainability were constantly threatened by frequent geopolitical conflicts which disrupted trade flows and exposed them to supply chain risks. These conflicts manifested as tariff hikes, border closures, currency fluctuations among others which directly created operational, strategic and financial risks for SMEs. Financial risks arose from cash flow shortages and unpredictable costs, operational risks included inventory losses and delivery delays. Strategic risks hindered a firm’s long term competitiveness and threatened their market shares.

Unlike large multinational companies which usually had strong financial reserves and better risk management systems, SMEs operated with thin profits and reserves, limited access to credit facilities and weak bargaining power. These vulnerabilities made them greatly affected by supply chain disruptions, leading to high operational costs, perishable inventory losses, cash flow problems and premature business closures. While SMEs employed strategies like local sourcing or supplier diversification, their effectiveness remained underexplored.

Although regional integration initiatives like the EAC and COMESA had been established to promote seamless trade, recurring geopolitical conflicts kept reducing their effectiveness. While the disruptive impact of these conflicts on global supply chains was well documented, existing research largely focused on multinational corporations and large trade blocs. There was lack of empirical research that directly addressed the lived experiences of SMEs in developing landlocked countries. This created a knowledge gap leaving SMEs without evidenced based, well-structured strategies for effective supply chain risk management and policymakers without the necessary understanding to formulate targeted support interventions.

Therefore, this study was necessary to address this gap by examining how geopolitical conflicts influenced the management of operational, financial and strategic supply chain risks for SMEs in Uganda engaged in cross border trade. Through documenting both the impacts and resilience strategies used by these SMEs, the study sought to provide practical insights and evidenced driven recommendations for policymakers. This was crucial for strengthening SMEs' capacity to resist external shocks hence promoting Uganda's goal of achieving regional integration, trade competitiveness and sustainable economic development.

1.2 PURPOSE OF THE STUDY

This study aimed to investigate how SMEs dealing in cross border trade managed different supply chain risks amidst geopolitical conflicts. It also sought to determine whether the adaptive Supply Chain Risk Management strategies led to measurable mitigation of these risks.

1.3 OBJECTIVES OF THE STUDY

- To assess the impacts and effects of geopolitical conflicts on supply chain risks faced by SMEs engaged in cross border trade in Uganda.
- To evaluate the absorption capacity of SMEs by determining how border closures affected their ability to maintain operations through delivery delays and inventory management strategies.
- To assess the anticipation capabilities of SMEs through examining how tariff increases and trade restrictions impacted proactive cost management and operational planning.
- To assess the recovery mechanisms employed by SMEs through analyzing the effects of currency fluctuations on the cash flow and financial stability of SMEs in Uganda.

1.4 RESEARCH QUESTIONS

- How do Ugandan cross border trading SMEs absorb the impact of border closures on delivery delays and inventory management?
- How do Ugandan cross border trading SMEs anticipate and proactively manage the operational cost implications of tariff increases and trade restrictions?
- What recovery mechanisms do Ugandan cross border trading SMEs employ to restore cash flow and financial stability following currency fluctuations?

1.5 SCOPE OF THE STUDY

1.5.1 GEOGRAPHICAL SCOPE

The study was conducted among the registered cross border trading SMEs operating primarily through key border points such as Busia, Malaba, Elegu border (with South Sudan) among others. The study also included SMEs that actively engaged in import and export activities through these corridors as they are directly affected by the same conflicts.

1.5.2 TIME SCOPE

The study focused on the period between 2020 to 2024. This period was important because it captured significant recent geopolitical events that disrupted regional trade including the Rwanda-Uganda border closure, the conflicts in the Eastern Democratic Republic of Congo, and the global economic consequences of the Russia-Ukraine conflict on fuel and commodity prices.

1.5.3 SUBJECT SCOPE

The research focused specifically on supply chain risks such as operational, financial and strategic which are faced by these Small and Medium-sized Enterprises as a direct result of geopolitical conflicts. It documented their experiences and their mitigation efforts.

1.6 JUSTIFICATION OF THE STUDY

The study would address critical challenges facing Uganda's primary business sector.

On the academic front, a significant gap in the available literature could be identified. Although the disruptive nature of geopolitical conflicts on world supply chains had been well documented, much focus had been on multinational corporations. The peculiar weaknesses of the SMEs in the developing and landlocked economies of certain countries such as Uganda had been neglected. The aim of this research was to present localized evidence on the manner in which these conflicts

manifested as financial strain, strategic threats and operational delays. It facilitated in wider academic debate on supply chain risk management in volatile environment.

Practically, Ugandan SMEs are not just statistics. They are the local employers, exporters and family run shops and their survival is endangered by the instabilities in the regions and closing of the borders. In the absence of clear knowledge of these risks, businesses are left to fight these challenges which in most cases have had dire financial implications. The research results would enable the SME managers with knowledge to come up with practical strategies such as diversifying the suppliers base, or local sourcing as a measure to ensure their operations are not threatened by external factors.

The research would offer a solid basis of policies to policy makers. The problem with well thought out trade policies being missed by government agencies such as EAC and COMESA is simply due to the fact that they are not informed by the ground level realities of small scale traders. The aim of this study was to present the pain points and give a clear direction on how to design a conflict resolution mechanism, support programs and stability enhancement policies to SMEs. This would contribute to Uganda achieving economic stability and sustainable development.

1.7 SIGNIFICANCE OF THE STUDY

- **To Small and Medium-Sized Enterprises (SMEs)**

  The results would offer practical information to the managers of SMEs to enhance their understanding of the nature of geopolitical conflicts and risks so that they can devise effective mitigation strategies and resilience measures that can result in cost savings, reduced risks and overall better business performance in cross border operations.

- **To Policymakers**

  The analysis would help government agencies, regional institutions like EAC, COMESA among others as well as institutions like Uganda Revenue Authority (URA) to identify the pain points, devise specific trade policies, dispute resolution mechanisms and support programs to make the region more stable in terms of trade and economic security.

- **To Academia**

  The study would contribute to the existing literature on supply chain risk management in developing economies particularly at the junction of geopolitics and SME operations, offering a foundation for future research and contributing to scholarly discussions on global and regional supply chain vulnerabilities.

- **Overall Contribution**

  Through addressing the supply chain risks caused by geopolitical conflicts, this study would support both SMEs and policymakers in strengthening their resilience and trade competitiveness hence contributing to regional integration and sustainable economic growth.

1.8 LIMITATIONS OF THE STUDY

- **Geographical Focus**

The study was limited to Ugandan SMEs that are actively engaged in cross border trade through official border entry points like Malaba, Busia and Elegu border points

- **Time Frame**

The study focused between 2020-2024. This was a strategically selected period as it covered significant recent geopolitical events that have directly affected the regional trade, paving way for a relevant and timely analysis.

- **Reliability of Information**

There were high possibilities that some SME managers could be hesitant to share full accurate data regarding their financial losses or operational challenges faced due to confidentiality concerns or business sensitivity.

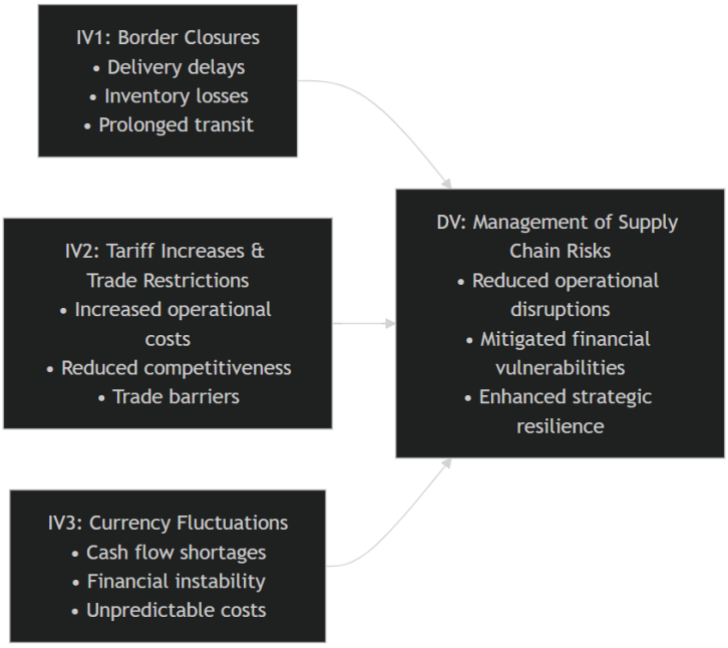
- **Accessibility Constraints**

Attaining access to some SMEs, especially those operating in politically sensitive or insecure regions was a challenge. This affected the number of participants and diversity.

- **Resource Constraints**

The scope of primary data collection might be influenced and limited by time and financial resources. Restricted travels to distant border points thus hindering the primary data collection process.

1.9 CONCEPTUAL FRAMEWORK (Many-to-One Model)



The framework showed a model where three key external disruptions namely border closures, tariff increases & trade restrictions and currency fluctuations acted as the Independent variable that collectively drove and determined the effectiveness of Supply Chain Risk Management (DV).

The model posited that these interconnected factors created a flow of operational, financial and strategic challenges. Successful management of these risks would result to desired outcomes like reduced operational disruptions, mitigated financial vulnerabilities and enhanced long term strategic resilience for the business.

CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews the existing literature on managing supply chain risks amid geopolitical conflicts, focusing mainly on Ugandan cross-border trading SMEs. It defines key concepts, presents the Supply Chain Resilience Theory as the primary guiding framework and systematically discusses the existing empirical studies aligned under each specific objective of the research. The chapter establishes the theoretical and conceptual foundations for the research while also identifying critical research gaps in the Ugandan context.

2.1 KEY DEFINITIONS

- ✓ Geopolitical conflict refers to the political disputes or tensions between countries that lead to disruptions in international trade, leading to effects such as border closures, tariffs increases, trade embargoes and sanctions (Caldara & Iacoviello, 2022).
- ✓ Supply chain risk is the potential loss as a result from disruptions in the flow of goods, information or finances due to unforeseen events or circumstances (Christopher & Peck, 2004).
- ✓ Absorption capacity refers to the ability of a supply chain to minimize or withstand the impact of disruptions through in-built redundancy and flexible processes and adaptive resources hence maintaining core operational functions (Ponomarov & Holcomb, 2009).
- ✓ Anticipation capacity involves proactive risk identification, proper assessment and planning to prevent or minimize disruption effects using intelligence and early warning systems to mitigate threats to ensure business continuity (Ponomarov & Holcomb, 2009).
- ✓ Recovery mechanisms refer to the strategies that restore the functionality of supply chains after a disruption. Financial hedging or alternative sourcing and stabilization of cash flows are examples of such mechanisms (Ivanov, 2023).

2.2 THEORETICAL REVIEW

This paper is informed by Supply Chain Resilience Theory created by Ponomarov and Holcomb (2009). The theory conceptualizes supply chain resilience as a dynamic, adaptive ability that enables systems to prepare themselves in the event of an unforeseen disruption, respond effectively during disruptions and recover quickly in order to achieve the long term stability and performance. The theory is organized into three related stages namely anticipation (proactive risk detection and planning), absorption (buffering against the shock impacts through flexibility and redundancy) and recovery (restoration and studying to improve future robustness). The theory based on the context of Ugandan cross border trading SMEs is highly applicable since it explains how resource constrained firms can use low cost mechanisms such as keeping safety stock inventories to absorb border closure delays, carrying out regular cost benefit analysis to anticipate tariff increases and holding a diversified currency holding or using forward contracts to recover the financial costs of exchange rate fluctuations. The theory focuses on flexibility in unpredictable circumstances and thus it is of great importance to the SMEs in the East Africa region.

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2.3 CONCEPTUAL REVIEW

2.3.1 Absorption Capacity of SMEs to continue Operations.

Objective 1: To assess the ability of SMEs to absorb the changes through the implementation of the delivery delays and inventory management measures.

Border closures form one of the most severe and instant operational shocks that can be imposed upon cross-border supply chains, with particularly stated effects on Small and Medium-sized Enterprises (SMEs) operating within landlocked economies like Uganda. Such disruptions are experienced in a number of difficult ways that include long delivery delays that go way beyond the normal schedule, high differences in inventory levels that disrupt the efficient flow of goods and to a larger extent, increased the cost of logistics which strains already limited funds. This puts the absorption capacity of these firms to the test to the maximum. According to the detailed data offered by World Bank (2023); Amankwah-Amoah et al. (2021), the issues with regional trade disruptions that occur in the East African region in question, are what generate an average delay in delivering products between 35% and 45% on average, whilst the perishable goods which are mostly vulnerable under such circumstances, experience spoilage risks that exceed 50% during the periods of prolonged border closures. An outstanding historical precedent is the border close between Uganda and Rwanda, which occurred between 2019 and 2020. Not only did this lead to an increase in transportation costs by over 40% but also resulted in widespread shortages in inventory reserves, which, in its turn, convinced a significant number of SMEs to completely shut down their operations and enter into operational halts (U.S. Department of State, 2023; Ali et al. 2020). Equally, the recurrent instability that is currently in the Eastern Democratic Republic of

Congo (DRC) has led to the periodical border closures in major crossing points like Bunagana and Mpondwe. This contributes to recurring inventory shortages of vital imported goods such as cement, electronics, and other agricultural inputs which are critical in the continued business operations (International Crisis Group 2024; Massawe et al. 2022). Also, the United Nations Industrial Development Organization (2024); Chowdhury et al. (2021) has cautiously recorded the rates of spoilage that can reach as high as 50 per cent among exporters involved in the trade in agricultural produce in the course of such closures. This puts on record the dire situation that SMEs are highly vulnerable to due to maintaining a stable inventory to support their day-to-day activities.

Theoretically speaking, Ponomarov and Holcomb (2009) have presented a primary definition of the concept of absorption capacity, in which they conceptualize it as the vital capacity of a supply chain to resist the complex effects of disruptions through incorporation of in-built redundancy mechanisms, implementation of flexible processes capable of adapting to the changing conditions, and the strategic allocation of resources in an adaptive manner, all of which are jointly capable of enabling the maintenance of core operational functions even in the face of hardship. This absorption capacity, in the particular context of Ugandan SMEs, is more than basic technical competence and can be seen as a key survival mechanism in the highly volatile and unpredictable trade corridors which typify the region. Empirical research that has been conducted in this field has enlightened on a number of low-cost absorption strategies that these businesses employ to offset risks. Indicatively, a conducted comprehensive investigation by the Kenya Association of Manufacturers (2022) Ali et al. (2020) revealed that fully 68% of SMEs that engage in cross-border trade do so using multiple border points such as Malaba and Busia as a strategic choice to avoid a closure at one place, thus actively distributing operational risks across a diversified set of routes and improving overall resilience.

In Uganda, traders who have been operating close to the border of Elegu to South Sudan, have been increasingly embracing the concept of informal buffer warehousing. This includes short-term storage of goods in the nearby towns such as Gulu, thus enabling them to absorb and manage the delays in the delivery that may take up to 14 days without disastrous effects (WFP 2024; Amankwah-Amoah et al. 2021). Moreover, the use of safety stock strategies has now become a popular trend among these companies based on the results of the Economic Policy Research Centre (2023); Chowdhury et al. (2021), about 62% of the SMEs evaluated maintain an additional inventory buffer of 7 to 10 days specifically with regard to high-demand goods during seasons characterized by increased conflict and potential disruptions.

However, it is crucial to acknowledge that the quest of absorption strategies involves significant costs and trade-offs. The practice of holding excess inventory inevitably leads to an increased tie-up of working capital and a matching rise in storage expenses, with estimates indicating an increase of 25% to 30% during periods of peak disruption (EPRC 2023, Kshetri 2021). Moreover, the reliance on informal rerouting through paths that are not officially approved introduces increased risks of smuggling activities and the requirement of potential customs penalties, hence complicating the operational landscape (URA 2024; Massawe et al. 2022). Whereas large multinational corporations are able to utilize advanced Warehouse Management Systems (WMS) along with real-time tracking technologies to optimize their responses, Ugandan SMEs are mainly limited to depend on manual coordination methods and vast social networks for their supply chain management, which naturally limits both the flexibility of their operations and the accuracy with which they can respond to disruptions.

Although it has been established that various sources can be used to acquire numerous insights, a number of gaps still remain within the current body of literature. An empirical quantitative evaluation study of the cost-benefit trade-offs of using safety stock policies must be conducted in comparison to the rerouting strategies among the Ugandan SMEs. Moreover, as yet there is a visible lack of empirical studies that target important measures of absorption effectiveness such as rates of order fulfillments or the length of operational downtimes during the active periods of border closures. The possible contribution made by cooperative associations including cross-border trader unions to the collective buffering mechanisms has also been under-explored and needs more attention. Lastly, the literature is especially unproductive in context specific absorption models that substantially incorporate the unique informal trade ecosystems that are typical of Uganda and the established transit protocols of the East African Community (EAC). Thus, even though border closures have been widely reported as severe operational shocks within the supply chain realm, the actual lived experiences of absorption practices, the costs incurred by these practices, and the performance outcomes that were achieved by the Ugandan cross-border SMEs in addressing these challenges is, empirically, largely a terra incognita, and therefore provides a compelling reason to undertake such a focused and in-depth investigation under the overall Supply Chain Resilience framework.

2.3.2 Anticipation Capabilities of SMEs in Proactive Planning.

Objective 2: To evaluate the anticipation abilities of SMEs by looking at the effects of increasing tariffs and trade restrictions on proactive cost management and operational planning.

Increases in tariffs and trade restrictions create a high degree of strategic uncertainty to the complexity of cross-border supply chains, which in turn is enough to convince Small and Medium-sized Enterprises (SMEs) to develop and enhance their anticipation capabilities. This includes proactive detection, full analysis and proper mitigation of any potential risk way before such risk has the chance to fully develop and wreak havoc. These policy induced shocks which arise as a result of governmental or regional choices are used to weaken the predictability of business costs over a long period, and to undermine the long-term competitiveness of businesses, with particularly dire consequences to business already constrained by limited resources in the context of developing economies. The dynamic tariff regimes that characterize the East African region are responsible in inflating both their production costs and imports costs by a significant margin of 15% to 25% which in turn directly erode their profit margins of the SMEs and causes severe disruption to their carefully laid operational planning processes. In the context of the East African Community (EAC), the fluctuating tariffs charged on major commodities such as dairy products that can reach up to 60, grains with the range of between 25-40 years, and textiles have cumulatively led to reduction in profitability of the Ugandan exports in the range of 18 per cent across the most affected sectors (EAC 2023; Massawe et al. 2022). A good example of this state of affairs can be seen in the 2022 issue of imposing export verification fees on Ugandan maize to the Kenyan market that increased compliance costs by an additional UGX 45,000 per ton, hence putting many SMEs at the unsustainable level of having to bear these unforeseen costs or face the prospect of being forced out of those markets altogether (Uganda Revenue Authority 2023, Chowdhury et al. 2021).

Theoretically, Ponomarov and Holcomb (2009) conceptualises the notion of anticipation as the first and fundamental step within the broader construct of supply chain resilience, which involves a series of crucial activities that include systematic collection of risk intelligence, the development of scenario-based forecasting models, and the formulation of detailed contingency or risk planning solutions, all designed to prevent and counteract potential disruptions before they can cause significant harm.

The anticipation practice, in the Ugandan SMEs context, extends much further than the territory of formal analytical tools and frequently manifests itself in strangely incorporated relational

practice as well as informal early warning systems, which rely on interpersonal networks and community-based information flows. Chowdhury et al. (2021) notes that supplier collaboration is very important and that active sharing of market intelligence can help SMEs predict upcoming tariff increases with a lead time of up to three months ahead. Practically, the cross-border traders of Uganda extensively use the modern communication platforms like WhatsApp groups and other messaging platforms in addition to joining border market associations and the development of informal networks with the customs officials, to keep a constant check and to predict the changes in the landscape of policies. An extensive study conducted by the Economic Policy Research Centre (2022), Kshetri (2021) revealed that an impressive 71% of SMEs based at key ports of entry, such as Busia and Malaba, are capable of adjusting their procurement plans within an extremely limited time frame of 48 hours following the appearance of speculations regarding potential changes in tariffs, thereby proving a high level of agile anticipation even in the absence of extensive digital infrastructure.

Empirical evidence from various sources serves to show a diverse range of anticipation strategies that have been adopted by these enterprises. The substitution of local materials for imported ones is a mainly widespread practice. For example, during the significant increase in EAC sugar tariffs that occurred in 2021, fully 58% of Ugandan SMEs in the confectionery industry shifted to relying on domestic cane suppliers as a means of avoiding the weighty import duties (UNIDO 2024; Massawe et al. 2022). Another common approach involves scenario-based budgeting in which firms project and prepare for costs under a scale of potential tariff regimes, ranging from low to medium to high levels. This enables them to maintain adequate cash flow buffers to weather uncertainties. Hakim et al. (2021) strongly advocates for the use of forward pricing agreements with suppliers as a mechanism to lock in costs at predictable levels. This tactical measure has been employed by approximately 42% of the SMEs surveyed across the Greater Lakes Region. However, it is significant to note that more advanced digital forecasting tools like specialized tariff trackers or integrated Enterprise Resource Planning (ERP) systems, continue to experience very low levels of utilization and usage, with adoption rates falling below 10%, primarily due to unaffordable costs and significant barriers related to technical skills and training (World Bank 2023; Amankwah-Amoah et al. 2021).

Despite the resourcefulness demonstrated in these various adaptations, several critical gaps continue within the current body of scholarly literature on this subject. A thorough evaluation of the accuracy and reliability of informal early warning systems' effectiveness has to be assessed in terms of lead time for mitigating tariff-related risks among Ugandan SMEs. Similarly, the potential

contributions of digital anticipation tools including the EAC's online tariff database or mobile-based applications providing real-time price alerts, have yet to be empirically tested in terms of their assimilation by SMEs or the measurable impact they apply on operational resilience. Additionally, there exists few comprehensive analysis that addresses the cost-effectiveness of anticipation practices, particularly with regard to the delicate trade-offs between the expenses incurred through material substitution and the potential savings achieved by successfully avoiding tariff impositions. Finally, the literature is clearly silent on the existence and functioning of policy feedback loops namely, the ways in which the anticipation behaviors and strategies of SMEs might in turn impact or shape the ongoing tariff negotiations within the EAC framework.

Therefore, although tariff increases and trade restrictions are widely acknowledged within academic and policy circles as intimidating strategic risks that threaten supply chain stability, the basic mechanisms, the clarity and accuracy of anticipation practices, and the potential for scaling these practices among Ugandan cross-border SMEs remain areas that are empirically underexplored and inadequately understood, thereby providing a strong rationale for targeted and systematic investigation conducted within the broad Supply Chain Resilience framework.

2.3.3 Recovery Mechanisms Employed by SMEs

Objective 3: To assess the recovery mechanisms employed by SMEs through analyzing the effects of currency fluctuations on the cash flow and financial stability of SMEs in Uganda.

Currency fluctuations form a common and enduring financial shock within the sphere of cross-border trade. This fundamentally undermines the predictability of cash flows, substantially inflating the costs related with imports, and posing a serious threat to the liquidity of SMEs that operate in environments that are characterized by high volatile exchange rates. In the broader East African region, the volatility of exchange rates frequently exceeds annual limits of 15% to 20%, with the Ugandan Shilling (UGX) experiencing a notable depreciation of 12.4% against the United States Dollar over the period stretching from 2022 to 2024 (Bank of Uganda 2024; Liu et al. 2023). According to comprehensive estimates provided by the African Development Bank (2024); Gachua & Muturi (2021), such clear volatility is responsible for growing import expenses by as much as 30%. This puts a lot of strain on SMEs that heavily rely on foreign-sourced inputs including such critical inputs as spare parts, packaging materials and a myriad of industrial chemicals that they heavily rely on in their production processes.

A targeted survey of the EPRC (2022); Liu et al. (2023) has revealed that a full 67% of Ugandan SMEs that are involved in cross-border activities have reported that they have been significantly delayed when it comes to making payments to suppliers, and have suffered severe cash flow crunches when it comes to making payments to their suppliers. To make the situation even worse, the collapse of the South Sudanese Pound in 2021 had even more disruptive impacts on trade along the Elegu border corridor causing drastic reduction of up to 60% of revenues of the Ugandan SMEs involved in trade along the affected trade routes in the region (WFP 2024; Gachua & Muturi, 2021).

On a theoretical plane, the recovery phase as conceptualized by Ponomarova and Holcomb (2009), is the most important post-disruption stage of the supply chain resilience framework, a framework that is principally geared towards the restoration of operational functionality, the strategic repositioning of the available resources, and the systematic integration of lessons learned in a manner that strengthens resilience and preparedness to future challenges. In the specific instance of SMEs, recovery is not only beyond the clearly technical aspects but also assumes an evidently financial and adaptive nature. This often necessitates the use of informal and economical mechanisms and especially because of the limited access that these enterprises have to advanced formal hedging tools that are generally available to larger corporations. Using advanced simulation modeling, Ivanov (2023) proves that the implementation of the digital twin technologies can result in the reduction of the financial recovery rate by up to 30 percent due to the ability to monitor the risks in real-time. But this high technology is largely inaccessible to the great majority of Ugandan SMEs because of their prohibitive costs and infrastructural constraints. Instead, an assortment of effective and realistic recovery plans have come to dominate this scenario. Sheffi (2020); Ivanov (2023), and others, in particular, are strong advocates of the adoption of the practices of multi-currency transactions, which is to hold payments in currencies that are more stable, such as the United States Dollar (USD) or the Kenyan Shilling (KES) as a mechanism of securing inflows of revenue during domestic currency crises. As a calculated approach to address the adverse effects of currency volatility in the Ugandan currency, about 59% of its member organizations have now switched to invoicing their transactions in these stable currencies (Uganda Small Scale Industries Association, 2023). Another tactic was the immediate switching of suppliers by the currency pinch that came into effect in 2022, the majority of SMEs (54% of all) went out of their way to switch their sourcing to regional suppliers based in Kenya who were willing to accept payments in KES. This was in effect avoiding the risk of exposure to the volatility of the dollar (EPRC 2023; Gachua & Muturi 2021).

Informal financing networks come out as an important aspect in the recovery landscape of such enterprises. The savings and credit cooperatives (commonly referred to as SACCOs) as well as the village savings and loan associations (VSLAs) have proved useful in the extension of emergency liquidity resources to at least 63% of the negatively impacted SMEs in key border towns such as Busia and Malaba. This would allow these companies to experience average recovery times of 21-28 days after the disruption has started (USSIA 2023; Gachua and Muturi 2021). The use of forward contracts though still in its infancy, is increasingly becoming popular among the more established SMEs. According to current statistics, 18 percent of larger SMEs in this group are now looking at engaging into currency forward agreements offered by banks to lock-in exchange rates over a period ranging between 30 and 90 days (Stanbic Bank Uganda 2024; Liu et al. 2023). That aside, the broader use of such instruments remains to be constrained by stringent collateral requirements of the financial institutions and by perpetual low levels of financial literacy especially among the micro-traders who form the backbone of informal cross-border trading.

Although there is resourcefulness in the various strategies, the resourcefulness reflects in the lack of insightful and persistent gaps, which are missing in the empirical literature. A special study must be conducted where stringent measurement is done of the real timelines that are necessary in recovery, the overall costs that are involved in the process or the different success rates that are associated with various informal mechanisms such as a comparative analysis of SACCO-supported recoveries or those that were facilitated through supplier switching in the outcome of currency shocks specifically in the context of the Ugandan context. Moreover, the efficacy of the multi-currency invoicing practices in restoring and maintaining the stability of the cash flow over the long-term is not quantified and so not well understood. Furthermore, there is an eminent lack of studies which examine the existence and operation of recovery feedback cycles, i.e. the mechanisms by which SMEs repeatedly reorganize their hedging activities or financing strategy in response to recurrent currency shocks and this increases their resilience with the passage of time. Lastly, the possible efforts of the widely available mobile money platforms like MTN MoMo and Airtel Money in facilitating real-time mitigation of currency risks through speedy transactions and currency conversion have never been discussed or written in the academic literature.

Thus, yet to be empirically investigated, the dimensions of speed, the costs associated, and long-term performance of the recovery mechanisms adopted by Ugandan cross-border SMEs in absorbing these shocks is a territory that is empirically unexplored. This highlights the need to have a highly focused, systematic and context-oriented analysis that is carried out within the general Supply Chain Resilience framework.

2.4 RESEARCH GAP

Despite substantial evidence verifying that tariff increases, border closures and currency volatility create significant operational, strategic and financial disruptions for cross border SMEs, the literature shows a persistent shortfall in context specific insights. There is insufficient quantitative and qualitative research of how Ugandan SMEs operationalize absorption, anticipation and recovery capabilities through Supply Chain Resilience Theory mechanisms, particularly with measurable indicators of effectiveness within the EAC trade lanscape.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter showed the methodological framework adopted to investigate and examine how Ugandan cross-border Small and Medium-Sized Enterprises (SMEs) manage supply chain risks arising from geopolitical conflicts. It presented the research design, study population, sampling strategies, description of respondents, data collection methods, data analysis procedures, trustworthiness techniques, and ethical considerations. The methodological options were intensely based in established qualitative research principles articulated by Creswell & Creswell (2018), Saunders, Lewis & Thornhill (2019), Lincoln & Guba (1985), and Braun & Clarke (2006). The study embraced a qualitative exploratory approach suitable for generating detailed, context-specific insights from a purposively selected sample of ten information-rich respondents.

3.1 RESEARCH DESIGN

The research design used was a qualitative exploratory research design, which was selected due to its applicability in researching on complex, context-related, and poorly documented phenomena. According to Creswell and Creswell (2018), qualitative research is best suited to find out how people make sense of the lived experience in the natural settings. Since there was little empirical evidence on how Ugandan cross-border SMEs manage supply chain risks that are caused by geopolitical conflicts, the most appropriate design was the exploratory one. The exploratory design enabled the researcher to go beyond surface level tendencies to uncover intricate interpretations of how SMEs absorb, anticipate, and recover disruptions such as increased tariffs, border closures, and currency fluctuations. Saunders et al. (2019) also note that exploratory research is especially applicable when the problem at hand is not well-structured and needs an open-ended investigation. The design enabled flexibility whereby the researcher could explore the emerging issues during interviews, formulate questions based on the respondent context and obtain rich narratives that would not have been achieved using quantitative methods.

3.2 STUDY POPULATION

The study population was SMEs in Uganda that were actively engaged in cross-border trade with neighboring countries like Kenya, Rwanda, Tanzania, the Democratic Republic of Congo (DRC) and South Sudan. UBOS (2023) states that Uganda has approximately 1.1 million registered SMEs with an estimated two out of every five SMEs actively participating in regional trade corridors. These SMEs were in such sectors as manufacturing, wholesale and retail, agro-processing, metal fabrication, transportation and logistics sectors most susceptible to geopolitical shocks. The chosen population was also relevant as these SMEs had the first-hand experience of disruption due to changing tariffs, conflicts, and currency volatility and administrative barriers. Their personal experiences were critical towards comprehending the resilience practice and decision-making process in the event of geopolitical uncertainty.

3.2.1 DESCRIPTION OF RESPONDENTS

The sample was comprised of eleven (11) respondents who included SME owners, operations managers, logistics supervisors, and cross border trade coordinators. These groups of participants were specifically selected due to the fact that these groups had direct, practical experience with geopolitical disruptions including border closures, changes in tariffs as well as currency volatility. The SME owners and senior managers made the strategic and financial decisions, and thus were able to provide insights on how firms absorb and recover disruptions. The operations managers and the logistic supervisors were in the best position to clarify the challenges and adaptive responses in operations. Cross-border trade facilitators and clearing agents had direct access to customs systems, regulatory authorities and cost implications that may arise as a result of geopolitical conflicts. These respondents were therefore information-rich and best suited to provide the depth of qualitative data required for this study (Creswell, 2018).

3.3 SAMPLING SIZE AND SAMPLING TECHNIQUES

A sample size of eleven SMEs with one key informant per SME was considered sufficient for an in-depth qualitative study, as it allowed prolonged engagement with participants and facilitated the accomplishment of theoretical saturation which is the point at which additional data yielded no new themes (Creswell & Creswell, 2018; Guest et al., 2006).

Purposive sampling was the primary technique, targeting individuals who held at least five years of cross-border trading experience, operated through the identified high-risk corridors, and had personally encountered border closures, tariff hikes, or currency volatility between 2020 and 2024. Where access was restricted due to security concerns or the sensitive nature of cross-

border trade, snowball sampling was employed complementarily, with initial participants referring the researcher to other qualified respondents (Creswell & Creswell, 2018; Saunders et al., 2019). This combined approach has proven effective in similar studies on SME resilience in African contexts (Amankwah-Amoah et al., 2021; Ali et al., 2020).

3.4 DATA COLLECTION METHODS

The open-ended semi-structured in-depth interviews were used to collect primary data with informed consent of interviewees. The interview guide based on the three research questions is anchored and at the same time flexible to explore emerging issues. The primary sources of secondary data were related documents such as East African Community (EAC) and COMESA trade reports, Uganda Revenue Authority (URA) custom updates, World Bank and IMF regional economic updates, UNIDO publications, and SME associations newsletters. Triangulation made possible by using multiple sources allowed improving the overall credibility of the findings (Saunders et al., 2019).

3.5 VALIDITY AND RELIABILITY

Since it was a qualitative study, the four criteria used by Lincoln and Guba (1985) to establish trustworthiness were utilized. Triangulation of data sources, extended interaction with the participants and member-checking of critical interpretations enhanced credibility. The close and detailed account of the description of the SMEs, their trade routes and the particular geopolitical events that affected them were supportive of transferability. Reliability was also achieved through having a complete audit trail of methodological choices, interview procedures, and analysis procedures. Confirmability was obtained by reducing researcher bias, documenting analytical decisions automatically and ensuring that raw data and transcripts are stored in a secure place that can be easily verified by an independent researcher.

3.6 DATA ANALYSIS

To analyse the data, thematic analysis was employed, following the six steps approach that was proposed by Braun and Clarke (2006). This was done by word-to-word transcribing of the interview tape and re-reading the same to familiarize oneself. The first codes were then systematically generated on the entire data set and then the codes were then combined into potential themes that directly relate to the aims of the study which include absorption capacity, anticipation capability and recovery mechanisms. Themes were then analyzed, refined and interpreted with regards to already available literature on supply chain resilience. Qualitative

data analysis software ATLAS.ti was applied to code data and organize data into themes although manual coding was also employed to maintain interpretive depth.

3.7 TRUSTWORTHINESS OF THE STUDY

The four criteria of trustworthiness were determined based on four criteria, which were put forward by Lincoln and Guba (1985). Prolonged participation in the research, checking interpretations with participants, and data and method triangulation, helped to enhance credibility. Thick description of SMEs, trade routes and specific geopolitical events that affected the SMEs supported transferability. The reliability was matched by adequate audit trail of all methodological choices, interview guidelines, and coding. The researcher achieved confirmability by reflective journaling and ensuring that the raw data are stored in a secure place so that it can be externally verified.

3.8 ETHICAL CONSIDERATION

The research was carried out in accordance with all the ethical research standards (Creswell and Creswell, 2018; Resnik, 2020). Informed consent was provided by all the participants in written form before the responses to questions during interviews were taken, and the purpose, procedures, and voluntary nature of the participation were explained. The anonymity and confidentiality were ensured due to the usage of pseudonyms (fake names) and through the secure storage of all the recordings and transcripts. The subjects were free to leave the study any time they wanted without reprisal. Questions that were politically sensitive or had a possibility of incriminating the participants were avoided at all costs in order to avoid exposing the participants to risk. Formal ethical clearance was requested where needed by the university, or other relevant authorities. All the sources were cited following the APA 7 th edition referencing style.

3.9 SUMMARY OF THE METHODOLOGY

This chapter has described a qualitative exploratory approach that is intensive, custom-designed to look at how supply-chain resiliency in Ugandan cross-border SMEs is built in the presence of geopolitical conflicts. The purposive and snowball sampling combined with semi-structured interviews supplemented by document review, thematic analysis based on Braun and Clarke (2006), elaborate measures of trustworthiness, and adherence to ethical standards ensured that credible, transferable and practically valuable findings were obtained.

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND INTERPRETATION OF FINDINGS

4.0 Introduction

The chapter provides, analyses, and interprets qualitative results on how Ugandan cross-border SMEs deal with supply chain risks in the face of geopolitical conflicts. The analysis will be carried out based on semi-structured interviews with eleven purposively selected participants (P1–P11) actively involved in cross-border trade. These respondents offered extremely informative experience-based observations of disruptions, responses and adaptive strategies in volatile regional trade settings. A thematic analysis was used to analyze the data and it was supported by ATLAS.ti. The hybrid coding method was used, which combined deductive codes based on the Supply Chain Resilience Theory (anticipation, absorption, recovery) and inductive codes that were formed in the lived experiences of the participants. The codes, which include delays, stock-outs, informal networks, switching suppliers, and so on were clustered into categories and further evolved into themes. These were mapped out into conceptual networks to demonstrate the relationship between disruptions, responses as well as outcomes. Contrary to descriptive reporting, interpretation is the primary focus of this chapter, which explains the reason behind the occurrence of patterns and what they reflect on the SME resilience in weak trade environments. The use of secondary sources is minimal to support and not to dominate over the primary data.

4.1 Characteristics of the study participants.

The profile of the participants is as summarised in table 4.1 below. The table reveals the diversity in the trading experience, product types and business position.

Table 4.1: Profile of Study Participants (n = 11)

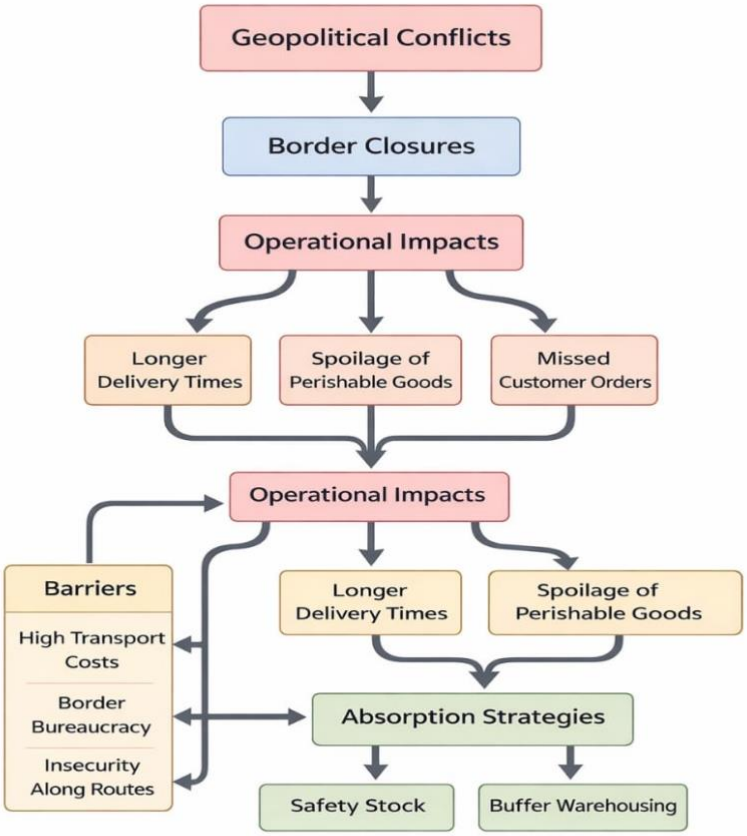
Participant ID	Role in Business	Years of Experience	Main Products
P1	Cross border trade coordinator	Less than 5 years	Manufactured goods
P2	SME owner	Less than 5 years	Retailer/consumer goods
P3	SME owner	5-10 years	Agricultural products, Manufactured goods, Retailer/consumer goods
P4	Other	5-10 years	Spare parts/machinery
P5	Logistics Supervisor	5-10 years	Agricultural products
P6	SME owner	Less than 5 years	Other
P7	SME owner	5-10 years	Retailer/consumer goods
P8	Operations manager	Less than 5 years	Agricultural products
P9	Logistics Supervisor	Less than 5 years	Agricultural products
P10	Clearing Agent	Less than 5 years	Spare parts/machinery
P11	Logistics Supervisor	Less than 5 years	Manufactured goods

Source: Raw interview responses.

Description: The participants explained the overall impact and resilience qualitatively in terms of intensity and ability to absorb shocks. The sample size used in the study was eleven participants who included SME owners, logistics supervisors, clearing agents and operations managers operating in various major border points including Busia, Malaba, and Elegu. They had between five years to a decade of experience offering both an emerging and an experienced point of view.

Participants regularly included direct exposure to disruptions like border closures, trade restrictions and currency instabilities. This heterogeneity enhances the plausibility of the findings as it entails a vast scope of operational realities within the cross-border trade system in Uganda.

Figure 1: ATLAS.ti Conceptual Network Diagram for Objective One



The diagram illustrates the connection between the closures of the borders, disruption of operations, absorption strategies, and challenges of implementation. The network was constructed based on grouping of simultaneous codes like, delays, spoilage, safety stock, and transport costs, into thematic groupings using ATLAS.ti. These were then connected with the objective of expressing causal and reinforcing relationships.

Key insight: The diagram shows that absorption strategies are not singular firm-level choices but are determined by structural constraints including infrastructure and bureaucracy, which point to the fact that resilience is not merely a product of structural constraints it is also a product of internal capabilities.

4.2 Objective One: Absorption of Supply Chain Disruptions

Theme 1: Nature and Effects of Border Closures

The majority of participants explained that border closures were common and unpredictable disturbances with flowing operational consequences. These were not one off experiences but were felt as recurrent shocks that disorient the process of planning and destabilize the business. “Some are already spoilt, and can not be sold, especially the perishable ones” (P3). “They do not always know, and as time goes by they no longer rely on your business.” (P8) “We have had experiences where trucks take too long to be cleared at the border and perishable goods such as agricultural products spoil before they are cleared at the border.” (P5) “We sometimes find ourselves totally out of stock as goods cannot cross the border in time and this can influence our capacity to meet demand.” (P6) Delays are not only detrimental to delivery, but also damaging to our reputation because customers expect consistency and reliability in supply. Such experiences were recurrent throughout the sample, and the participants were always associated with delays and spoilage, missed orders, and poor customer relationships. The intersecting of these narratives suggests that the disruptions are not merely logistical but also relational that has an impact on long-term business sustainability.

Interpretation in Supply Chain Resilience Theory

Considering the Supply Chain Resilience Theory, the findings indicate the exposure of SMEs to external shocks that are likely to test the absorption capacity of SMEs. Border closures are high-impact disruptions that undermine firms to continue core operations. The repetitive character of these disruptions implies that SMEs are experiencing a constantly changing environment, where resilience is not about staying unaffected by such disruptions but getting used to changes and continually staying up-to-date with these changes. This brings out the theory argument that resilience is not only founded on internal preparedness but also on the dynamism of the external system. SMEs exist in the types of environment where external shocks are common and rather uncontrollable, which compels continuous adaptation. The fact that these firms are repeatedly relying on reactive adjustments suggests that these firms are dealing with instability as opposed to conquering it. This is indicative of more structural inefficiencies within regional trade systems in which resilience is not to be determined by internal capacity but as an external condition.

Theme 2: Absorption Strategies Employed

The most common strategies that most of the participants reported to use as their main coping mechanism to disruptions included holding safety stock and pre-positioning goods. “We make sure that we have extra stock, because you cannot tell when the border will close and the business will shut down.” (P6) “If you don’t have backup stock, your operations can completely stop when delays happen, especially when suppliers cannot deliver on time.” (P10) “We attempt to stock things beforehand, particularly in steady times, so that in case of disturbances we are not so much affected.” (P7) “The additional inventory provides us with a certain degree of security since even in case of a break in the supply, we will still be able to satisfy the needs of our customers to some extent.” (P1) The reason why it is so difficult to maintain buffer stock is because of storage costs and capital costs, but without it survival is extremely difficult in this business. That these reactions are similar in their survival logic across SMEs: the continuity imperative overrides the imperative to be cost effective. On the one hand, such strategies enable businesses to operate even in cases of disruption; on the other hand, these strategies present businesses with financial strain in terms of increased storage expenses and tied-up capital.

Interpretation in Supply Chain Resilience Theory

In Supply Chain Resilience Theory, the strategies constitute the absorption capability, in which firms use redundancy in response to the shock. The high dependency on safety stocks, however, means that SMEs do not have more flexible and diversified supply options. In place of strategic optimization, resilience is contributed by expensive buffering processes. This implies that absorption capacity in this regard is reactive and limited, indicating structural inefficiencies and not strong strategic positioning.

Theme 3: Barriers to Effective Absorption

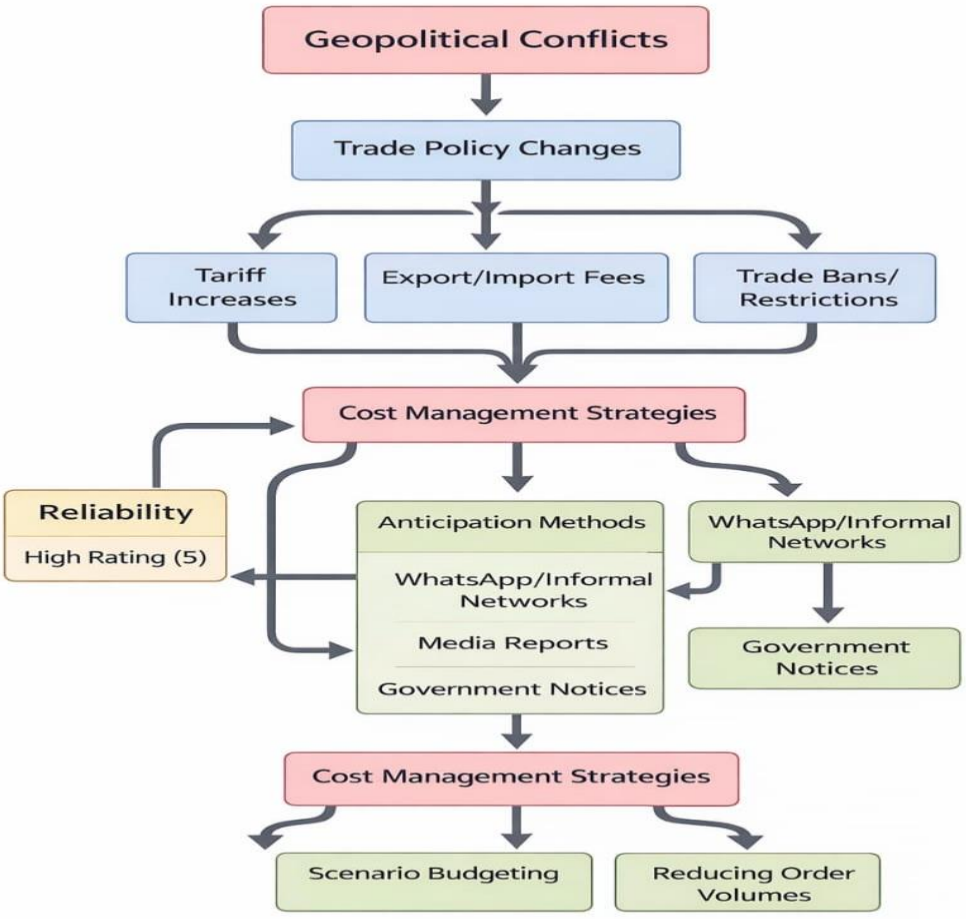
The common response among the participants was that there are structural barriers that inhibit the effectiveness of their absorption strategies, especially high transportation costs and bureaucratic delays. “During disruptions, transport costs are extremely high and at times even when you have stock in the market, the cost of transportation becomes very high.” (P2) It is too long to clear goods because of the procedures to be followed and even in cases where all is well, there is still a delay at the border. It is unsafe to transport goods, especially in times of instability in neighboring countries, because of insecurity along some trade routes. “The addition of time and cost to operations by customs that delay and increase the length of clearance processes make it hard to operate efficiently” (P5). “The difficulty with accessing finance makes it difficult for us to hold sufficient buffer stock to effectively absorb such disruptions.” (P3) These issues were

prevalent among the participants, which implies that external systems have a great influence on resilience, not only through strategies developed by a firm. Although SMEs are planning on how to cope with the disruptions, inefficiencies in infrastructure and administration will hamper their effectiveness in responding to the disruptions.

Interpretation in Supply Chain Resilience Theory

These results emphasize that the structural aspect of resilience in which external limitations have a direct negative effect on absorption capacity. The theory suggests that the resilience is determined by the abilities of a person as well as the favorable external factors. Persistent obstacles to effectiveness of firm-level strategies in this case, include such obstacles as bureaucracy and high costs which have a negative impact on the effectiveness of firm-level strategies.

Figure 2: ATLAS.ti Conceptual Network Diagram for Objective Two



The relationship between trade policy changes, sources of information, and proactive cost management strategies are reflected in the diagram. The network was created by connecting codes like:“tariff increases,” WhatsApp updates, media reports, and budget adjustments based on patterns of co-occurrence within the data.

Key insight: Anticipation is mostly fuelled by informal networks of information which point to the lack of credible formal early-warning mechanisms.

4.3 Objective Two: Anticipation and Management of Cost Increases

Theme 4: Trade Policy Changes and Cost Impacts

The majority of respondents referred to the changes in trade policies as abruptly shocking and instantaneously disruptive to the business. These changes were observed as sudden shocks that have direct impact on the pricing, procurement and profitability. “When new charges are introduced, you don’t have enough time to adjust your pricing strategy, and it immediately affects how you do business.” (P4) When costs elevate without any notice, particularly since customers are not necessarily ready to pay more, you can lose profits very quickly when costs increase unexpectedly. Increases in tariffs cut our margins by a considerable margin since we already run on extremely low profit margins. “It is more costly to conduct business and in some cases more complex due to new regulations and compliance requirements.” (P10) “There are continually changing import fees and this has made it extremely hard to plan or budget effectively.” (P6) Throughout the sample, the respondents were always associated with policy changes to their margins and more uncertainty in their planning. This trend indicates that SMEs conduct their activities within highly sensitive cost bases, where any form of regulatory change can cause an imbalanced financial burden.

Interpretation in Supply Chain Resilience Theory

As a resilience issue, such disruptions indicate the significance of anticipation ability. Changes in trade policy are predictable yet unpredictable risks and should be identified early and prepared. The results however indicate that SMEs cannot in many instances effectively anticipate these changes and therefore are at reactive positions. This presents a disjunction between theoretical anticipational capacity, and practical resource-bound implementation in resource-constrained settings.

Theme 5: Monitoring and Anticipation Methods

The respondents always indicated that they used informal and fast-growing information sources to predict policy changes, especially peer networks and digital communication platforms. “We receive updates via WhatsApp groups where traders chat information fast when there are changes at the border or other new policies are being introduced” (P1) “In some cases, co-workers in the same line of business will inform you of changes ahead of the official announcement.” (P11) “Media also keep us updated on the activities in the region, particularly in conflicts and trade matters.” (P5) “The importance of business networks and associations is that the members alert one another about possible disruptions. The customs officials do not always provide consistent and timely information” (P10). Such reactions indicate that they are all dependent on socially embedded information systems. Although this type of networks are fast and immediate, they also have no formal verification mechanisms, which makes them naturally inconsistent.

Interpretation in Supply Chain Resilience Theory

These practices demonstrate the anticipation ability in practice, in which companies scan their surroundings to identify in advance signs of disturbance. Nonetheless, the fact that informal systems are relied upon is a pointer of the lack of institutional support in structured flow of information. Although these networks make anticipation responsive, they are ineffective because of their lack of reliability.

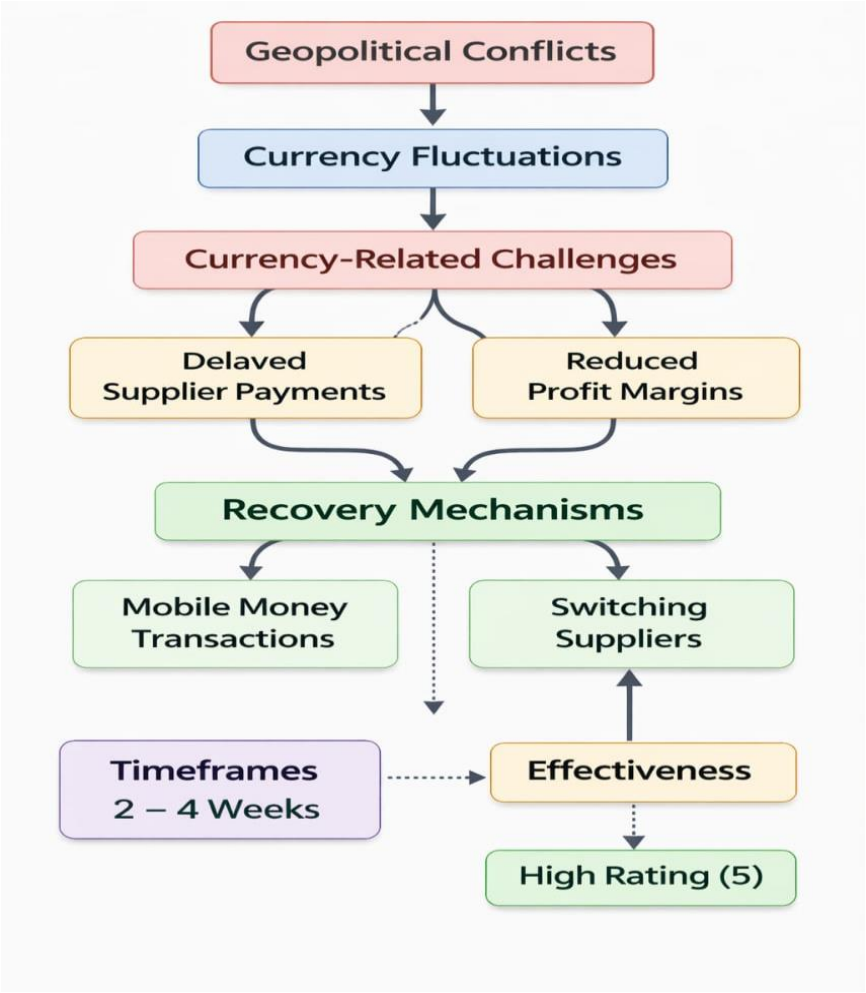
Theme 6: Proactive Cost Management Strategies

Participants in response to the expected increase in costs cited flexible and adaptive approaches to reduce the financial exposure. “We also order less of the goods when we anticipate that the costs will increase so that we do not commit ourselves more than we can afford.” (P5) “We attempt to budget various situations such that we are ready in case the expenses rise at any time.” (P8) “We also vary our prices based on the variations in cost although not always easy with customers.” (P2) “We occasionally switch suppliers to those who would give us better prices or more consistent conditions.” (P9) “We attempt to source locally when the imports are too costly, either in tariffs or transport costs.” (P3) These replies show that there is a calculated move towards the careful operational planning. SMEs deliberately reduce engagements in an effort to maintain liquidity and minimize risk as opposed to expansion or optimization.

Interpretation in Supply Chain Resilience Theory

These strategies are manifestations of the anticipation capability in practice, where the companies are able to adjust operations prior to the disruption fully developing. Nevertheless, the protective aspect of these measures implies that anticipation is employed to avoid the risk instead of achieving the strategic advantage. This is indicative of low ability to fully make use of the expectation of growth, supporting the limited nature of the resilience to uncertain environments.

Figure 3: ATLAS.ti Conceptual Network Diagram for Objective Three



The figure shows correlation between fluctuations in currency, financial disturbances, and recovery plans. The network was created by connecting the codes like payment delays, mobile money, supplier switching, and cash flow challenges.

Key insight: Flexibility of financial instruments and supplier relations is much more valuable in recovery than returning to former circumstances.

4.4 Objective Three: Recovery from Currency Fluctuations

Theme 7: Currency Challenges and Recovery Mechanisms

Respondents always referred to currency fluctuations as a significant cause of financial instability, especially in terms of payments, pricing, and profit margins. When the exchange rates fluctuate abruptly, you would have ended up paying a lot more than anticipated, and this will automatically cut your profits. “The fluctuations cause difficulties in payments since the value of money continues to fluctuate and it becomes hard to plan payments.” (P3) “The problems related to cash flow occur when the payments are delayed, and especially when it concerns customers or partners affected by the same issues.” (P6) “Suppliers may delay deliveries, as well, due to currency fluctuations, and payment risks.” (P8) “When the currency becomes weak, we incur higher costs particularly when it comes to imported goods” (P2). These events point to the fact that currency volatility does not only disruptions in financial planning, but also in supplier relationships, and transaction schedules. To cope with these disturbances, respondents said they had resorted to flexible recovery strategies. “The reason why mobile money is helpful is that transactions are quicker, more dependable throughout unpredictable times.” (P6) “We change suppliers to the ones that are more accommodating to pricing and terms of payments.” (P1) “It has a short-term nature of borrowing funds to handle cash flow issues.” (P4) “Where possible, we use different currencies to minimize risks.” (P5) “We repay terms of payment to suppliers so that we can absorb changes.” (P9) These strategies portray a change toward flexibility as opposed to restoration.

Interpretation in Supply Chain Resilience Theory

These results are indicative of recovery ability, where companies recover following interruption. But rather than going back to the old states, SMEs adjust to new states, meaning a dynamic way of recovering. This much conforms to the flexibility emphasis of the theory but also underscores the fact that recovery in volatile environments is often transformative as opposed to restorative.

Theme 8: Recovery Processes and Learning

According to the participants, recovery was a gradual process that was experience-based, it was influenced by the repetition of experiences of disruption. “It takes time to stabilize once disrupted but given experience one learns to be responsive in shorter and more efficient time.” (P7) We get to learn by the disruptions that occur in the past and this helps us in improving on how we handle the disruptions that come our way in the future. “Due to these challenges that we have encountered in the past, we are now capable of adapting much faster in case these

challenges arose once again." (P3) "Every disruption makes us learn something new about how to handle risks, in a better way." (P8) "After every challenge that we encounter in the business, we keep on improving our strategies." (P6) These narrations emphasize how experiential learning can be used to enhance resiliency.

Interpretation in Supply Chain Resilience Theory

This theme is associated with the development of recovery capability throughout the years, in which learning will increase later responses. The theory states that resilience is dynamic and is formed by means of constant adaptation. The results indicate that experience is a means through which SMEs develop resilience even though this learning process is limited by the constrained environment within which such learning takes place, which limits the degree of full recovery.

4.5 Summary of Findings

The results reveal that Ugandan cross-border SMEs are functioning within a very volatile environment due to the disruption of geopolitics. Absorption strategies are the ones that allow continuity in the short term, but are limited by structural constraints. Informal networks are important in anticipation based on the gaps in the formal systems. Flexibility and experience learning drive recovery because it enables SMEs to adapt and not to completely recover the operations.

In general, resilience becomes attained due to constant adaptation and not stability. The adaptive capacity of SMEs has been high, although the resilience has been partial because of the continued external constraints. Intensifying institutional backing, betterment of infrastructure and better access to credible information would go a long way in enabling them to manage the risk associated with the supply chain.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter is a thorough synthesis of the research findings, and provides conclusions in relation to the research objectives, and the guiding framework of Supply Chain Resilience Theory. The discussion goes beyond mere reiteration of findings by interpretations of the findings in the context of the larger theoretical and practical context of cross-border SME activities in Uganda.

The chapter also gives specific recommendations to the SMEs, the policymakers and the regional institutions and finally gives the contribution of the study and advice on further studies.

5.1 Summary of Findings

5.1.1 Absorption of Supply Chain Disruptions

The research results indicate that border closures are not an isolated or a singular event but rather they are recurrent and unpredictable events that to a large extent determine the operational environment of cross-border SMEs. The participants always characterized these disruptions as destabilizing forces, which not only impact the occurrence of logistical delays but also the overall performance of the business. The delivery schedules are often disrupted and the resultant delay is very long and disrupts the inventory planning and the customer fulfillment process. In the case of perishable goods, these delays will directly translate into spoilage and financial losses as compared to the non-perishable sectors where they may translate into stock-outs that undermines the ability of the firm to serve the market.

Notably, the results demonstrate that such disruptions do not have relational outcomes as the repeated failures to fulfill delivery commitments lead to a loss of customer confidence and a diminishing business relationship in the long-term. To cope with these continual upsets, SMEs are inclined to buffering measures, specifically, to upkeep safety stock. This is an embodiment of a realistic effort of making sure continuity of operations in an environment that is uncertain. The stocking of extra reserves by companies gives them a buffer effect that the firms can still supply their customers even in the face of supply chain disruption.

Nonetheless, as much as this strategy will improve the short-term resilience of an economy, it will cause huge financial strains. Holding inventory beyond normal levels increases the storage expenses and ties up the working capital, which would limit the firm in other activities of the business. Also, external structural circumstances considerably restrict the effect of these absorption strategies. High transport costs, ineffective border practices and limited access to financing were among the key factors that diminish their ability to absorb disruptions in their capacity. This shows that absorption is just not a firm-only capability but also highly affected by the system-level inefficiencies in the larger trade environment. This means that SMEs are not

merely dealing with the disruptions by strategic optimization but operating within a limited system which constrains the effectiveness of their responses.

5.1.2 Anticipation and Management of Cost Increases

According to the findings of the study, SMEs experience the changes in trade policy (increasing tariffs and alterations in regulations) as sudden and to a large extent unpredictable shocks. These changes do not only upset the cost structures that have been established, but they also bring about a great degree of uncertainty when it comes to operational planning. The respondents always indicated that such changes instantly add to the cost of doing business, squeeze already tight profit margins and make pricing decisions more difficult. This uncertainty is further aggravated by lack of prior notice or organised communication systems, which make it hard to plan effectively by SMEs.

Without any formal forecasting systems, SMEs have to heavily depend on in-formal information networks to predict these changes. These networks that incorporate peer traders, business associations, and digital communication platforms like WhatsApp groups are very important networks in terms of spreading information quickly. Although these systems are fast, and easily accessible, they are not reliable and consistent because the information being shared is normally unverified and prone to change. Such dependence on informal systems is not only a limitation of resources available to SMEs but also a lack of institutional support systems to facilitate the flow of information in an organized manner.

To cope with the expected increase in costs, the SMEs embrace various adaptive measures that will help them to reduce financial exposure. These are; reducing the order quantities to limit the risk, changing the prices in response to the changes in the costs and switching the suppliers to access more advantageous terms and to avoid the costs associated with importation. Although these strategies prove to a certain extent that they are proactive in nature, these strategies are mostly defensive in nature. Instead of using anticipation as a competitive advantage, SMEs are geared towards maintaining viability of operations. This implies that anticipation, in this regard, acts more as a risk avoidance process than a strategic planning process.

5.1.3 Recovery from Currency Fluctuations

Currency volatility proved to be an important and invariably fraught with financial turmoil to the cross-border SMEs. The changes in the exchange rates directly influence the cost of imports, the value of payments, and stability of cash flows. The respondents indicated that the abrupt fluctuations in the currency values give them uncertainty in the planning of their transactions whereby they find themselves in situations where they are pleasantly surprised by the unexpected increase in the costs and the reduced profitability. These difficulties are also compounded by the fact that payment delays and interconnectedness of supply chains through which financial instability spreads among buyers and suppliers.

To counter these shocks, the SMEs use a variety of adaptive recovery processes which demonstrate a high level of adaptability. Mobile money platforms enable the completion of transactions that are much faster and more reliable, especially in the unsure financial climate. Switching suppliers enables companies to adapt to more desirable pricing or payment terms, whereas short-term borrowing assists to overcome the immediate cash flow issues. Also, there is the adoption of multi-currency transactions and renegotiation of the terms of payment which provide means through which exposure to currency risk can be reduced.

These recovery plans imply that SMEs are not aiming at reviving their operations to a former stable position but rather, adjust to new financial realities. The process of recovery is hence not a restoration process but a process of constant adaptation. It is a dynamic form of resilience whereby firms adapt to the continual instability by being flexible and innovative, as opposed to through some organized financial structure or long-term strategic planning.

5.2 Conclusions

The results of the proposed study give rise to a number of crucial conclusions as to the nature of the supply chain resilience of the cross-border SMEs in Uganda.

First, although SMEs have proven that they are able to absorb disruption by buffering, the capacity is very reactive and costly. The use of safety stock is an indication of a survival oriented system and not a strategically optimized system. In addition, external structural constraints greatly restrict absorption effectiveness, and it shows that the capabilities of firms in the context of the overall trade environment are interdependent.

Second, there is the availability of anticipation skills among SMEs but they are very informal and unstructured. Although informal networks are very effective in providing timely information, they are not very effective tools that can be used to plan the strategies. Consequently, anticipation is mostly utilized to endorse short-term corrections as opposed to long-term decision making.

Third, recovery mechanisms within SMEs are typified by flexibility and adaptability especially in the areas of financial management and supplier relationship. Nevertheless, these processes are mostly short-term based and do not result in the long-term strategic resilience. SMEs are dynamic in response to disturbances since they respond to short term disturbances but have no resources and systems to make a long term transformation.

In general, the research finds that the resilience of SMEs in Uganda is adaptive and structurally limited. Although SMEs proactively respond to disruptions through the mechanisms available, their response strategies are mainly survival-focused, informal and proactive. This shows there is a great disparity between the theoretical construct of supply chain resilience and how it is practically applied in resource-constrained environments.

5.3 Recommendations

The results of this research indicate that specific interventions at various levels are necessary to make the cross border SMEs more resilient. At the firm level, SMEs need to progressively move away reactive coping strategies and more structured strategies to deal with risks. This involves diversifying the supplier networks in order to reduce dependency on certain trade routes, adoption of basic digital tools to enhance planning of inventory and cost forecasting, and increased involvement in formal business associations to increase access to reliable information. Although the lack of resources might not allow implementing the changes in the nearest future, the gradual implementation of these practices can contribute significantly to the enhancement of resilience in the future.

At the policy level, it is necessary to have government intervention to overcome structural barriers that limit SME resilience. By making border processes more efficient and cutting down on the time wasted at bureaucracies, border efficiency would be greatly enhanced. Also, the introduction of formal early-warning systems to trade policy changes would allow SMEs to get a

better understanding of disruptions. Better access to cheaper financing is also a priority, as it would enable SMEs to implement more sustainable resilience strategies as opposed to simple buffering.

At regional level, organizations like the East African Community (EAC) and COMESA should aim at improving the policy coordination to minimise the frequency and unpredictability of change in policy. Bringing centralized information platforms that would regularly update SMEs on the risks would also help SMEs to manage risks more effectively.

5.4 Contribution of the Study

This research paper is relevant to the existing literature because it presents empirical evidence on the operationalization of supply chain resilience in SME settings that are resource-constrained. It builds upon Supply Chain Resilience Theory by showing that in reality, resilience is created not just through firm-level capabilities, but also through structural conditions and informal systems. The research also gives practical ideas of the lived experiences of SMEs, which shows the gap between theoretical concepts and the real-life experiences.

5.5 Areas for Further Research

The research that was conducted in this study should be followed with additional studies that will be aimed at the quantitative assessment of the effectiveness of the resilience strategies which were identified in the course of the research conducted in this study.

Additional research directions would involve examining the impact of digital technologies in improving resilience of SMEs, or comparing the results across various regions or sectors. Further, the interplay between formal and informal information systems in the formation of anticipation abilities is an area with a lot to be discovered.

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APPENDICES

APPENDIX 1: Interview Guide for Semi-Structured Interviews

Abstract: The research aims to explore how to manage supply chain risk when faced with geopolitical conflicts: the case study of cross-border small and medium-sized enterprises (SMEs) in Uganda.

Researcher: Emba Joseph (S23B12/010)

The Guide is meant to serve as: This semi-structured interview guide is aimed at investigating the lived experiences of Ugandan cross-border SME managers or owners in managing supply chain risks arising due to geopolitical conflicts (20202024).

Interviews will be 40-60 minutes long, will be audio-recorded (with permission) and will be based on open-ended questions to allow flexibility to the emerging themes.

The guide is based on the research questions and Supply Chain Resilience Theory (anticipation, absorption, recovery) of the research.

Target Respondents: 10 purposely sampled SME owners, operations managers, logistics supervisors or cross-border trade coordinators with at least 5 years or more experience in corridors such as Busia, Malaba, Elegu or Mpondwe.

Introduction Script (to be read at beginning):

Thanks to you, you accepted to participate. The interview is a subset of my research on the management of supply chain risks of geopolitical factors such as close-down of a border or conflict. Your suggestions will be helpful and will not be disclosed to others. I will report using pseudonyms. It is a voluntary participation; you can quit at any time. Are you agreeable to recording? Any questions prior to our start?

Part A: Background and Business Context.

1. Could you please describe briefly your business: What products do you trade across countries borders, with the main partners or countries and what role do you play in the operations of the business?

2. How long has your SME been doing cross-border trade and what are the key borders that it operates in such as Busia, Malaba, Elegu?

3. Generally what are the largest challenges your business is experiencing in its day-to-day supply chain activities?

Part B: Geopolitical Conflicts and their effect on Supply Chain Risks.

(References to Objective 1 and Research Question base; investigate the overall effects)

4. What specific geopolitical events such as the Uganda-Rwanda border issues, DRC conflicts, South Sudan unrest, Russia-Ukraine war effects that disrupted your supply chain can you describe?

5. What were the risks caused by these events, such as delays in delivery, higher costs, loss in inventory or problems with cash flow?

6. What were the operational, financial or strategic implications of your experience in an SME such as lack of sales, spoilage of perishable goods, loss of markets?

Section C: Absorption Capacity -Handling Border Closures.

(Connections with Objective 2 and RQ1: How SMEs mitigate the effects of border closure)

7. Have you examples of border closures, such as Bunagana, Elegu delays among others your business had to face in 20202024?

8. What were the impacts of these closures on delivery time and inventory control such as stockouts and spoilage?

9. How did you keep operations going during the times of closures such as safety stocks, alternate routes, buffer warehousing, multiple border points?

10. What level of effectiveness did these strategies have and what obstacles or costs did they bring about e.g. more storage or capital tie-up?

Section D: Anticipation Capabilities - dealing with Tariffs and trade restraints.

(Links to Objective 3 and RQ2: Proactive management of tariffs or restrictions)

11. Explain how tariff increases, trade barriers or policy changes such as EAC or COMESA tariffs, export taxes and others have impacted your costs or plans in 2020-2024.

12. What are the proactive ways of anticipating or tracking such changes such as networks, WhatsApp groups, associations, customs officials?

13. What are some of the steps you take in advance to deal with increased costs like local sourcing, scenario planning or supplier contracts?

14. How effective are these anticipation activities and what are your limitations such as informal-based information credibility or lack of digital tools?

Section E: Recovery Mechanisms - The Restoration of Stability in the wake of currency fluctuations.

(Links to Objective 4 and RQ3: Recovery post-currency shocks)

15. What implications of currency fluctuations such as UGX depreciation, collapse of South Sudan pound among others, have affected your cash flow or financial stability in 20202024?

16. What mechanisms did you use to recover for example multi-currency invoicing, SACCOs/VSLAs, supplier switching or forward contracts)?

17. What was the approximate time to recover and what hastened the recovery process such as informal networks or mobile money?

18. What were some of the lessons you learned to enhance future recovery such as building reserves or diversifying the currencies?

Section F: General resilience and recommendations.

(Closing; more general understanding and policy or practical implications)

19. Overall, how resilient do you feel your SME is to geopolitical supply chain risks, and what factors for example size, informal networks or associations help?

20. What are the tips that you would offer other cross-border SMEs to develop resilience?

21. What do you think the policymakers such as EAC, COMESA, URA or associations could do to help manage these risks, better?

Closing Script:

Thank you, it was a pleasure speaking with you and having your insight. Do you have any other additions that you would like to make?