



**Supply Chain Innovations & Firm Strategy: Pathways to Manage Institutional Voids in
Emerging Markets.**

Case Study of Manufacturing Firms in Uganda

**Thesis Submitted in fulfilment for the Award Degree of
Doctor of Philosophy in Business Administration**

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by

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PLAGIARISM DECLARATION

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Professor Richard Chivaka.

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ABSTRACT

The outbreak of the corona virus pandemic in 2020 exposed the vulnerability of the global supply chain to external shocks. The impact of this problem was felt more especially in the global South where manufacturing is underdeveloped and relies heavily for supplies from the global North. A resilient and sustainable supply chain network is of practical importance in developing a strong manufacturing sector in Uganda's emerging or growing market. However, due to institutional voids, the manufacturing industry has come under pressure, which has impacted manufacturing firms' operational efficiencies.

The overarching purpose of this study was to investigate why and how manufacturing firms in Uganda should apply supply chain innovations and firm strategies to ameliorate institutional voids. Extant literature shows that limited discourse has focused on how manufacturing firms respond to institutional voids in Sub-Saharan Africa. This study sheds light on the identified research gaps, a theoretical gap in prior research in the supply chain discipline. Previous empirical work in the supply chain has relied much on Resource-Based View of the Firm and Transactional Cost Theories to study institutional voids in emerging markets, and therefore, Institutional Theory is relatively not used to understand this phenomenon.

The study used methods used to collect data. Firstly, multiple case studies were used to collect relevant qualitative data about the state of the supply chain and how and why firms use supply chain innovations and firm strategy to counter the impact of institutional voids. An in-depth qualitative interview with 25 participants was conducted via the zoom platform. Secondly, a survey was used, and a random sampling approach was used to identify research participants from 95 manufacturing firms.

Firstly, the findings showed that several institutional voids exist in the Uganda manufacturing industry in terms of the product, labor, capital, regulatory and macro spheres exist across the supply chain. Secondly, manufacturing firms in Uganda respond to these voids by deploying strategies such as accepting or changing the landscape through advocacy, political ties, trust. In addition, they bring innovations in and around institutional voids, create partnerships, engage in supplier development, and develop robust business models including last-mile strategies to ensure product availability, despite the poor infrastructure that hinders product delivery to remote areas.

Thirdly, several barriers asphyxiate firms from entirely alleviating these gaps, such as access to technology, cultural bottlenecks, skills gap, the energy crisis in the manufacturing sector, political upheavals that threaten capital formation in the sector, cost barriers, low absorptive capacity in the formal and informal sector.

Fourthly, the results showed that manufacturing firms' specific supply chain innovations to combat institutional voids included (i) energy reduction initiatives across the supply chain, (ii) redesigning manufacturing systems, and (iii) processes to reduce raw material wastage, energy consumption, and pollutions. The social impact of the supply chain has resulted in improved living conditions of the consumers and communities, through climate change initiatives such planting trees to provide alternative energy sources for manufacturing firms. The results shows that supply chain innovations exemplified by reduce, reuse, and recycle principles have resulted in some manufacturing firms using coffee husks and waste from other industries such as brewing by-products, to reduce the over-dependence on furnace oil as a source of energy.

This study makes a significant original contribution to knowledge in lessening the theoretical, methodological, and contextual gaps identified in the literature and promotes institutional theory application in the supply chain management discipline. The research adds to the existing literature

about institutional voids in emerging markets with particular attention on the supply chain and how supply chain innovations and firm strategy can be used to ameliorate institutional voids. The study's practical implication shows a need to develop scalable supply chain innovations to alleviate the wicked problems in developing markets: poverty, disease, and unemployment, which is a problem in Uganda.

Additional interventions and suggestions are to conduct studies in other East African countries to verify the results from this study and compare how firms in the manufacturing and service industries respond to institutional voids in the developing countries in East Africa. The propositions developed in this study can also be tested across multiple industries in Sub-Saharan African countries to provide scholars with new datasets and insights on how firms respond to institutional voids in the region.

Key Words: Institutional Voids, Emerging Markets, Supply Chain Innovations, Firm Strategy, Firm Performance & Institutional Theory.

ACRONYMS

3D: Three-Dimensional

3R: Recycle, Reuse, Reduce

ABC: Absorptive Capacity

ADB: African Development Bank

AfDB: African Development Bank

AGFI: Adjusted Goodness to Fit Index

AGOA: African Growth Opportunities Act

AI: Artificial Intelligence

AM: Addictive Manufacturing

AMOS: Analysis of a Moment Structure

ANOVA: Analysis of Variance

ARVs: Antiretroviral Treatment

AUVs: Aerial unmanned vehicles

AVE: Average Variance Explained

B2B: Business to Business

BDPA: Big Data Predictive Analysis

BoU: Bank of Uganda

BUBU: Buy Uganda Build Uganda

CAQDAS: Computer Assisted Qualitative Data Analysis Software.

CATI: Computer Assisted Telephone Interview

CBCL: Century Bottling Company

CFA: Confirmatory Factor Analysis

CFI: Comparative Fit Index

CGI: Competitive Global Index

CO₂: Carbon Dioxide

COMESA: Common Markets for East & Southern Africa

CPI: Consumer Price Index

CR: Composite Reliability

CSR: Corporate Social Responsibility

DEA: Data Enveloped Analysis

DRC: Democratic Republic of Congo

DV: Dependent Variable

EABL: East Africa Breweries Limited

EAC: East African Community

EFA: Exploratory Factor Analysis

EM: Emerging Markets

ERA: Electricity Regulatory Authority

ERP: Enterprise Resources Planning

EU: European Union

FDI: Foreign Direct Investment

FMCG: First Moving Consumer Goods

Forex: Foreign Exchange

FY: Financial Year

GDP: Gross Domestic Products

GoU: Government of Uganda

GSCM: Green Supply Chain Management

GVCT: Global Value Chain Theory

HBS: Harvard Business School

HIV: Human Immunodeficiency Virus

HM: Her Majesty

HTMT: Heterotrait Monotrait

IBM: International Business Machine

ICT: Information & Communication Technology

IMF: International Monetary Fund

IMF: International Monetary Fund

IoT: Internet of Things

IT: Information Technology

IT: Institutional Theory

IV: Independent Variable

KMO: Kaiser-Meyer-Olkin

ML: Maximum Likelihood

MNC: Multinational Corporations

MoFFED: Ministry of Finance & Economic Development

MT: Managerial Ties

MVA: Manufacturing Value Add

MW: Mega Watts

NBL: Nile Breweries Limited

NDP: National Development Plan

NFI: Non (Normed) Fit Index

NPD: New Product Development

OEM: Original Equipment Manufacturer

PAPI: Paper & Pencil Interview

PSDS: Private Sector Development Strategy

QDA: Qualitative Data Analysis

R&D: Research and Development

RBV: Resource Based View

RMSEA: Root Mean Square Error of Approximate

S.E. Standard Error

SAA: Sub Sharan Africa

SAP: Structural Adjustment Programme

SAP: Systems Applications & Products

SC: Supply Chain

SCI: Supply Chain Innovation

SCM: Supply Chain Management

SCOR: Supply Chain Operations References

SEM: Structural Equation Modelling

SEM: Sequential Equation Modelling

SoE: State Owned Enterprises

SPSS: Statistical Package for Social Scientist

SRM: Supplier Relationship Management

SRMR: Standardized Root Mean Square Residual

SSCMF: Sustainable Supply Chain Management Framework

STEM: Science Technology Engineering Mathematics

TCE: Transaction Cost Economics

TLI: Tucker Lewis Index

UBL: Uganda Breweries Limited

UBOS: Uganda Bureau of Standards

UCB: Uganda Commercial Bank

UCT: University of Cape Town

UDB: Uganda Development Banks

UEB: Uganda Electricity Board

UEDCL: Uganda Electricity Distribution Company Limited

UEGCL: Uganda Electricity Generation Company Limited

UEGCL: Uganda Electricity Generation Company Limited

UEPB: Uganda Export Promotion Board

UETCL: Uganda Electricity Transmission Company Limited

UGX: Uganda Shillings

UIA: Uganda Investment Authority

UK: United Kingdom

UMA: Uganda Manufacturers Associations

UN: United Nations

UNBOS: Uganda National Bureau of Standards

UNRA: Uganda National Roads Authority

URA: Uganda Revenue Authority

USA: United States of America

USD: United States Dollar

USE: Uganda Stock Exchange

VIF: Variance Inflation Factor

VMI: Vendor Managed Inventory

WB: World Bank

YoY: Year on Year

SOUTH AFRICA NATIONAL ANTHEM

“Nkosi sikelel’ iAfrika
Maluphakanyisw’ uphondolwayo,
Yizwa imithandazo yethu,
Nkosi sikelela, thina lusapho lwayo

Morena boloka etjhaba sa heso,
O fedise dintwa la matshwenyeho,
O se boloke,
O se boloke setjhaba sa heso,
Setjhaba sa South Afrika – South Afrika.

Uit die blou van onse hemel,
Uit die diepte van ons see,
Oor ons ewige gebergtes,
Waar die kranse antwoord gee.

Sounds the call to come together,
And united we shall stand,
Let us live and strive for freedom,
In South Africa, our land.”

EAST AFRICAN NATIONAL ANTHEM

“Ee Mung twaomba ulinde
Oh God, we ask you to protect
Jumuiya Afrika Mashariki
Our East African Community
Tuwezeshe kuishi kwa amani
Enable us to live in peace
Tutimize na Malengo yetu
And accomplish our tasks

Jumiya Yeto sote tuilinde
Let us all protect our community
Tuwajibike tuimarike
We should work hard, to strengthen it
Umoja wetu ni nguzu yetu
Our unity is our pillar
Idumu Jumuiya yetu
So, sustain our community

Uzelendo pia msharikamano
Patriotism and togetherness
Viwe msingi wa Umoja wetu
Be the pillars of our unity
Na tulinde Uhuru na Amani
May we guard our Independence and peace
Mila zetu na desturi zetu
Our culture and tradition

Viwandani na hata mashambani

In Industries and farms

Tufange kazi sote kwa makini

Let us all work diligently

Tujiote kwa hali na mali

Let us devote ourselves for our wealth

Tuijenge Jumiya bora

So, as to build a better community”

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CHAPTER ONE: INTRODUCTION

“If my father had sent me to school; I would have become president.” — Nekolina Apio Alal
(my mother) 1984, when I did not want to go to school but graze cattle.

“I am the product of the masses of my country and the product of my enemy.” — Winnie
Madikezela Mandela, 1996.

1.1 Introduction

Institutional voids are one of the key themes of international and management research in emerging markets (Khanna & Palepu, 1997; Doh et al, 2016; Luiz et al, 2015). The recent coronavirus pandemic and its impact on the global supply chain has exposed the role of institutional voids and the vulnerability of the global supply chains to external shock due to institutional voids (Free & Hecimovic, 2021; Yu et al, 2021 and Panwar et al, 2022).

Several international business scholars have studied the influence of weak institutional infrastructures in emerging markets over the past three decades and offered solutions to build strong institutions to mitigate these voids (Mair et al., 2007; Khanna & Palepu, 2005; Gao et al, 2017; Wu et al, 2020). Supply chain innovations and firm strategy have been proposed to combat institutional void problems in emerging markets (Parmigiani & Rivera-Santos, 2015; Doh et al., 2017).

The scale-up of innovative ideas in emerging markets to address institutional voids and supply chains offer a starting point in advancing new ideas for reducing costs, building a sustainable and resilient supply chain to create more jobs, and addressing societal problems (Abdel-Basset et al, 2018; Tang, 2018). Moreover, specific supply chain innovations in the manufacturing industry could be used to address institutional voids. Mitigating institutional voids can benefit emerging

markets countries since the supply chain offers transformative agendas to address societal gaps (Yeoman & Santos, 2019).

The scholarship on institutional voids has shown the complex influence of institutions on organisations. Many studies have focused on critical elements of both informal and formal institutions and how they impact business in underdeveloped markets (North, 1990; Williamson, 2000; Wang et al., 2019). In contrast, others have concentrated on informal institutions and social elements (DiMaggio & Powell, 1983; Friel, 2017).

There are varied definitions of institutions, such as those offered in North (1990) highlights three elements in the conceptual analysis of institutions: politics, economics, and social interactions, while more recently, Scott (2014:56) mentions "regulative, normative and culture cognitive elements." In addition, Lammers & Barbour (2006) defined institution as a collection of recognised practices driven by persistent, formal, rational beliefs beyond organisations and contexts.

The current discourse on institutional research has focused on variations of organisations and how they respond to complexities, such as family ownership and control of the significant business (Bhalla et al, 2016; Peng et al, 2010). International business and management strategy scholars have reiterated the need to refocus institutional research to examine the nuances of institutional voids that pervade emerging markets through a well-balanced approach, strategies, structure, and processes, such as the use of entrepreneurship to resolve institutional voids through informal and formal institutional voids (Mair & Marti, 2009; Puffer et al., 2010; Scott, 2005; Mayer et al., 2016). Institutional voids offer opportunities for new businesses to develop in emerging markets to fill identified voids through local content creation (Harrison et al., 2019; Hansen, 2020). Moreover, it is challenging to implement tested business models in developed markets without adapting to local

conditions in emerging markets because of institutional voids, which leave the firms with two options to adapt the model to existing markets or develop new business models for the emerging markets (Khanna & Palepu, 2010; Abdelkafi, & Pero, 2018; Koniotzko et al., 2020).

Also, a significant group of consumers in emerging markets are inaccessible due to infrastructure voids. New business emerges in the manufacturing sector's value chain and business model to target this group of consumers, provide solutions, and exploit the potential available at the bottom of the pyramid in emerging markets (Barbour & Luiz, 2019; El Ebrashi & Aziz, 2017).

Meyer & Grosse (2018) contend that emerging markets such as India offer more opportunities because of institutional voids. However, manufacturing firms' supply chain leaders need to manage these opportunities through effective decision-making and building capabilities in the supply chain (Mostafiz et al., 2020). Various capabilities such as networking, learning, and market capabilities are needed in the following areas: firm performance, innovations, business models, distribution channels and strategies, demand forecast and inventory, and research and development, which have elements of institutional voids (Luiz et al, 2017).

The main problem in an emerging market is tailoring the supply chain to respond to institutional voids. Also, in an emerging market, the supply chain must respond with goods and services that match the demand and tastes of consumers, given the diverse culture and economies in emerging markets (Dadzie et al., 2017). The population demographic in emerging markets demands a new approach and offering through inclusive innovations in the value chain (Yadav, 2014). These innovations can be used to address the social costs of the institutions (Rodrigues, 2013). The emerging market is rapidly growing, and consumer taste is also rapidly changing. Therefore, supply chain leaders must adapt their strategies to meet these new demands and respond better and quicker (Dadzie et al., 2017).

The placement of supply chains and other supporting activities in emerging markets could be more robust because of institutional voids (Khanna & Palepu, 2010). Supply chain managers must strategically get the supply chain position to respond to institutional voids through a structured decision-making approach. Furthermore, in emerging markets, the supply chain has not reached maturity due to institutional voids and cannot withstand any disruptions such as those witnessed post-pandemic due institutional voids. Institutional voids impact the manufacturing and distribution of products, and there is a need to streamline the supply chain strategy and processes to respond to voids (Munoobhai, 2014). Likewise, because of poor transport infrastructure in emerging markets, supply chains face prolonged lead times in some emerging markets in sub-Saharan Africa (Luiz & Ruplal, 2013).

Besides, the demand forecast should be accurate to reduce the bullwhip effect in the supply chain. However, regional supply chains are more stable than global value chains during uncertainties, and demand forecasts must be accurate to address these voids (Alvarado-Vargas, & Kelley, 2019). Moreover, the information void impacts the demand forecast, which results in a bullwhip effect in the manufacturing supply chain (Kingsley & Graham, 2017; Martínez, 2018).

The firms in emerging markets must engage in supplier development to fill the gap created by institutional voids (Wesley et al., 2019). The manufacturing industry in emerging markets needs better supply base rationalisation, especially local suppliers (Luiz et al., 2021). For example, India's automobile manufacturers had to develop components and parts suppliers to support the industry (Kumar, 2018).

In addition, the need for raw materials in the local market presents a challenge because suppliers are thousands of miles away from their supply chains. Therefore, multinational corporation (MNCs) has responded to these voids by securing supply and developing local suppliers to fill these voids

(Hernandez et al., 2018). Moreover, developing local suppliers can enable manufacturing firms to address bottlenecks in the supply chain and drive economic growth.

However, Sub-Saharan African emerging markets rely on other emerging markets, such as China and India, as a source of raw materials for their manufacturing sector (Khan & Arora, 2017). This can be explained by the extensive supplier base developed by China and India in the last three decades. Also, China and India have gone through similar experiences constructing the supply chain to respond to institutional voids through supply chain innovations and firm strategy. It has resulted in these two countries becoming powerhouses in manufacturing. Besides, China and India built a robust supply chain to ship manufactured goods to the rest of the globe (Dubey et al., 2018).

1.2 Background and Context of the Study

Uganda is abundant in natural resources, and the discovery of oil offers both downstream and upstream manufacturing opportunities (Mawejje, 2019). The management of oil resources and well is critical to the country's economic performance in the decades to come and should offer a new era of opportunities in Uganda's manufacturing industry sector and economic transformation (Boso et al, 2019).

The manufacturing and entrepreneurial ecosystem in Uganda has been confronted with systematic challenges that have taken several decades to address (Hansen et al., 2016; Lwanga et al., 2019). Institutional void is one of the primary challenges hindering the development of Uganda's manufacturing and entrepreneurial ecosystem (Bendickson et al, 2020). Significant work must be done to make the manufacturing sector contributes meaningfully to Gross Domestic Product (GDP) in Uganda is far behind compared to the other countries in the region, such as Kenya and Tanzania, which are natural benchmarks for Uganda (Mbalyohere et al., 2018; Liu, & Stephens, 2019).

The overall contribution of the manufacturing industry in Uganda is critical to increasing the gross domestic product (GDP) and propelling Uganda into a middle-income economy over the next two decades (Harrison et al., 2018). Done well, it can considerably improve the living standard of the average citizen and reduce poverty and income inequality (Hausmann et al., 2014; Dorosh & Thurlow, 2014).

But, in the absence or lack thereof of quality institutional and numerous institutional gaps, the manufacturing performance continues to perform dismally compared to her regional peers. This poor performance has been attributed to institutional voids (Ishengoma & Kappel, 2017; Tumusiime et al., 2019; Mijiyawa, 2017; Kasekende et al., 2020).

The dataset shows that the share of manufacturing to GDP doubled for FY18/19 from 8 per cent to 16 per cent of GDP (Walker, 2020) compared to Kenya's 9.2% and Tanzania's 25.1 per cent—manufacturing matters in emerging markets (Kiveu et al., 2019; Felipe et al., 2019). Furthermore, manufacturing creates several job opportunities in the global value chains (Pahl et al., 2019).

The manufacturing share of total formal employment in FY18/19 was 9.5% compared to 64.3% in agriculture, forestry, and fisheries and 28.2% in the service industry (UBOS, 2020). These figures show why its manufacturing matters in Uganda, and doubling the efforts of manufacturing firms would significantly contribute to both GDP and unemployment.

To address the above problem, Uganda formulated the 2040 vision to transform the country from a primary peasantry and rural economic setting with meagre household income to a middle-class economy and achieve middle-income status by 2040. The vision reiterates the significance of the manufacturing sector and how it can contribute towards this goal (Etyang et al., 2016; Muwanguzi et al., 2019).

In addition, the manufacturing sector must rapidly develop to create more opportunities for the urban youth and curb high unemployment reported at over 70% (UNBOS, 2015; Alfonsi et al, 2020). From the 1990s onwards, Uganda undertook considerable policy and institutional reforms backed by the IMF. These policy shifts have seen the economy perform better, albeit with institutional challenges (Carmody, 2017).

Uganda has embarked on infrastructure development through the China Belt and Roads initiatives. Several road networks, power, telecommunication, oil pipeline, and standard gauge railway network linking East African countries have been implemented to alleviate institutional voids (Chege et al., 2020; Wissenbach, 2020; Fan et al., 2023). However, industrialisation and improving the manufacturing value chains and value additions face numerous institutional challenges, such as high-interest rates and political insecurity in Uganda, Southern Sudan, DRC, Rwanda, and Burundi (Mhandara, 2020; Lashitew et al., 2022).

The literature from advanced economies exemplifies that the production and exportation of manufactured products are the best routes to economic development and middle-income status, which is the "holy grail" for most emerging market countries such as Uganda. The core driver's economic development and emerging economies thinking about competition with the West lies in a well-developed manufacturing value chain (Lashitew, 2020).

Furthermore, the manufacturing sector must significantly enhance productivity, innovations, research, and development (R&D). A competitive value chain to create backward and forward linkages is required in emerging economies such as Uganda (Wang et al, 2020b). It must be debated that the upward and downward linkage is critical for diversifying the manufacturing value chain and the broader Uganda economy, in general, to compete with other emerging African economies (Okumu & Buyinza, 2020).

However, robust institutional framework and quality is required to achieve diversification and the supply chain and value chain. Institutions refer to the 'rule of the game' (North, 1990; Borda et al, 2017) and supply chains in emerging markets must have a robust institutional framework arrangement to thrive. Institutions guide market players on norms and values while conducting business in emerging markets like Uganda. Besides, the emerging market supply chain bottleneck can be addressed by restructuring institutional arrangements to define and regulate the competitive environments of manufacturing firms. A robust institutional framework is required to build strong emerging markets (Mair et al., 2017).

The role of supply chain in supporting and stimulating economic growth in emerging markets such Uganda cannot be understated. However, for the supply chain to support manufacturing to stimulate economic growth, there is a need for supply chain innovation and firm strategy to address the challenges brought about because of institutional gaps in emerging markets. Institutional voids have received considerable attention from management scholars over the last two decades. Numerous inquiries have been conducted in emerging markets to examine how firms manage the impacts of institutional voids (Gao et al., 2017; Fiedler et al., 2017; Gao et al., 2015).

Moreover, limited studies have been conducted in Uganda to examine the supply chain as a source of competitive advantage in the manufacturing sector (Silvestre, 2015). Extant literature on institutional voids highlights supply chain innovation in emerging markets as a critical area of discourse in the context of institutional voids (Hamann et al., 2020). Supply chain innovation involves multiple decision-making by the supply chain actors upstream and downstream of the manufacturing value chain due to both markets and non-market institutional voids in emerging markets (Kusi-Sarpong et al., 2019; Arlbjorn et al., 2011).

This study is positioned to contribute towards international business and management strategy. It offers an alternative view of how to use supply chain innovations and firm strategy in emerging markets as a source of opportunities to assuage institutional voids and enhance supply chain performance in manufacturing supply chains in the context of institutional voids where key intermediaries are missing (Khanna & Palepu, 2010, p. 80; Franczak et al., 2023). Moreover, the supply chain and other intermediaries are vital in improving business process innovation in international business.

Although the supply chain in emerging markets is at its nascent stage. Therefore, there is a need to investigate and understand how supply chain innovation and firm strategy in a market where institutional voids or gaps exist can improve the supply chain performance and: enhance a firm's performance, distribution strategy, profitability, innovation, R&D, and ultimately firm performance through reduced inventory, collaboration, and superior business model innovation to address institutional market gaps (Basole et al, 2017; Piotrowicz & Cuthbertson, 2015).

1.3 Purpose of the Study

The overriding purpose of this mixed methods research was to probe into why and how supply chain innovation and firm strategy are a panacea for managing the challenges because of institutional voids in emerging markets. Moreover, the study extends the debate on institutional theory and institutional voids in international business and management studies from a novel contextual angle and setting (Bruton et al, 2010).

1.4 Objective of the Study

The principal purpose of this research is to investigate the impact of supply chain innovation in managing institutional voids in emerging markets with a key focus on Uganda. The study makes an original contribution to knowledge towards theory in that it applies institutional theory in the

context of emerging markets and examines the concepts considering supply chain innovation and firm strategy to attend to institutional voids through the adopting of new practices in the manufacturing value chains to improve the performance of firms in emerging markets (Bustinza, et al, 2020).

1.5 Background to the problem

Several strands of institutional theory can be used to explicate the influence of institutional voids on supply chain innovations and firm strategy-making in emerging markets. Institutional Voids in emerging markets have been defined as weak institutional infrastructure (Khanna & Palepu, 1997). In contrast, economics views institutional voids from an exchange and value creation perspective (Chakrabarty, 2009; Wang et al., 2020; Garrone et al., 2019).

The historical perspective in Uganda shows institutions as ineffective due to the political dispensation traced back to pre-colonial, colonial, and independence and up to the present, despite the aggressive liberalisation in the early 1990s aimed at strengthening institutional framework (Collier & Reinikka, 2001). However, Uganda's political problem continues to distort the "rules of the game" (North, 1990, p.11).

In emerging markets, institutional voids manifest themselves in three critical areas of the supply chain: i) the product market, ii) the capital market, and iii) labour markets and macro institutional voids (Khanna & Palepu, 2010). Some institutional voids are firm-specific and country-specific (Yaprak et al., 2018). Institutional theories attempt to explicate institutional frameworks from the micro, mezzo, and macro level and how social innovations are critical in emerging markets (van Wijk et al., 2019; Howaldt et al., 2015).

The institutional voids in the manufacturing industry in Uganda can be classified under economic and political, and regulatory voids, such as poor infrastructure, poor value chain configuration

leading to over-reliance on imported raw materials or inputs, delays at the border, resulting in long lead times, property rights and low-quality products from manufacturing firms. In addition, the high-interest rates, inadequate institutions to enforce rules, lack of coordination between informal and formal institutions, high electricity prices, and high levels of corruption, among others (Garrone et al., 2019; Wu & Jia, 2018).

1.6 Emerging Research Gap

A limited number of studies have examined innovations in the supply chain as a strategy to manage the impact of institutional voids in emerging markets (Cantwell et al., 2010, Arlbjorn, de Has & Munksgaard, 2011; Turker & Vural, 2017). Moreover, most scholarships on institutional voids in emerging markets have not examined supply chain innovation as a solution to institutional voids, and it needs more context in sub-Saharan African countries such as Uganda. For example, Barbour & Luiz (2019) examined institutional voids in the service sector, looking at the Uber example.

Besides, more must be done to close the gap in literature debating the role of supply chain innovation and firm strategy in managing the impact of institution voids in emerging. Also, fragmented scholarship exists between institutional voids and supply chain innovation, impacting value chain creation, supply chain performance, and manufacturing value chain performance in emerging markets.

This research responded to a call by Acquah et al. (2013), Nkomo et al. (2015), and Zoogah et al. (2015) to create high-impact research from Sub Sharan Africa and contribute towards international business and management research and lessen this research gap. Furthermore, supply chain innovation must be diffused in emerging markets to enhance the supply chain performance and overall manufacturing value chain performance (Agnihotri, 2015; Beamon, 1999). Besides the above, there is a need to document specific successful frugal innovation stories from emerging

markets, albeit institutional voids in these markets and how supply chain innovation and strategy can alleviate institutional voids in emerging markets (Agarwal et al, 2020; Chu et al., 2019; Moreira et al., 2018).

In addition, this research directly responds to scholars reiterating the need to build a new line of inquiry regarding supply chain innovations in emerging markets to manage institutional voids' impact (Min et al., 2019). Additionally, emerging market scholars can close the gap and generate knowledge in and around supply chain innovation to manage institutional voids and enhance competition (Kwak et al., 2019).

There are several avenues to deploy supply chain innovations in the emerging market, such as strategic sourcing, logistics, distribution, inventory management, location decisions, innovation, research and development, outsourcing, collaboration, partnership, strategic alliance, horizontal and vertical transaction processing, business model, global supply chain governance, blockchains, and sustainability innovations to navigate institutional voids (Kshetri, 2017; Verhoeven et al., 2018; Gao et al., 2018).

1.7 Statement of the Problem

Several international business scholars have examined different strategies to manage institutional voids in emerging markets, ranging from business groups to reputation-building. However, some scholars have examined how supply chain innovation and firm strategy can ameliorate institutional voids in emerging markets. Supply chain innovation can create value in the manufacturing value chain in Uganda and address social problems such as poverty, unemployment, climate change, and economic growth and development while improving firm performance simultaneously (Ampaire et al, 2017).

This research matters because institutional voids in emerging is a serious bottleneck to international business and economic growth in developing economies. supply chains are significant in the economy. The examination of extant literature shows a clear research gap in this area, and scholars have called for increased research to address these gaps (Nkomo et al, 2015).

Moreover, manufacturing firms in Uganda face numerous institutional voids in the supply chain infrastructure, capital, labour, interest rates, property rights, regulatory voids, information asymmetry, contractual voids, climate change, and others. Such institutional voids must be eliminated to build a strong economy and spur development (Agarwal et al, 2020; Ciftci et al., 2019; Kjaer et al., 2021; Khanna & Palepu, 2006; North, 1990; Williamson, 1985).

1.8 Rationale and Significance of the Study

This research is significant because it fills a knowledge gap and makes a theoretical contribution and practical knowledge to emerging market literature in the context of institutional voids. To gain insight and better understand the supply chain innovations' role in mitigating institutional voids' impact in the manufacturing sector.

Given the importance of supply chains and supply chain innovations in the emerging market supply chain, this study is significant in filling a knowledge gap/void in the supply chain innovations and firm strategy as an instrument to manage institutional voids. The study also makes a theoretical contribution to institutional theory.

1.9 Research Assumptions

This study assumes that Uganda can be categorised as an emerging market based on the characteristics that define emerging markets. In addition, the research makes critical assumptions that the institutional settings in Uganda are weak and deficient in supporting international business,

and the need to build a robust institutional framework to address these political, economic, and legal frameworks are necessary.

Furthermore, the assumptions that institutional voids in emerging markets are ubiquitous can be interpreted in context because not all institutions in emerging markets are the same but differ in context and space (Mair et al., 2007). Moreover, depending on the stage, development, and democracy, institutional void severity differs according to the institutional arrangement across emerging markets (Kingsley & Graham, 2017).

1.10 Research Contribution to Theory & Practice

African emerging markets are under-researched (Subramaniam et al, 2014, Khayes & Haas, 2016, & Adeleye et al., 2015). The scholarship contributes by adding to a new stream of research on emerging markets outside of the Asian continent. There is a call for the supply chain to grow as a legitimate academic discipline (Touboulic et al, 2015); however, this cannot be done without theorization in supply chain management research.

Exogenous changes are happening in emerging markets that require new approaches to solving pressing societal problems such as global warming and climate change which unfortunately sometimes stems from unregulated supply chains often seen in emerging markets (Chirambo, 2020). The study contributes to developing a comprehensive supply chain innovation model that emphasizes environmental supply chain innovation practices specific to emerging markets, such as Uganda, to address unethical environmental practices in the supply chain due to weak enforcement of laws and regulations resulting from institutional voids (Chew et al, 2021).

Also, the study develops a testable research proposition based on critical concepts of institutions theory, regulative, normative, and cognitive factors to examine supply chain innovation in emerging markets from a mixed-method study conducted in manufacturing firms in Uganda.

This research provides insights into supply chain innovations and firm strategy in emerging markets and opens a potential new avenue of research inquiry. Besides, the study expands the boundary conditions of supply chain innovation and institutional voids in emerging markets conceptualized from the supply chain as a unit of analysis (Wieland et al, 2016).

Furthermore, the research builds upon previous scholarship in emerging markets utilizing institution theory as a theoretical lens. It develops a novel framework for understanding the relationships between institutional voids, supply chain innovation, supply chain performance, and firm performance (Adnan et al, 2018). Lastly, the study offers propositions for future research into institutional voids and supply chain innovations which has implications for both research, policy, and management practice.

1.11 Structure of the Thesis

The macrostructure of the study includes seven standalone chapters constituted as follows: Chapter one is the introduction; chapter two presents a review of literature using institutional theory as the dominant theoretical framework; chapter three constitutes the research methodology; chapter four presents the empirical results for the quantitative methods; chapter five presents the qualitative results while chapter six provides the discussion and chapter seven proffers conclusion to the study.

CHAPTER TWO: LITERATURE REVIEW

“Learning is no child’s play; we cannot learn without pain.” — Aristotle

2.1 Theoretical & Conceptual Framework

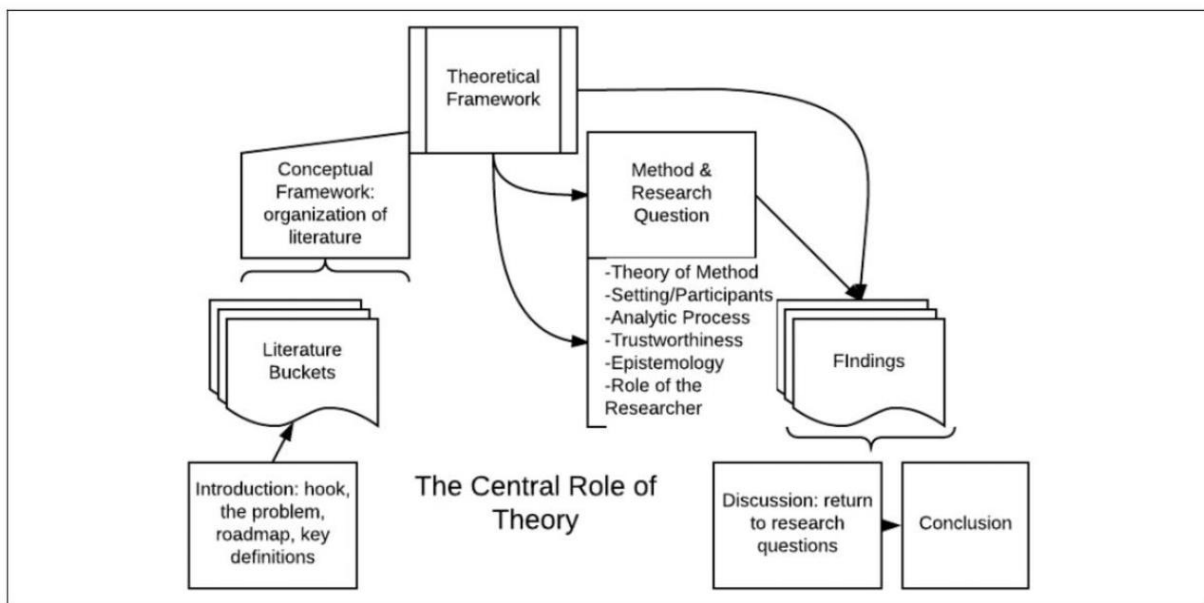
Theories matters because it is applied in explaining and predicting a phenomenon (Imelda, 2014) through providing a relationship between key variables and concepts under investigation. Theories also show key relationships and propositions between concepts and definitions (Allen et al, 2022). According to Halvorson (2015) asserted that scientific theory makes attempts to interpret what theory is, whereas Wacker (1998) asserts that good theory-building must define theory and its constituent parts such as variables, the domain of knowledge relationships, and predictions. The four main components of theory alluded to by scholars include the (1) definition of the terms of variables of the theory in question, (2) the domain of the theory or the field, (3) the relationships between the variables of construct that underpins the theory and (4) the specific prediction that theory makes.

Moreover, Choi & Wacker (2011) noted the following characteristics of a good theory: uniqueness, generalisability, fecundity, parsimony, internal consistencies, empirical riskiness, and abstraction. The theoretical framework utilised in this research passes the above benchmark. Institutional theory has gained acceptance by scholars and has been widely used to examine new phenomena in emerging markets such as institutional voids.

The connection between theory and practice has, however, been elusive between scholars. Theories are supposed to be tested by practitioners who, in turn, are supposed to offer inputs leading to the refinements of theories to mirror real business problems (Ojule, & Sogules, 2020). What is a theoretical concept? The question is fundamental because to contemplate while developing any theoretical framework given concepts necessary as connectivity for every

theoretical framework used in research. Collins and Stockton (2018) asserted that the theoretical framework is a glue that holds the research together. It describes the current body of knowledge and how scholars have used the concepts in their research and study the phenomenon. The epistemological, ontology, theoretical lens, methodically, and analytic approach form part of the theoretical framework.

Figure 2.1: Qualitative Process to Theory Building



Source: Collins & Stockton (2018).

Grant and Osanloo (2014) stated that a clear theoretical framework is pivotal to offer structure and vision of the study to act as a blueprint for executing the research strategy. An excellent theoretical and conceptual framework must include a metaphysical and operational model in its design and formulation (Agrawal et al, 2020). Furthermore, a recognized theory must stipulate context for the result of the phenomenon events conducted in the research. Finally, the data collection and analysis complemented the theoretical and conceptual framework presented herein.

According to Kivunja (2018), a theoretical framework is a range of middle theories developed by experts in the field which scholars can apply to analyze and interpret research findings. The same scholar reiterates that a theoretical framework is a group of theories or propositions experts have explained in the field. There is a need to know the body of knowledge and critical theories used in research and the domain where these scholars apply these theories adequately. These experts are presented in this chapter.

There has been confusion among scholars about the difference between the theoretical and conceptual frameworks. As explicated above, theoretical frameworks examine relevant theories or theories used to explain a phenomenon. In contrast, as the names suggest, a conceptual framework comprises a collection of theoretical concepts connected using a diagram to present an analytical model or framework (Imelda, 2014, Sultana & Raj, 2014).

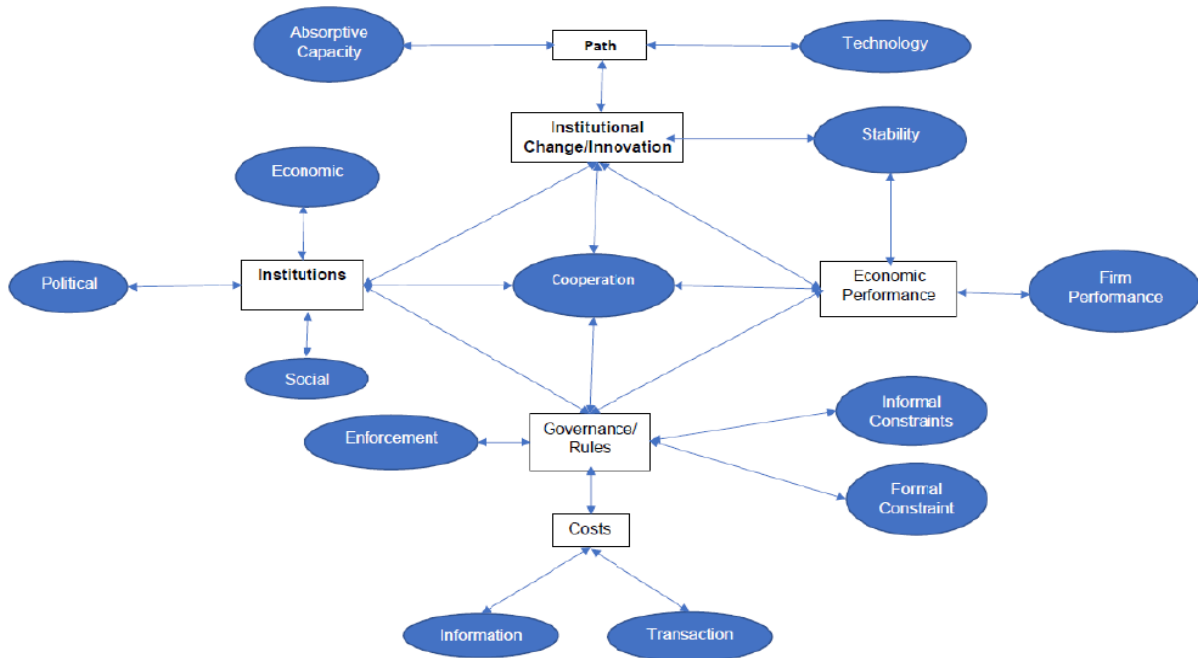
The conceptual framework connects key concepts to offer a diagrammatic view of events to provide a mental framework of the relationships between variables under investigation. The conceptual model was developed with the theory in mind and provided the connectivity required to understand the omnipresent nature of institutional voids in emerging markets.

As noted above, a theoretical framework is what leading scholars have expounded about the phenomena. In contrast, a conceptual framework contains ideas about the concepts, logical mapping of variables about all the essential characteristics and associations between variables, structure, plans and practices, and implementation of the research project (Kivunja, 2018).

In essence, conceptual framework relates to the process of developing research themes, synthesis of prior studies to find research gaps and problems, articulation of the research problem, selection of theories to apply, methodology and methods to study the problem, development of instruments,

data analysis, reporting of results, the building of theories, conclusion, and recommendation from the study (Jozkowski, 2016).

Figure 2.2: Theoretical Framework



Source: Author diagram based on North's account of Institutions Theory

Figure 2.2 explains the theoretical concepts from Institutional theory, where the key concepts are Institutions, governance or rules, economic performance, and institutional change or innovations. The central problem in this theory is cooperation, which moderates the relationships between the different concepts (North, 1990; Adomako et al, 2021).

The critical significance for applying the theoretical and conceptual model in research was to present the evidence in academic standards and procedure. It also clarifies why the study was relevant and how the research anticipates filling the gaps in the literature. Gabriel (2008) posits that the chief purpose of theories is to explain, predict, and understand the phenomena under study. Theories are necessary too in positioning scholars to challenge existing knowledge. The theoretical framework is a structure, rafter, or scaffold required to hold or support the theories and their

primary goal is to introduce and describe the theories under consideration concerning the research problem.

The theoretical framework must apply logic to make sense and consist of concepts, definitions, literature related to the subject matter under investigation. The theoretical framework used in this thesis resulted from an extensive literature review on institutional voids in emerging markets. This theoretical framework demonstrates an understanding and concepts of the critical theory (Institutional Theory) relevant to the present investigation. The institutional theory was selected because of its relevance, ease of application, and explanatory power in highlighting the institutional challenges in emerging markets (North, 1990; Gill & Dolan 2015).

The rationale for the theoretical framework was to augment the research in four significant areas; enable the audience to evaluate the theoretical assumptions presented, connect the research to the existing body of knowledge regarding institutional voids, firm strategy, firm performance, and supply chain innovations in emerging markets. Enable the researcher to address why and how firm strategy and supply chain innovations can ameliorate institutional void in emerging markets. Identify critical variables in the study and create a boundary condition making it easy to generalize the findings.

The theoretical framework chosen for this study has value in explaining the meaning, nature, and challenges of institutional voids in emerging markets. Gaining insights is imperative in highlighting the problems firms in emerging markets face while dealing with institutional voids, both informal and formal economy (Williams & Vorley, 2015). The process of developing the theoretical framework included but was not limited to examining the research topic, brainstorming to identify key concepts, variables, assumptions, and reviewing the relevant extant literature in the

subject area (Saunders et al., 2009). It is listing and grouping the constructs into dependent and independent variables.

A well thought theoretical framework is vital in creating a boundary condition limiting the amount of data collected, focusing on specific variables critical to the study. Also, analyzing and interpreting the results to build new knowledge through a critical validation or challenging the current knowledge makes a significant contribution to knowledge (Makadok et al., 2018).

Institutional theory is the theoretical underpinning of this research to answer the overarching research question of why and how firm strategy and supply chain innovations alleviate institutional voids in emerging markets. This study labors to validate the use of institutional theory in amplification the phenomena known as institutional voids in emerging markets and how to alleviate them using supply chain innovation and firm strategy in manufacturing firms in Uganda (Williamson, 1975 and 1985; North, 1990).

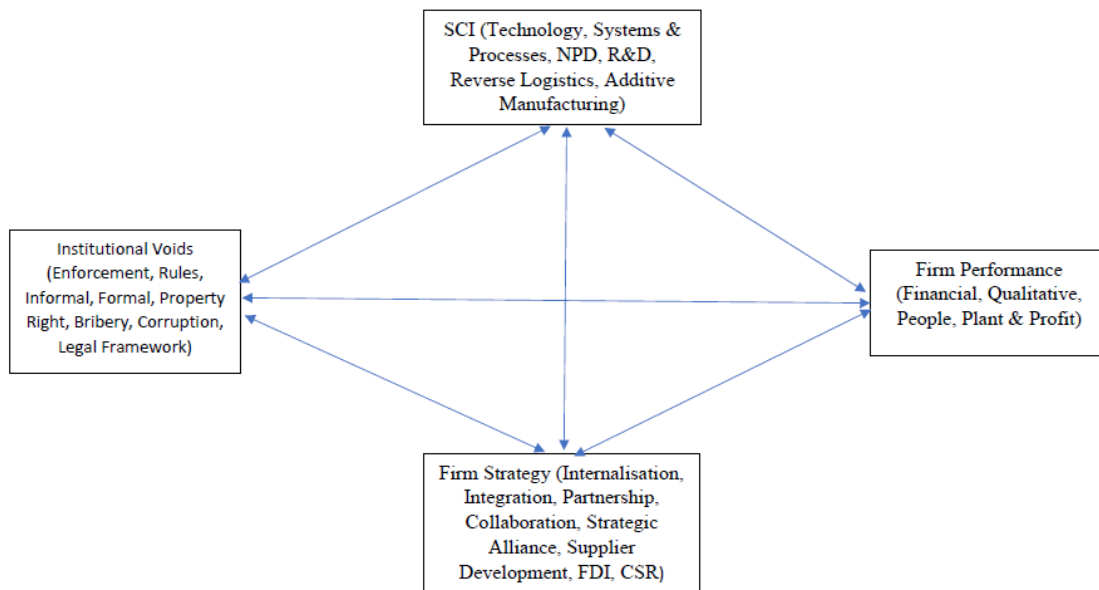
2.2 Theoretical Application in Institutional Voids & Supply Chain Innovation

The theory was applied to the current study to explain how Institutional voids increase opportunism in supply chains (Yang et al., 2018). Also, Institutional voids increase information & transaction costs (Doh et al., 2017). Governance structures must be used to regulate supply chain transactions to reduce exorbitant cost (Yadlapalli et al., 2018; Gardner et al., 2019). Furthermore, supply chain actors must play according to the "rules of the games" (North, 1990). Besides, Institutional change/innovations are required to ameliorate institutional voids (Colovic & Schruoffeneger, 2021). Also, the Institutional framework shapes the direction of knowledge, skills, and absorptive capacity in the value chain (Raei et al., 2019; Roldan Bravo et al., 2020). Moreover, the ongoing interactions between players, knowledge & capital, and institutional frameworks lead to institutional changes/innovations in the supply chain & transformation (Wieldand, 2021).

Besides, institutional efficacies impact firm performance because they regulated the cost of exchange and production necessary for-profit maximization (North,1990 & Williamson 1985). That technology is a crucial driver of Institutional change/innovations (Manuel Maqueira, 2019 and Fatorachain & Kazemi, 2021). A robust Institutional framework reduces uncertainty/shocks and creates stable environment (though not efficient) supply chains (North, 1990; Shubin et al., 2018). The theoretical problem of Institutional theory is cooperation which is essential for disrupting institutional voids (North, 1990; Adomako et al., 2020).

The weak institutional governance leads to information asymmetry and enforcement problems in supply chains (Brenes et al., 2019). Moreover, in the pursuit of profit maximization and wealth creation, firms adapt these structures to navigate barriers to success (North 1990; Fynes et al., 2015).

Figure 2.3: Conceptual Framework



Source: Author's Conceptualisation Based on Theory

Figure 2.3 presents the modified version of North's Institutional theory in which four essential core concepts formed part of the study. Institutional voids and their impact, firm strategy, supply chain innovations, and firm performance are the main variables examined in this study and the chosen unit of analysis.

IT aided the researcher in developing the conceptual framework for understanding, analyzing, and designing research tools to investigate the research problem. According to Seidel and Watson (2020), theories are critical in developing a framework to enable new research data interpreted and stored for future use. Identify new problems with no known past answers, identify and define research problems. Also, prescribe solutions to problems, identify critical new issues, propose key research questions, collect information to understand the current phenomena such as institutional voids in emerging markets (Barbour & Luiz, 2019).

2.3 Literature Review Methodology & Research Question

The literature review is limited to addressing knowledge voids, methodological and theoretical conflicts about institutional voids, and supply chain innovations in emerging markets (Ahen, & Amankwah-Amoah, 2018). The literature review is critical in identifying research gaps in academic discourse and should be professionally researched and present chronologically. There are several methods used to identify research gaps in both qualitative and quantitative scholarships. Most scholars have used grounded theory to identify research gaps (El Hussein et al., 2017).

Accruing to Seuring and Müller (2008), the methodology used in research includes theoretical, survey, case study, modeling, and literature reviews. A lack of systematic assessment of academic papers discussing supply chain innovation and a firm's strategy as a response to institutional voids in emerging markets points to a research gap that ought to be filled (Gao, 2017).

Figure 2.4: PRISMA Literature Review Framework

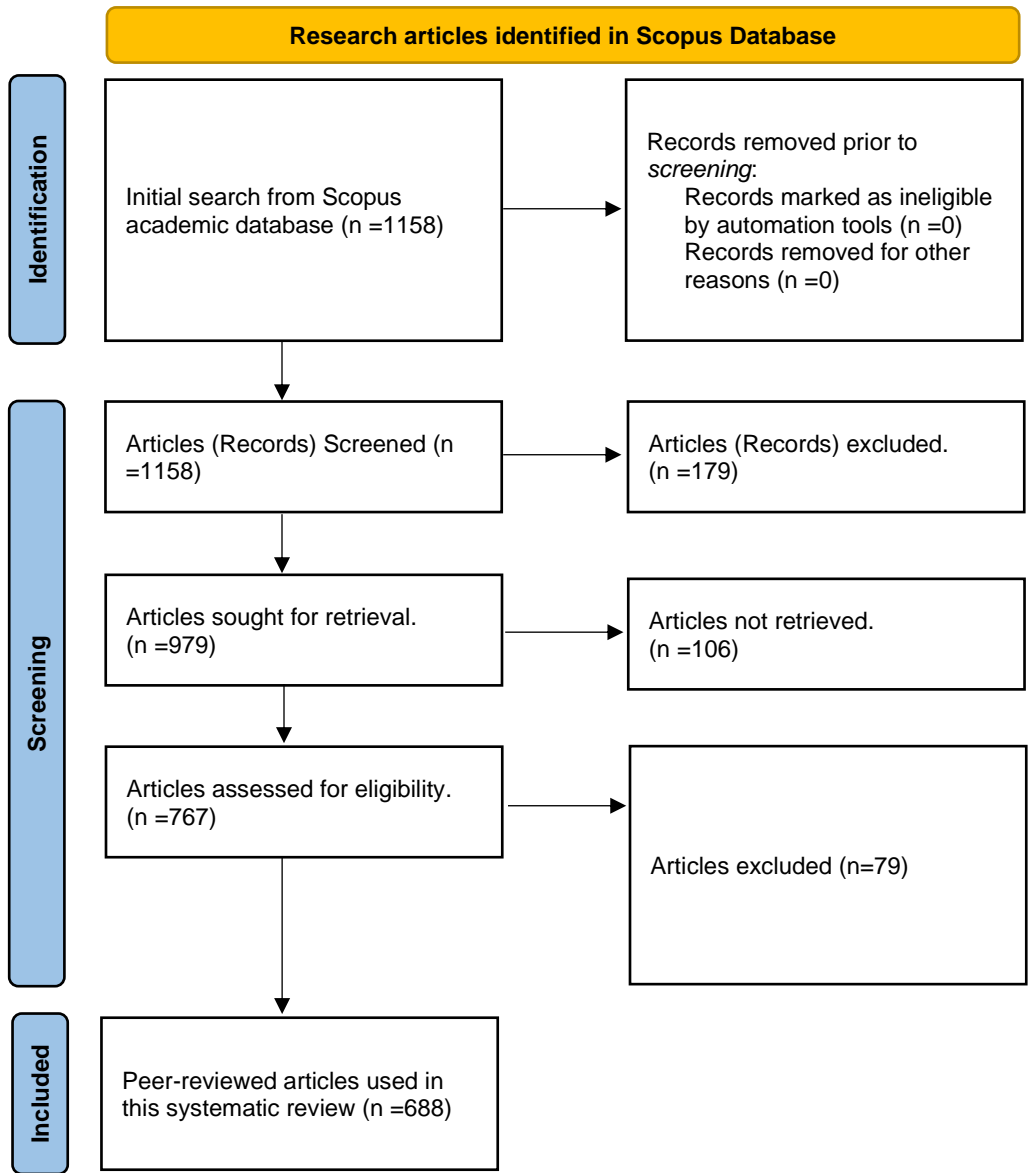


Figure 2.4 shows the PRISMA literature review framework. The initial hit in the database search using the strings “Institutional Voids AND Emerging Markets AND Supply Chain Innovation AND Supply Chain Strategy” resulted in an initial hit of 1158 articles. In the second phase, 179 articles were excluded before the second screening phase. In the third phase, 979 formed part of the articles retrieved, whereas 106 articles were not extracted. Next, 767 articles were assessed for

eligibility. After applying the exclusion criteria stated in Appendix 10, 79 articles were excluded. Finally, 688 articles were reviewed. The abstract, keywords, and articles were created in a CVS file and uploaded to VOSviewer software to visualise critical themes and patterns in literature.

Table 2.1: Systematic Literature Review Protocol

Reviews	Descriptive	Motivations for the review
Purpose	Goal for the systematic review	Examine the current state of knowledge in international business related to how firms respond to institutional voids in emerging markets.
Strategy	The search approached used to gather relevant literature in the field of study	Keywords such as institutional voids, emerging markets, supply chain innovations, and supply chain strategy were applied to extract relevant peer-reviewed articles in the Scopus database.
Strings	The combinations of keywords used to draw relevant articles	The search string was “Institutional Voids AND Emerging Markets AND Supply Chain Innovations AND Supply Chain Strategy.”
Database	Premium scholarly database used in the field of management, strategy, international business etc.	Scopus and web of science academic databases were used for the search.
Article screening and inclusion criteria	Comprehensive approach used to screen the relevant articles extracted	The papers in management, business, and economics were peer-reviewed articles, final articles, empirical, literature reviews, conceptual papers, etc., between 2010-2023.
Exclusion criteria	Approaches to limit the number of papers review	Books, book chapters, editorials, short surveys, and notes were excluded from this review.

Table 2.1 explains the systematic literature review protocol, highlighting the purpose of the review, the search strategy, the search strings used in the review, the database used, screening procedures, and the selection of articles to include in the review. Refer to Appendix 10 for search terms, strings, and exclusion criteria used.

The keywords in the abstract were used identify literature for inclusion in the systematic literature. The coding process involved both open coding and axial coding using NVivo 12 and VOS viewer software. The keywords in the abstracts and titles were used to develop open coding is the analytical process of generating higher abstraction level type categories from a set of concepts or variables." (Adu, 2020), while axial coding is the act mapping relation between of categories of variables to each other (Corbin & Strauss, 2008). Mayring (2015, p.23) proposed a four-stage model, including "material collection, descriptive analysis, category selection, and material evaluation" for case study research. The literature methodology and search deployed the approaches adopted by scholars such as Mukherjee et al. (2023), Dekel-Dachs et al. (2021) and Bothello et al. (2019) to develop and answer research questions.

The literature review answer three primary research questions

RQ1: What is the dominant theoretical lens used to study institutional voids in emerging markets?

RQ2: What is the key research methodology in international business research?

RQ3: How do firms fill institutional voids in emerging markets?

2.3.1 Academic Database Search Results

The methodology used in the literature search was to identify key search words, search criteria, selection and scope, databases to use, and the timeframe and the search strategy was robust to gather the required data to answer the research question posed above (Snyder, 2019).

The leading database used during the literature search included Web of Science and Scopus and these were supplemented by Google Scholar, Ebsco Host, Springer, Elsevier, Emerald, Wiley, Taylor & Francis. A total of 688 peer-reviewed journals were used in the construction of this literature review mainly from the Web of Science database. The papers reviewed included literature reviews, systematic reviews, theoretical papers, and case studies. The key search terms used were “Institutional Voids AND Emerging Markets AND Supply Chain Innovations AND Supply Chain Strategy.”

In the first phase of the analysis, the planning was done, and research questions for the study were developed. Identifying the research and sources of dataset required to answer the research questions in the premium academic database, mainly Scopus and Web of Science. A selection criterion was developed, the database was selected, the search strategy and approach were developed, and an article extraction strategy was developed to examine the abstracts containing relevant keywords.

In the second stage of the review, the above criteria were applied to the selected database. The search was conducted on 11/5/2023 at 10 a.m. The initial papers extracted were 1158 articles, after which exclusion criteria were utilized to reduce the papers to 688. In the third phase, the identified papers were all selected and analyzed using VOS viewer software. In total, 3002 keywords were analyzed, of which 159 met the analysis criteria. The analysis was produced using 688 articles, categorizing the results into four main clusters. The first cluster had 53 keywords and was represented in the green area of the network visualization word cloud. The second cluster comprised 44 keywords, and these were in the yellow part of the graph. The third cluster included 32 keywords and was represented by the red segment of the graph, and finally, the fourth cluster had 30 keywords, shown in the blue component of the word cloud shown in figure 2.11 below.

Figure 2.5: Peer Reviewed Articles 2010-2023

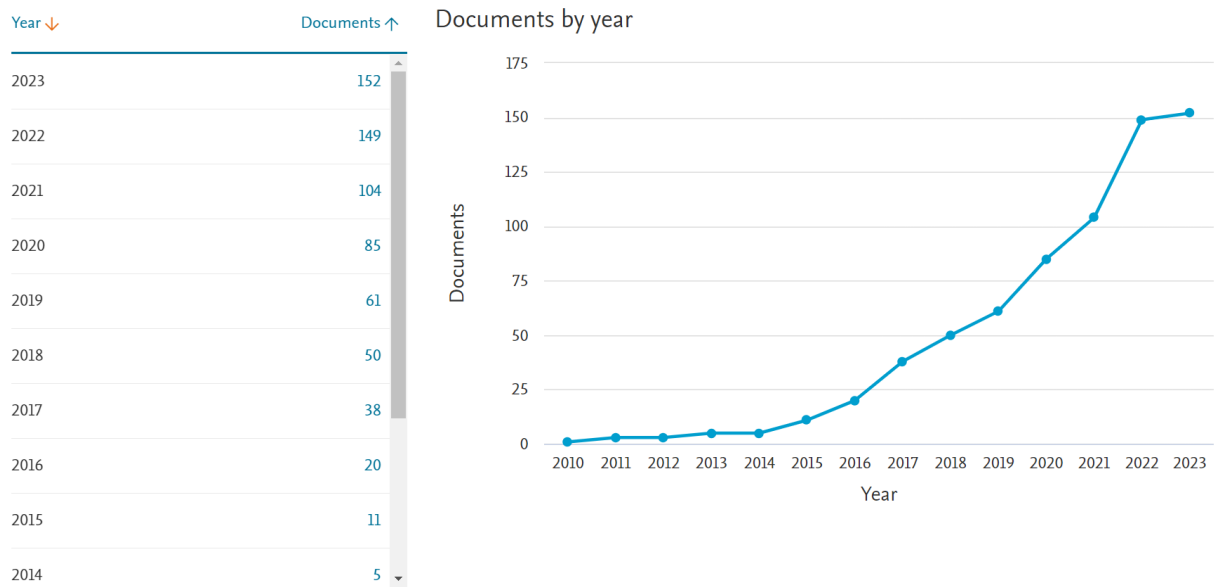


Figure 2.5 shows that institutional voids are still a nascent area of research. Nevertheless, there has been a significant development since 2017, where the community has seen an exponential increase in published work. In 2023, there were 153 peer-reviewed articles compared to just five papers in 2014.

Figure 2.6: Source of Documents Reviewed

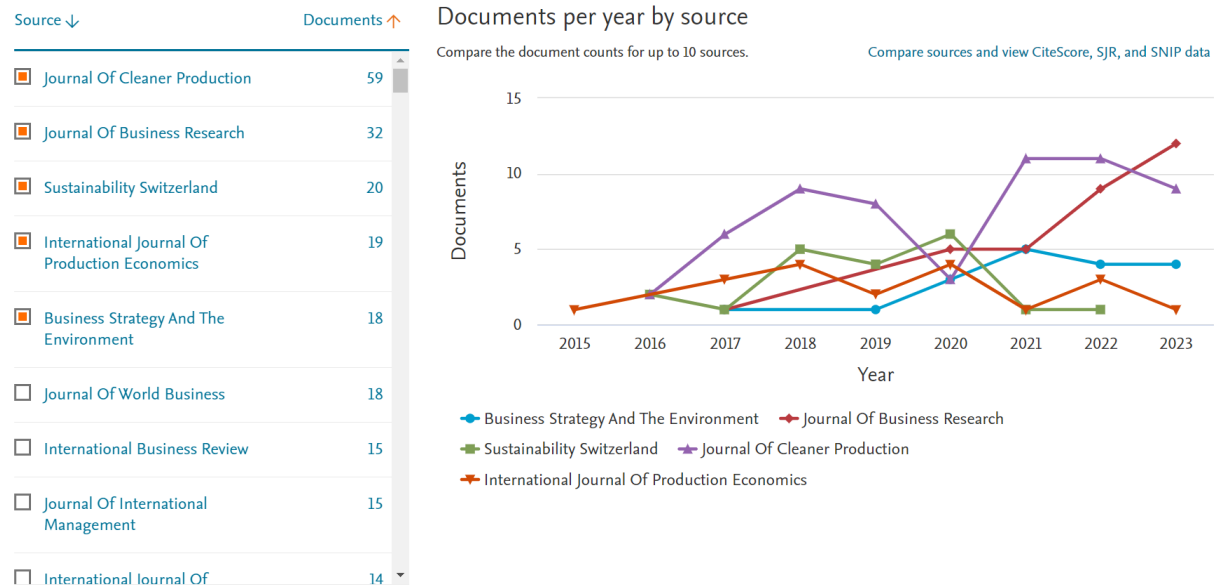


Figure 2.6 shows publication trends in top-tier journals between 2015 and 2023. Business Strategy and the Environment, Journal of Business Research, sustainability Switzerland, Journal of Cleaner Production and International Journal of Production are some of the top journals housing the literature published in this study area.

Figure 2.7: Authors in the Field of Scholarship

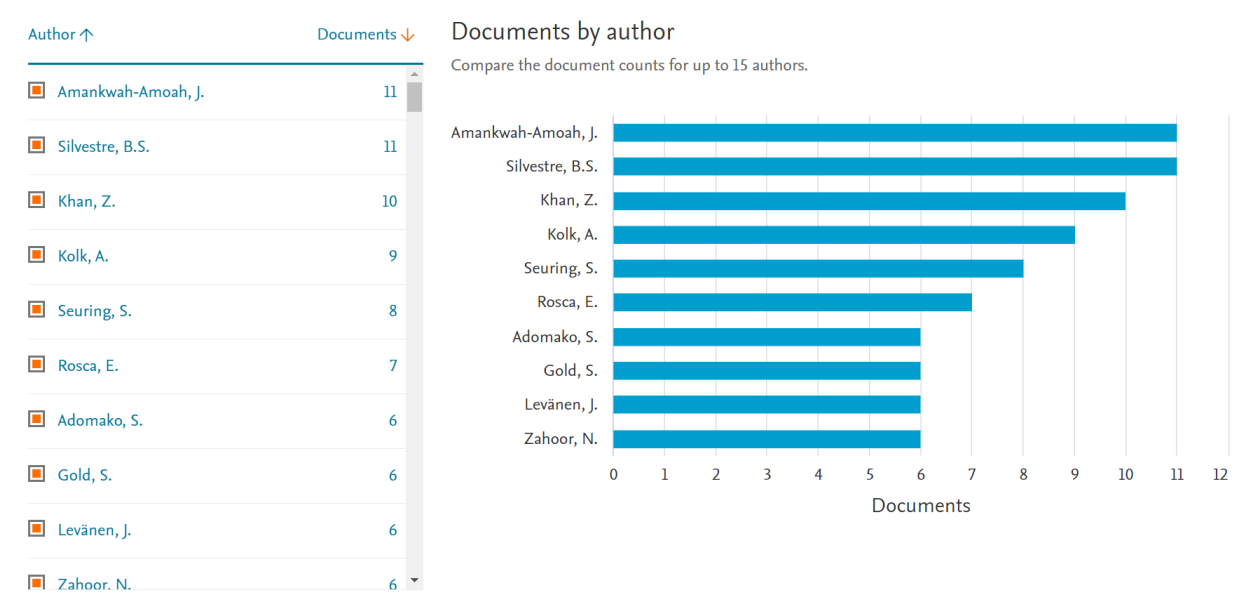


Figure 2.7 shows that leading scholars in the field include Amankwah-Amoah and Silvester, who published 11 each between 2010 and 2023, Khan 10 papers, Kolk 9, Securing 8, and Rosca 7 papers. While Adomako, Gold, Levanen and Zahoor published six papers each during the period in review.

Figure 2.8: Contribution by territory in the scholarship

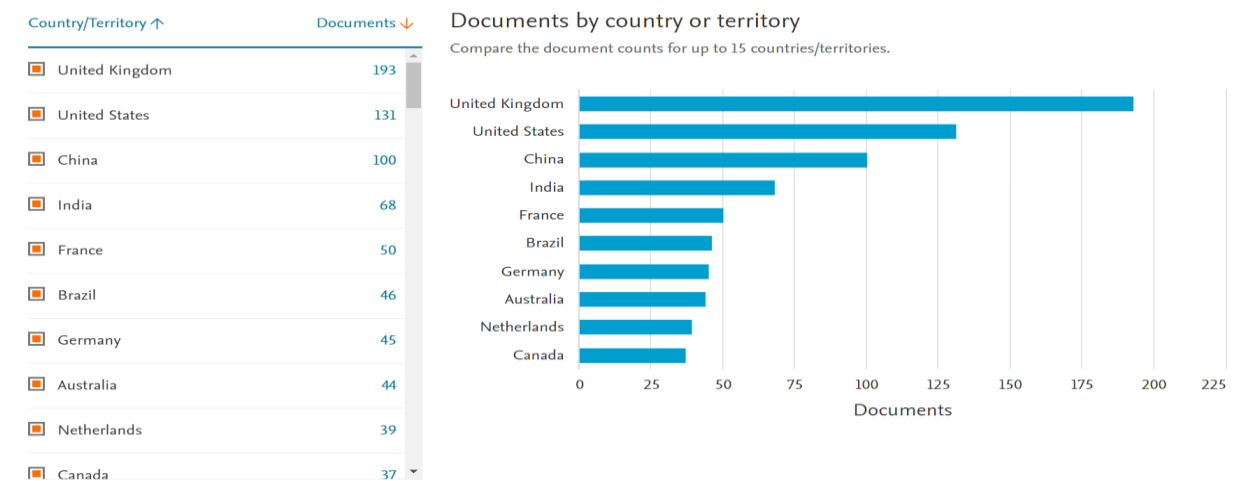


Figure 2.8 shows the top countries where scholarship on institutional voids is prevalent. The UK published (193 papers), the United States published (131 papers), China published (100 papers), India (68 papers), France (50 papers), Brazil (46 papers), Germany (45 papers), Australia (44 papers), the Netherlands (39 papers), and Canada (37 papers). Overall, few papers are being published in sub-Saharan Africa. The global north dominates the scholarship in the field and there is a potential contribution to fill this gap.

Figure 2.9: Types of papers reviewed.

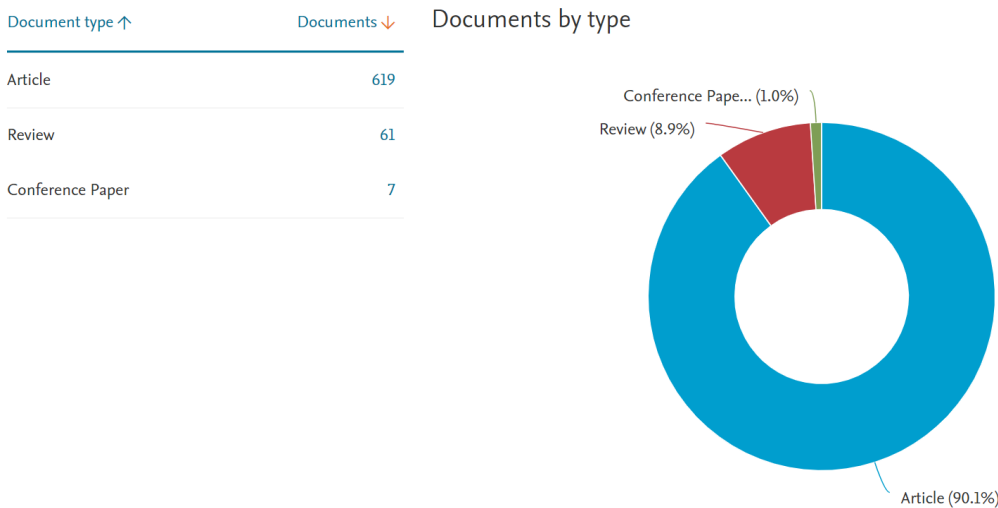


Figure 2.9 shows that papers were reviewed by type, and the results indicate that (90.1%) of the papers were peer-reviewed articles published in reputable academic journals, (8.9%) were review papers, and (1.0%), were conference papers.

Figure 2.10: Review papers by subject

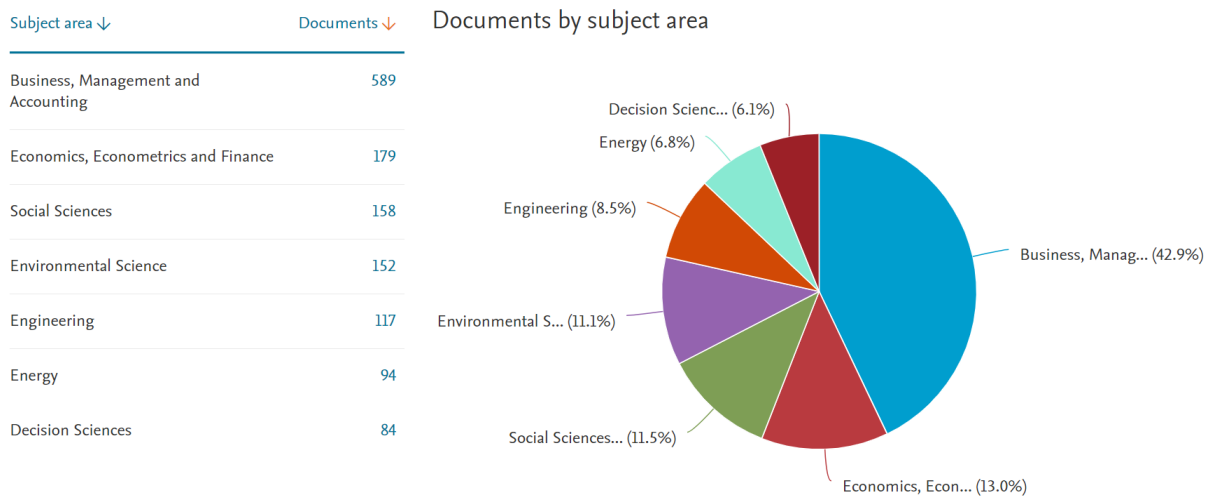


Figure 2.10 indicate that of the papers that were reviewed, the key subject areas in the scholarship on institutional voids in emerging markets include business management (42.9%), economics (13.0%), social science 11.5%, environmental science (11.1%), engineering (8.5%), energy (6.8%) and decision science (6.1%).

Figure 2.11: Key themes in literature reviewed.

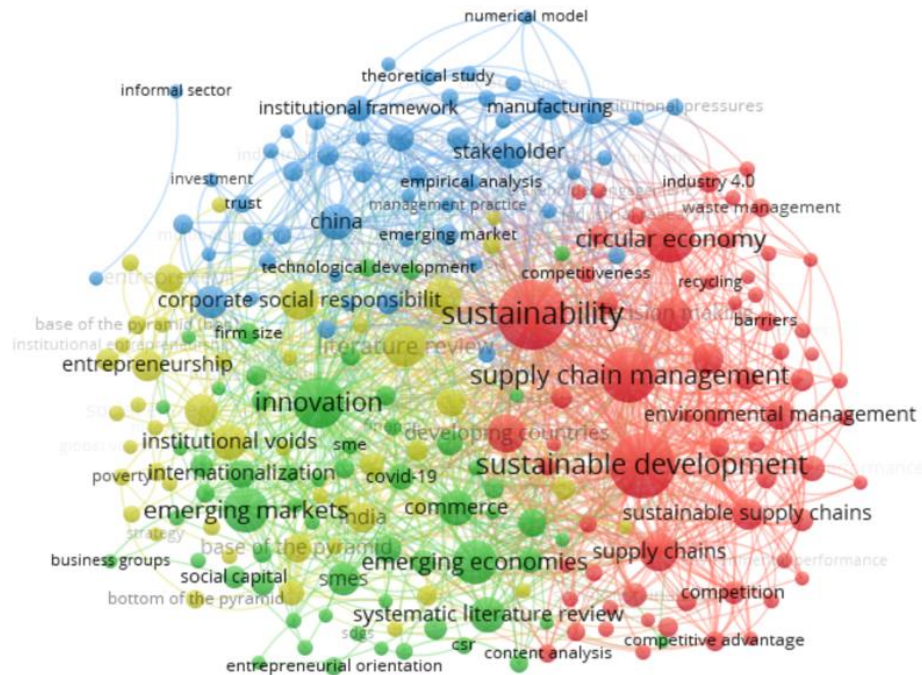


Figure 2.11 displays the thematic analysis emerging from the literature. Overall, of the 688 papers reviewed, the results show that the literature is clustered in four main categories. The green areas cover the first cluster and contain 53 keywords; the second cluster includes the red areas, comprising 44 keywords. The yellow portion covers the third cluster and contains 32 keywords, and lastly, the blue area contains 30 keywords.

2.3.2 Scholarly Gaps in Institutional Voids Literature

The literature was synthesized, the gaps were identified and presented using a framework developed by (Buller-Bloch & Kranz, 2015). This review demonstrates the breadth and depth of the current body of knowledge. It summarizes, analyzes, and concludes the present research gaps and fills these gaps using the current scholarships. There are several types of research gaps that scholars have elucidated. It includes “methodological conflict, contradictory evidence, knowledge void, action-knowledge conflict, and theory application voids” (Buller-Bloch & Kranz, 2015, p.8).

Besides, Mile's (2017; p.11) framework presented seven research gaps from prior studies, which included “evidence, knowledge, practical, empirical, population, methodological, and theoretical gaps.” This research demonstrates originality in concept and execution (Gill & Dolan, 2015).

There are two approaches to presenting research gaps during literature reviews. According to (Buller-Bloch & Kranz, 2015), scholars can use a sequential and parallel approach to presenting research gaps. In the sequential approach, the synthesis of the literature is logically presented first. Then the identified gaps are presented later, while in the parallel approach, the research gaps identified are highlighted in the synthesis or discussion of literature. In this literature review, both approaches triangulate the findings and clarify the reader (Adu, 2020).

The literature review framework employed herein included a four-stage approach; localization, characterization, verification, and presentation (Buller-Bloch & Kranz, 2015). In summary, the localization phase entailed identifying or locating research gaps. Characterization included characterizing research gaps and providing reasons why these gaps exist, verifying the gaps identified, and finally, presenting these gaps. There are significant research gaps in the antecedents of supply chain innovations, more so in emerging economies where limited studies have been undertaken thus far to provide empirical data about supply chain innovations in the region.

Research Gap One-Methods: The literature reviewed shows that a methodological gap exists in the current body of knowledge (Gao, 2017) in most studies in supply chain innovations. The case study has been dominant as a research methodology for sustainable supply chain innovations. There is a greater need to use other research methods to examine the problem and draw a relevant conclusion based on the available evidence. The other research gaps in the paper review showed that manufacturing is the dominant sector of analysis (Durach, et al, 2017).

Gap Two-Contexts: However, most of the literature points to manufacturing in the advanced economies with little data on emerging markets. More so, the data on emerging markets is concentrated on the BRICS countries, and little work has been done in Sub-Saharan Africa emerging markets. The research gap on manufacturing in Sub-Saharan African economies requires urgent attention, and this study attempts to fill this gap. Also, in terms of the population gap, the literature is abundant with examples from Europe and Asian countries (Limaj et al, 2019).

Gap Three-Definition and Operationalisation of Constructs: There are research gaps in the thematic view of supply chain innovations. Several themes to innovation but very few of the papers review provided an integrative view of these themes (Wieland et al., 2016). Moreover, terminology development is thereof a significant gap in the literature. According to the literature review, the question of supply chain innovations is still debatable and fragmented. Through open coding, the literature analysis was able to classify key themes and variables connected to supply chain innovations. However, given the nature of the literature, there is a significantly low number of studies discoursing on emerging markets compared to the developed markets.

The research gap in the review points that only a few types of innovation have been discussed in the literature, namely, processes innovation, product innovations, market innovations, resources allocations innovations, technology innovations (Gao, 2017; Yeşil, & Doğan, 2019). However, other innovations are needed in the supply chains, such as green innovations, supplier innovations, customer innovations, and logistics innovations (Albort-Morant et al, 2018). The manufacturing supply chain requires an array of innovations upstream and downstream of the supply chain to deliver the required value to the customers (Zheng et al, 2021).

Gap Four-Unit of Analysis: There was a gap identified around the supply chain as a unit of analysis is seen in the systematic review papers (Durach et al, 2017; Gao, 2017; Carter et al, 2019).

The whole integrated supply chain must be considered while debating supply chain innovations in emerging markets. *Supply chain innovation* is an intricate topic that requires the synthesis of the various bodies of knowledge in supply chain management. There is a clear gap in the concept of supply chain innovations. There is a need to broaden the concept of supply chain innovations to reduce the knowledge gap in this area. There is a lack of integration of the various concepts of supply chain innovation.

Although there was a discussion on the characterization of supply chain innovations in the literature, some critical aspects of supply chain innovations such as regulations and antecedents have been omitted. Gao (2017) identified five gaps that warrant further investigations (1) review of the literature showed a lack of integrated and complete definition of supply chain innovations and sustainable supply chain innovations. (2) Additionally, the literature highlights a lack of longitudinal studies since most studies used cross-sectional examining individual and binary relationships. (3) Furthermore, there is a lack of antecedents of supply chain innovations in emerging markets. (4) The additional gap in methodology regards the use of case study methodology examining individual and binary relationships. (5) The supply chain as a unit of analysis is vital in the analysis of supply chain innovations.

RQ1: Theoretical Lens in Emerging Market.

IB scholars in emerging markets used a variety of theoretical lenses to conduct research. The most dominant theories scholars have used include Institutional Theory, Transaction Cost Theory and Resource Based View, Agency theory, OLI theory and others (Liedong et al., 2020).

Chipp et al. (2019) show that institutional theory is still predominantly used to study institutional voids in emerging markets, while Bahoo et al. (2020) study on institutional voids such as corruption indicated that institutional theory offers an excellent theoretical framework to

understand the phenomenon. Marquis & Raynard (2015) shed light on using institutional theories and their application in emerging markets to highlight issues such as FDI, market-entry, and internationalization. Pereira et al. (2019) analyzed three decades of research in emerging markets. They found that the leading theories used to conduct research were institutional, RBV, organizational, and transaction cost theories.

Sahin & Mert (2022) reviewed the use of institutional theory in international business studies between 1990 and 2018 and found that the different strands of institutional theory, such as organizational institutionalism, neo-institutionalism, comparative institutionalism, institutionally based view to provide an understanding of emerging markets research. Dekel-Dachs et al. (2021) reviewed 63 studies and found that institutional theory was the dominant theoretical framework in researching institutional voids, accounting for 52%, while the network approach was 52% and RBV 19%. This research uses institutional theory to study institutional voids in emerging markets.

Table 2.2: Theoretical framework of the cited literature

Theory	No
Institutional	24
Stakeholder	11
RBV	7
Total	42

Table 2.2 shows that the theory applied in the papers in the literature review chiefly institutional theory (24 papers), stakeholder theory (11 papers), and RBV (7 papers). The table shows that there are inherent gaps in the literature because most of the papers reviewed did not use any theory to examine the problem. However, institutional theory continues to be a leading theoretical lens used to study the problems of institutional voids in emerging markets.

RQ2: Research Methodology in Emerging Markets

According to Eden & Neilson (2020; p.1), IB research methodology is complex because of international business research's multifaceted diversity and vitality. IB scholars have deployed "difference, distance, diversity and disparity" to overcome these methodological challenges. Due to these challenges, Aguinis et al. (2020) have identified measurement problems, sample and contextual deficiencies, limited research design and lack of evidence to support empirical work as some of the challenges of international business research.

Nielsen et al. (2020) conducted a review over fifty years; more than 1265 papers were published discussing research methodology in international business research, and 372 of the articles representing 30%, were published between 2010-2019. The standard research methodology includes quantitative archival, quantitative survey, qualitative and mixed methods. The bulk of the papers published used quantitative methods 86% (archival or survey), whereas 9% used qualitative methods, and only 5% used mixed methods. In addition, scholars have identified challenges in IB research, especially the decline of primary data, as most researchers use secondary data (Cerar et al., 2021).

In a systematic review paper by Dekel-Dachs et al. (2021), which reviewed 63 studies, the results showed that the study of institutional voids in emerging markets had focused primarily on quantitative 49%: qualitative 46%, conceptual 4.8%, mixed methods 0.0%. A further breakdown of the findings shows that the qualitative research, expert opinion represents 9.5%, case studies 36.5%, of which single case studies contributed 3.2%, multiple case studies 33.3%, comparative analysis 6.3%, and longitudinal design 1.6%. On the quantitative methodology, descriptive statistics was 9.5%, regression analysis 30.3%, structural equation modelling 14.3%, longitudinal design 4.8% and others 9.5% (Richter et al, 2016). The above study highlights a clear research gap

in mixed methods in international business research which this thesis attempts to contribute (Harrison et al, 2020; Aguinis, & Gabriel, 2021; García-Lillo et al, 2019).

Table 2.3: Methodology framework of literature reviewed

Methodology	No
Systematic literature view	37
Literature review	36
Survey	11
Conceptual framework	10
Structural equation modeling	9
Theoretical study	7
Regression analysis	7
Case study	7
Bibliometric analysis	7
Articles	7
Least square approximation	6
Content analysis	6
PLS-SEM	5
Metal analysis	5
Total	160

Table 2.3 shows that the methods used in the literature review were mainly systematic analysis (37 papers), literature review (36 papers), and surveys (11 papers). The table helps to highlight the research gaps as far as methodology is concerned and shows that mixed methods were not a popular research strategy. In addition, limited studies are using statistical analysis, such as structural equation modeling and regression analysis.

2.3.3 Institutional Voids Measurement

Four measurement levels have been deployed to study institutional voids in emerging markets. Firstly, IB scholars have used a governance construct that examines economic freedoms, political risk, economic and political stability, and bribery and corruption in emerging markets. The second approach has been the institutional quality construct looking primarily at property rights in emerging markets. Thirdly, researchers have used legal frameworks in transition economies to understand the impact of institutional voids in international business. The fourth approach has been using access to resources by firms in emerging markets (Meyer & Nguyen, 2005).

In addition, the measurement construct for institutional voids has been conceptualized using governance indicators linked to “the level of economic freedom, degree of political risk and stability, and level of corruption and bribery,” (Brouthers & Brouthers, 2003). Furthermore, the intellectual property protection or property rights such as intellectual property laws have been used as measure of institutional voids (Delios & Beamish, 1999). Also, other scholars have used legal and government indicators as a measure of institutional of voids in developing markets (Meyer et al., 2009). The measurement of IV in the developing countries, some studies have operationalised institutional voids through access to resource and openness (Meyer & Nguyen, 2005; Dieleman et al, 2022).

All four measurement categories are primarily informed by institutional (North, 1990; Scott, 1995) and focus more on formal institutions rather than informal institutions to measure institutional voids in emerging markets. Moreover, as noted by Doh et al. (2017:296) informal institutions are understudied and less measurement constructs are available to measure normative and cognitive institutions.

The literature on institutional voids has shifted from the form to functions of institutions, which is a more practical approach. Moreover, not all dimension of institutional voids has been captured by scholars, and there is a need for more contextualized approaches to institutional voids. Institutional quality must be considered while examining institutional voids and, most importantly, looking at voids as opportunities (Dieleman et al, 2022). Furthermore, Dieleman et al, (2022) developed eight theoretical constructs to examine institutional voids such as economic development, anthropology, law, political economy, function, process patterned and enabling.

2.4 Theoretical Antecedents

2.4.1 Theories and Rationale to the problem

In international business scholarship, several concepts to elucidate the influence of weak institutions on supply chain decision-makers in developing markets. This study utilizes “institutional theory” to analyze the problem (Coase, 1939, William 1975, North, 1990).

The synthesis of the current bodies of work has shown that most academic scholars have extensively used institutional theories and it has proved to be the most suitable theoretical lens to examine the present problem of institutional voids in the emerging markets how it impacts firm performance. IT offers an explanatory power and theoretical lens to understand how institutional voids influence economic performance compared to RBV, TCE, and GVC.

2.4.2 Institutional Theory Definitional Elements

According to North (1994, p.360), Institutions are formal and informal mechanism devices to regulate human behaviour and consist of formal restraints such as rules and laws, while informal constraints relate to norms and conventions. Institutions influence or shape how supply chain innovation can occur in emerging markets, and the setup of the supply chains determines the strategy to apply to disrupt institutional voids.

The study contributes to IT literature in emerging markets. The institutional theory offers a broader framework to analyze institutional voids and their effects on the supply chain and how supply chain innovation and firm strategy can ameliorate institutional voids and their effects. Scholars have used institutional theory to examine macro issues in institutional settings (North, 1990; DiMaggio, 1990; Scot, 2005).

Institutional voids are the macro-level problem and require a robust theory such as IT to deconstruct the problems. The scholarship is deemed atheoretical (Halldorsson et al., 2015; Tabaklar et al., 2015; Marić, & Opazo-Basáez, 2019). Supply chain actors in emerging markets can emancipate themselves by innovating alternative institutional arrangements to address institutional voids and their impact. It is imperative to examine what kind of institutional action results in supply chain innovation in emerging markets. There is a need to understand the relationship between institutions and actors that colonize them (DiMaggio, 1988; Scot, 2005).

According to North (1990, p.12), the focus on “institutional change is a transaction cost approach to institutions and a cognitive science approach to rational choice.” Supply chain actors make rational decisions. In North's 1991 studies examining economics and institutional changes, such as constraints, politics, social networks, rules, property laws, codes of conduct, informal and formal institutions (North, 1990; Mani et al., 2018).

Institutional logics are socially constructed to include practices, values, beliefs, and rules to guide actors' behavior to achieve the firm's goals (Thornton & Ocasio, 2015). Institutional structures are at the core of traditional institutional design and explain the similarity between firms (Lawrence & Suddaby, 2006).

DiMaggio and Powell (1983) identified one mechanism under which institutions change, which is through coercion. Homogenization can result in informal and formal pressures from external

sources and cultural expectations from the external environment (DiMaggio & Powell, 1983). The diffusion of institutional type is dependent on information flow, legitimacy, and social networks (Colicchia et al., 2019). This process tends to occur in supply chains due to institutional pressure and creates legitimacy in supply chains to deliver value to customers (Amankwah-Amoah et al, 2018b).

Besides, isomorphic institutional changes occur in supply chains when institutional models exist, driving changes that institutional entrepreneurs seek to adopt. These social entrepreneurial changes are imperative to the supply chain (Yawar & Kauppi, 2018). In emerging markets, firms adopted some form of isomorphic practices in their supply chain to address institutional voids, drive transformation and improve firm performance (Atogenzoya, 2020).

2.4.3 Institutional Theory in International Business Research

Several scholars have used international theory to analyse institutional voids in international business (Sahin & Mert, 2022). Moreover, different strands of the institutional theory are used to study institutional voids such as "neo institutionalism, new institutional economics, comparative capitalism and institution-based view" (Sahin & Mert, 2022, p, 1). Moreover, each strand of institutional theory offers a unique explanation of institutional voids, and the theory requires different measurements and constructs (Aguilera & Grøgaard, 2019).

The comparative capitalism strand in institutional theory provides IB scholars new avenues to explore unanswered research questions and develop new theories regarding institutional voids in emerging markets (Jackson & Deeg, 2008, 2019; Wood & Schnyder, 2021). Comparative capitalism applies socio-economic constellations such as educational, financial, and legal systems to examine institutional voids in emerging markets (Sahin & Mert, 2022).

The initial conceptualisation of institutional theory has two main strands: new institutional economics, which is commonly used among IB scholars (Coase, 1937 & North, 1990); (Aguilera & Grøgaard, 2019) and neo-institutionalism which views institutions from a sociological standpoint (DiMaggio & Powel, 1983; Scott, 2001, 2005 & Meyer, 2009).

A review of the strands of institutional voids showed that "neo-institutionalism is prevalent in literature, preceded by new institutional economics, comparative capitalism and institutional based view" (Alvesson & Spicer, 2019.p13). Moreover, the critical concepts in neo-institutional theory primary theoretical constructs commonly used by IB scholars in literature to study institutional voids in emerging markets include "legitimacy, normative, coercive and mimetic pressure, supranational distance factors, organisational fields and isomorphism."(Boxenbaum & Jonsson, 2017). The neo-institutional strand in the IB literature has been theorised under regulatory, normative, and cognitive institutions (Alvesson, & Spicer, 2019).

In addition, the institution-based view strand is yet another strand of institutional theory used by IB scholars to study institutional voids in emerging markets (Aguilera & Grøgaard, 2019; Meyer Peng, 2016), and this strand is a modified version of new institutional economics and neo-institutionalism (North, 1990 & DiMaggio & Powell, 1983).

The old institutional theory located within the sociology discipline, the modern-day discourse is debated mainly according to the variants explained by Scott (1987; Carvalho et al, 2017a), who identified seven multiple forms of institutional explanation on the structural influence that tried to answer three questions (I) types of institutional elements that need attention (ii) what influence, or casual approach identified and (iii) and what type of organizational structures are affected.

The second school of thought in institutional theory, termed the new Institutional Theory, was advanced by Coase, Williamson, Ostrom, and North. These scholars proposed a new hybrid

approach to debating institutional matters and stated the case for making institutional theory a multidisciplinary approach to economics, law, and other disciplines (Williamson, 1990, Ménard, 2018).

The critical elements in the New Institutional Economic discourse were a hybrid model for organizing transactions in developed markets and intermediate or meso institutions to bridge the gap between rules surrounding social-economic activities and how actors operate within these boundaries (Ménard, 2018). The original institution's theory had five key issues: defining the role of institutions and how they constraints and enable behavior and shape behaviors of actors; how to integrate social psychology in institutional matters; how to investigate social phenomenon; how institutions function and how to deal with a pragmatic and humanistic approach to social value (Spithoven, 2019).

The above scholar also noted the critical similarities between Old and New Institutional Economics include institutional bureaucracies, transaction cost, institutional arrangement, and the impact of institutions. The difference between the new and old institutional theory primarily uses scientific approaches by new institutional scholars to study the phenomena. They use market orientation, game theory, and regression analysis which old institutional scholars did not use (Spithoven, 2019).

2.5 Institutional Isomorphism in Emerging Markets

Several factors come to play when dealing with institutional voids in emerging markets and how to deal with the phenomenon. Manufacturing firms must understand the role of institutional pressures, such as normative, mimetic, and coercive forces in emerging markets and how to leverage them to overcome institutional voids (Dhillon et al., 2023). In addition, manufacturing industry exhibits coercive behaviours in such that firms pressure their suppliers to deliver a product

quality to the manufacturer for use in production. In contrast, mimetic comportment is displayed when manufacturing firms mirror the business processes of other firms or the competitions, and normative behaviour is where firms invest in human resources to professionalise their workforce to overcome the skills gap (Tachizawa et al., 2015; Kauppi, 2013; DiMaggio & Powell, 1983; Hsu et al., 2013; Moxham & Kauppi, 2014). All these behaviours are meant to create legitimacy in their supply chains and drive innovations.

Furthermore, mimesis is a mechanism institutional organizational theorists use to explicate isomorphic institutional changes (DiMaggio & Powell, 1983). Mimesis is analogous to the attraction mechanism because actors move toward existing institutional models in practice. This pressure exists in supply chains because of institutional voids. Supply chain managers must respond to these pressures (Kauppi & Hannibal, 2017) and innovations in the supply chains, for example, an attempt to address carbon emission issues from manufacturing firms (Zhang et al., 2023).

In addition, DiMaggio, and Powell (1983) identified coercion as one mechanism under which institutions change. Homogenisation can result in informal and formal pressures from external sources and cultural expectations from the external environment. Institutional-type diffusion depends on Information flow, legitimacy, and social networks (Colicchia et al., 2019). This the process tends to occur in supply chains due to institutional pressure and creates legitimacy in supply chains to deliver value to customers.

In the end normative pressure allows manufacturing firms to improve their regulatory environment; corruption and bribery problems are serious institutional voids manufacturing faces. Normative pressure in the supply chain for manufacturing firms includes increased consumer demand for more availability of eco products, creating legitimacy for products in the supply chain,

including tackling quality concerns, and promoting green environmental and circular economy products (Chen et al, 2017a).

Likewise, mimetic pressure permits manufacturers to develop robust competitive strategies by adopting innovative supply chain practices, increased collaboration, and improved downstream supply chain activities such as outsourcing with competent 4/3 PL providers. These initiatives can significantly reduce the impact of institutional voids in the manufacturing industry (Um et al., 2019).

Additionally, Castro-Lopez et al. (2023) avow that certain social, coercive, and mimetic institutional pressure is necessary to ensure manufacturing firms implement circular economy principles such as product innovations, recycling, and sustainable production practices to support institutional entrepreneurship in emerging markets need to reduce the impact of institutional voids. Both internal and external pressures are required to adopt supply chain practices that can reduce institutional barriers in the manufacturing sector. Manufacturing firms adopt the same practices and procedures and mimetic the action of one another because of industry competition (Morgan et al., 2023).

In the supply chain network, coercive pressure may result from formal and informal players, and formal rules such as regulations to support the manufacturing sector are obligatory in emerging markets to reduce the level of poor and substandard products in the markets. In contrast, informal rules are warranted because of the informal nature of most emerging markets economies that are used to support business transactions (Barbalet, 2023.) Normative pressure is collective pressure for industry players for their members to practice certain ethical behaviours and adopt certain practices to diminish the problem of institutional voids, such as collective bargaining, collaboration and negotiations through associations and memberships. Mimetic pressure burdens

manufacturing firms to be the best in their specific areas of competency and firms trying to emulate and mimic the best and leading industry players locally, regionally, and globally (Palthe, 2014; Bag et al., 2021 Amini Sedeh et al., 2022).

The cognitive and normative settings inform decision-makers on how to solve organizational problems. MNC can use it in emerging markets to address informal institutional voids in their supply chains (Koch, 2020). The dependencies in the supply chain give entrepreneurs the latitude to devise regulatory regimes to solve institutional pressure and complementarities that alleviate inadequate regulations found under institutional voids (Yeoman & Santos, 2019; Qian, Liu, & Wang, 2018).

Mimesis is a mechanism that institutional organization theorists use to explicate isomorphic institutional changes (DiMaggio & Powell, 1983). Mimesis is analogous to the mechanism of attraction because actors move toward existing institutional models in practice. This pressure exists in supply chains because of the institutional voids. Supply chain managers must respond to these pressures (Kauppi & Hannibal, 2017), and innovations in the supply chains, for example, attempt to address the issues of carbon emission from manufacturing firms.

2.6 Results of Literature Review

The literature on institutional voids in emerging markets has grown exponentially in the last decade and IB scholars have made significant contributions in opening this avenue of research as depicted that novel scholar can make a contribution.

2.6.1 Institutional Voids in Emerging Markets

The literature reveals that informal, political, economic, and socio-cultural institutions within the Sub Sharan context are relevant to family business and entrepreneurship (Amankwah-Amoah et al, 2023c). Both informal and formal institutions influence business operations in emerging

markets. There are three sources of institutional pressure: political, economic, and social-cultural institutions, and these impact specific institutional voids (Mair & Marti, 2009).

Institutional voids have received considerable attention from management scholars over the last two decades, and numerous inquiries have been conducted in emerging markets to examine how firms manage the impacts of institutional voids (Manikanda & Ramachandran, 2013, Harrison et al, 2018).

Scholars have pointed out that institutional voids increase transaction costs in emerging markets; for example, regulations, a lack of regulations required firms to modify or adapt their strategy to compete in specific markets. In contrast, very tight regulations sometimes require firms to invest in additional capacities to meet the requirements to conduct business which is a dent in the firm bottom line (Oesterle et al., 2017; Hernandez & Guillén, 2018).

These voids include uncertainties in the regulatory mechanism, deficiencies in enforcing institutions, broken factors markets, red tape, and insufficient property rights (Bekaert & Harvey, 2017). Institutional voids mirror different characteristics in emerging markets; their impacts are different, but much attention has been placed on the formal market supporting institutions rather than informal institutions (Shirodkar et al, 2016).

Moreover, to broaden the research on institutional voids, IB scholars have proposed a shift from form to function to enrich the research field (Dieleman et al., 2022) because the problem is not that there are no institutions in emerging markets but the functionality of institutions that are being questioned. However, instead, it is their functionality which is often questioned (North, 1990).

Institutions are not static but change over time, and therefore institutions can be developed or strengthened to make sure that institutions are functional to support the market. Therefore,

institutions can move from static to dynamic to solve critical problems in emerging markets that frequently create voids.

Furthermore, the assumptions that institutional voids in emerging markets are abundant can be interpreted in context because not all institutions in emerging markets are the same but differ in context and space (Oriaifo et al., 2020). Moreover, depending on the stage, development, and democracy, institutional void severity differs according to the institutional arrangement across emerging markets (Kingsley & Graham, 2017).

Institutional voids can be translated as opportunities (Mair et al., 2012). Firms can use the opportunities created by institutional voids, such as innovation, to bring new products and services to the markets hence becoming more profitable while at the same time addressing voids.

Manufacturing firms use various institutional governance mechanisms to improve institutional effectiveness and selective enforcement, and lastly, development economics explains how institutions evolve and are transported across boundaries. Some scholars have criticized the assumption that institutional voids are inadequate for international business is far-fetched because institutional voids create opportunities for firms that can innovate, create new business, and fill these voids by offering goods and services which are currently not offered in the markets or act as intermediate to share information and data to enable firms to overcome institutional voids (Amaeshi et al., 2016).

2.6.2 Forms of Institutional Voids in Emerging Markets

According to Khanna and Palepu (2013, p.23) “emerging markets suffer from institutional voids in key market-supporting institutions that underlie the functioning of developed countries' economies.” Such institutional voids include, among others, “uncertainty in the regulatory frameworks, inefficient rule enforcing mechanisms, malfunctioning factor markets, excessive red

tape, and suboptimal protection of property rights.” Institutional voids increase transaction costs in the supply chain (North 1990; Williamson, 1975), but these costs can cut through supply chain innovation through the deployment of technology and processes (Banerjee, 2018; Basole & Nowak, 2018).

Furthermore, Khanna and Palepu (1997, p.9) elaborates on five key types of institutional voids in emerging markets: “voids in product markets, labor markets, capital markets, regulations, and contracting.” This empirical study deals with three voids mentioned above; product, labor, and regulatory voids, and how supply chain innovation can ameliorate the impact of institutional voids (Davies, & Torrents, 2017; Becker et al, 2020).

A study carried out in India identified five types of institutional voids faced by Indian entrepreneurs: "absence of explicit and informal policy framework and governance direction, the absence of technical support and interaction with formal science and technology organization, the absence of trusted government institutions, about administrative issues, registration, patent, and taxation, absence of social and economic safety nets provided by regulatory institutions and the absence of formal credit institutions for innovations financing" (Voeten et al., 2017).

The social institution gap is missing or underdeveloped in emerging markets, which should propel social innovations (Osongo, 2019); institutional entrepreneurship and social innovations are a research gap in emerging markets. Manufacturing firms must provide solutions to some of the social problems that customers in their market face, especially in emerging markets (Unceta et al., 2016; Becker-Ritterspach, et al., 2017a).

One of the critical problems in emerging markets is sometimes not a lack of institutions but also regulatory voids. Institutions exist, but the regulatory voids include a “fragmented supply chain,

pressure from intermediaries, and the absence of quality controls in areas controlled by the majority partner.” (Arunachalam et al, 2020).

However, not all manufacturing firms can comply with these regulations due to institutional voids in the enforcement aspect. Also, there are expectations from consumers that manufacturing firms must address environmental issues in their supply chain (Becker-Ritterspach et al, 2019b).

The lack of regulation is a severe problem in the Sub Sharan Africa business environment, impacting how business is conducted and how resources can be allocated (Murithi, 2019). There is an apparent lack of understanding of corporate governance and institutional voids in emerging markets, exacerbating institutional problems. Emerging markets firms do not have strong management boards, resulting from weak corporate governance regulations in some of these countries which result into grand corruption and state capture in both the public and private sectors. Gërkhani & Cichocki (2023) pointed out the significance of formal and informal institutions in emerging markets and reiterated that while formal institutions support the rule of law and help in building robust institutions that are capable of fighting corruption and bribery in emerging markets and informal institutions promotes trust and tax compliance. The mixture of formal and informal institutions is noteworthy in diminishing institutional voids in emerging markets (Meyer & Peng, 2016).

2.6.3 Formal & Informal Institutional Voids

Webb et al (202; p505) defined informal institutional voids as “the inability of norms, values, and beliefs and their localized representations to facilitate stable, efficient, and effective transactions. Formal and informal institutions are complementary in emerging markets and manufacturing forms must exploited both in responding to institutional voids. Wang et al, (2019) alluded that

formal and informal institutions are important for improving innovation performance in emerging markets.

While Chen & Wu (2023) posits that informal institutions play a significant role in emerging markets because of the underdeveloped nature of formal institutions. In Sub-Saharan Africa, most business transactions are informal, and therefore, to respond to institutional voids, MNCs must invest in social structure and civil society to promote their business venture. Emerging markets are weak in formal institutions but strong informal institutional and relational mechanism to navigate institutional voids.

2.7 Responding to Institutional Voids

Institutional voids are prevalent in emerging markets, and the literature suggests that firms can use several approaches to respond to both formal and informal institutional voids in emerging markets. IB scholars have shown several means through which firms find solutions to institutional voids.

2.7.1 Business Groups & Institutional Voids

Peng (2003), an eminent scholar in international business, restates that the types of business organizations in emerging markets include Incumbent firms such as business groups, state-owned enterprises, private firms, start-up firms, and new entrants who are foreign-based. Interaction through competitions and collaborations, such as forming a strategic alliance and impacting the rivals' strategic choices and directions used to address institutional voids (Ahmad et al, 2018; An et al., 2021; Wang & Ma, 2023).

Business groups are significant in filling institutional voids through information sharing, lower transaction costs and capital investment in emerging markets (Kim & Song, 2017). Empirical research shows that business groups' performance is higher than standalone firms, partly because

business groups can maneuver institutional voids better than standalone firms (Purkayastha et al., 2023).

In addition, business groups use other approaches to better institutions in their operating locations for example, allow sharing of critical information regarding market problems, resource allocation and capabilities (Hu et al., 2019; Manikandan & Ramachandran, 2015). Some firms in emerging markets are structured as business groups which help them significantly reduce costs because of institutional voids, for example, by sharing resources such as human capital, production capacity and distribution synergy (Wright et al., 2005; Peng et al., 2008).

Furthermore, the structural problems found in markets often lead to most firms, such as business groups in many countries and the operation of loose strategic alliances in emerging markets (Chittoor et al, 2015b). In addition, network entry eases market access speed and may permit local ties to remain undeveloped or be a first step in building in-country networks.

2.7.2 Entrepreneurship & Institutional Voids

Wu et al, (2020) asserted that inclusive entrepreneurship could pragmatically help overcome institutional voids while addressing pressing societal issues such as poverty in emerging markets. Moreover, the study shows that building new markets and engaging communities from disadvantaged backgrounds in the value chain can lead to sustainable development through a shared economy and poverty alleviation in emerging markets. The supply chain, therefore, becomes a focal point in managing institutional voids.

Amankwah-Amoah et al, (2023c) uses entrepreneurship and new technology to overcome institutional voids. The context of this study was important because it was conducted in Ghana Sub-Saharan Africa, where the literature shows that nascent entrepreneurs use informal ties and

networking capabilities to overcome institutional voids in resource constraints environment and information asymmetry in these markets.

Moreover, emerging markets have been very accessible and technologically driven because of globalization (Chege et al, 2020a). Therefore, the context of how to fill an institution's voids will depend on the accessibility of markets and dealing with the nuances of the market's characteristics. However, technology plays a significant role in easing payment delays and other intermediary problems in emerging markets.

In addition, entrepreneurs may also leverage institutional arbitrage as these developing markets offers interesting opportunities to examine entrepreneurship from the different institutional contexts and use this knowledge to combat institutional voids and start new ventures.

2.7.3 Localisation Strategy & Institutional Voids

Some firms use a localisation strategy to respond to institutional voids in emerging markets (Donnelly & Manolova, 2020). Saka-Helmhout (2020) articles reviewed 73 articles authored in 26 peer-reviewed journals and concomitantly assessed the embeddedness of institutional agency in the IB field. In addition, Xu et al. (2021) reviewed recent studies and analysed the budding body of literature that addresses the institutional context of international strategy by examining articles in major journals from 2008 to mid-2020 and identified six different categories of international strategies and categorised institutions into eight types. These studies are impactful because they show institutional voids' impact and the strategies used to fill them. Narula (2012) suggests that home-country location advantages shape the initial firm-specific assets of MNCs which is not exceptional to MNCS but reflects their status as nascent MNEs (Ramamurti, 2009).

2.7.4 Governance & Institutional Voids

Gatignon & Capron (2023) postulates that governance is an instrument for building a robust institutional framework in emerging markets to reduce and address institutional gaps. Moreover, an open institutional framework is necessary to build partnerships across emerging market industries, and emerging firms must therefore invest in institutional development. In addition, entrepreneurship, a technique to fill the institutional void, is supported by Yu et al, (2020), who stated that it impacted free enterprise and venture creations in emerging markets.

The opportunity institutional voids present for entrepreneurs in emerging markets is the need to create new enterprises to address identified market gaps. There is significant change around institutions emerging in underdeveloped economies, and new ventures in emerging markets must adapt to these institutional medley and changes to fill institutional voids.

2.7.5 Firm Legitimacy & Institutional Voids

Legitimacy is another response to institutional voids, and MNCs use this approach when selecting partnerships and contracting in emerging economies to avoid corporate scandals (Pavlovich et al, 2016). Given that MNCs rely on the legitimacy and reputation of their brand to be successful and, therefore, to fill institutional voids, MNCS can ostensibly rely on built reputation and trust to overcome institutional deficiencies in emerging markets. Moreover, the literature shows that a lack of quality standards and a weak regulatory framework can be filled through manufacturing firms gaining pragmatic, moral and cognitive legitimacy in developing economies (Pavlovich et al., 2016).

Legitimacy is important in emerging markets because it helps firms navigate institutional voids which are formal and informal because the need for markets acceptance and approval is critical and can enhance the reputation of the organization (Amankwah-Amoah et al, 2018). Consequently,

MNCs ought to appreciate and correctly comprehend the formal regulatory and informal normative and cultural rules of the location they operate in thrive.

In addition, reputation augments firms' legitimacy and Gao et al, (2017) proposed a reputational view approach to overcome institutional voids in emerging markets. The study's findings show that despite the persistence of institutional voids, some firms in emerging markets have endured longer because of their reputation measured through prominence, quality products, organizational resilience and business processes using a tested processes model.

Ingersoll (2023) reported that supply chains were a source of organisational legitimacy, and firms that are ranked, for example, by Gartner, outcompete those that are not ranked and are better at navigating institutional pressure through implementing supply chain innovative practices. Moreover, certification is essential for supply chain sustainability and legitimacy (Chiputwa et al., 2015; Liu, 2023).

In addition, to ensure legitimacy coercive institutional isomorphism drive change in the supply in emerging market as a result political influence and pressure (Cajaiba-Santana et al., 2020; Boxenbaum & Jonsson, 2017). Government exerts regulatory pressures to ensure compliance for manufacturing firms to support sustainable supply chain practices and policies (Rottig, 2016; Ansari, & Kant, 2017).

2.7.6 Servitization & Institutional Voids

Costa et al (2020) avows some firms to use servitization as a process where manufacturing firms develop ancillary services besides their primary offerings to manage institutional voids in developing markets. Servitization primarily fills institutional voids in taxation, infrastructure, and labour force. In addition, the motivation for servitization to ameliorate institutional voids resolves around the need to provide better consumer services, financial performance, and strategic defense

against institutional voids (Jankovic-Zugic, et al, 2023). In this regard, manufacturing firms need strong home institutions to support market development.

Furthermore, Karna et al, (2013) proffer the use of innovation networks across geographical and organizational boundaries to alleviate institutional voids. For example, in research and development, formation of subsidiaries, an informational technology diffusion is critical for MNCS operating in developed countries because, in these markets, R&D and information technology infrastructure are undeveloped (Chege et al, 2020b; Parthiban et al., 2020; Soliman, et al., 2023).

2.7.7 Corporate Social Responsibility & Institutional Voids

Doh et al, (2016) theorizes ethics and corporate social responsibility to moderate institutional voids for domestic and MNCs firms in emerging markets. However, MNCs have used CSR extensively to reduce the impact of institutional voids in their markets. Moreover, the scholars also alluded that CRS signals an approach to legitimacy and use this gained legitimacy to fill institutional voids.

Moreover, corporate social responsibility fills institutional voids in emerging markets (Zhang et al, 2018; Garri, 2022). In addition, although some firms in emerging markets lack solid formal institutions, they usually respond to these deficiencies by sometimes ameliorating with strong informal institutions (Morris et al, 2023).

Studies have shown that corporate social responsibility has been used to address institutional voids in emerging markets (Ferri et al., 2022). Institutional voids are viewed as an analytical framework to analyze corporate social responsibility in the context of institutional voids primarily because the socio-environmental factors can be developed in economies with weak institutions (Davila et al., 2018).

CSR has gained traction in emerging markets as a tool to address social evils, and manufacturing firms use CSR to improve market access (Adeleye et al., 2020; Littlewood & Holt, 2018). However, studies have shown that CSR can only address some of the problems in the context of institutional voids (Amaechi et al., 2016). Therefore, the development of a robust institutional framework and regulatory environment.

Multinational corporation uses corporate social responsibility to fill institutional voids in emerging markets (Lam et al, 2018). The primary purpose of CSR is to improve the firm's reputation and trust in the community to reduce informal and formal voids in the markets place. This study show that firms use CRS to create value and fill institutional voids in the home country of operation. Furthermore, the value of firms and CSR are closely related to institutional voids. The value of firms is lower where institutions are weak compared to countries with more substantial institutional arrangements (Bothello et al., 2019).

2.7.8 Infrastructural Development & Institutional Voids

Kumar et al, (2021) examined infrastructure financing in emerging markets to reduce institutional voids given the poor transport infrastructure in underdeveloped markets. The quality and quantity of infrastructure to support international business in essential and several approaches to infrastructural development such as public-private partnership, debt finance and donor funding. Investment in road and rail transport to improve logistics and movement of goods and services.

Bribery and corruption are widespread in Sub Sharan Africa due to institutional void in legislative and technological deployment (Ufere et al., 2020; Luiz & Stewart, 2014). Infrastructural development in terms of technology can enhance the efforts in fighting corruption for example technological deployment such as blockchains can address this problem because digitally encrypted transactions can be challenging to alter. Therefore, government revenue and tax

collection officials would find it challenging to manipulate digital stamps, tax returns and customs entry. Moreover, supply chain transparency is essential, and blockchains are relevant in promoting transparency in the supply chain (Morgan et al., 2023; Sharma, 2023).

Aman et al. (2022) performance measure MNCs must build an open institutional infrastructure to overcome institutional difficulties in emerging markets (Gatingnon & Capron, 2020). Moreover, public-private partnerships have the potential to address institutional roadblocks in emerging markets and assist stakeholders to collectively work and pool resources to unlock the supply chain opportunities and participate in building an inclusive institutional infrastructure and bricolage.

2.7.9 Social Innovations & Institutional Voids

Several scholars have presented evidence to show how social innovations can be impactful in attending to institutional voids (De Silva et al, 2020; Onsongo, 2019; Agostini et al, 2020; Turker, & Vural, 2017; Živojinović et al., 2019) and social innovation has a real impact in addressing societal problems such as poverty that is unescapable in developing economies especially in Sub Sharan Africa.

Social innovation is a crucial driver of social change in emerging markets. The supply chain is an area where social agenda can be implemented to improve the livelihood of the marginalized local communities that live on the fringes of economic participation in emerging markets, especially those operating in the informal economy (Butzin et al., 2014).

Social innovation must result in social inclusion in supply chains in emerging markets. Social innovations in the supply chain must address the need for inclusive growth, policy, agency, social systems to promote societal change and create jobs in emerging markets and other specific needs to the communities where manufacturing firms operate (Varadarajan & Kaul, 2018).

Also, social innovation and transformation is an integral part of supply chains in emerging markets and can be used as a measure to fill institutional voids. Agostini et al. (2016) developed a social innovation framework for emerging markets. The findings show several dimensions in the institutional context such as political, financial, educational/work, and cultural systems, the presence of multiple actors, institutional pillars (cognitive, normative, and regulative), and the dimension of social innovations such as the modification of social needs, innovative solutions, implementation of social innovations (Scott, 2005; 2014).

Supply chain innovation in emerging is essential in promoting a transformative and social sustainability agenda in the value chain to close the institutional gaps in these developing economies and address issues such as poverty hence creating an impactful policy (Silva et al., 2023). Supply chains are the bedrock of inclusiveness and transformation in poverty-ridden emerging markets because it offers opportunities for local supplier development and diversity, allowing MNCs to create both economic and social impact (Ansari, & Kant 2017).

2.7.10 Internationalization & Institutional Voids

In additional other IB scholars have put forward International as a strategy to address institutional voids in emerging markets (Dekel-Dachs et al, 2021; Alexander, & Doherty, 2021; Nayyar, & Maity, 2021) and these scholars posit that emerging markets firms go expand their operations in both developed and underdeveloped markets to avoids institutional voids for example some South African firms such as Sasol, South Africa Breweries and others have internationalized to improve their chances of success and entered other markets in Africa, Europe and South Africa and Asia.

Other firms in emerging markets have used internationalisation as a viable solution to institutional voids (Aguilera et al., 2017; Peng et al., 2008; Puffer & McCarthy, 2016). The approach is implemented through market entry into a more developed market to significantly reduce the risk

associated with operating in their markets. However, a few firms in Sub-Saharan Africa have been able to internationalise to escape institutional voids (Alexander & Doherty, 2021; Rana & Sørensen, 2016).

In addition, some firms use internationalisation to respond to the institutional void by entering developed markets within their region or establishing in developed countries with better institutions (Ramamurti, 2012; Barnard, 2021). Moreover, other strategies to respond to institutional voids such as "replicate or adapt" home-market business models; "compete alone or collaborate" with competitors and other stakeholders; "accept or change market context", that is, by either replacing voids through internalization, for example, internal training and development or innovations in the markets place by way of strengthening intermediaries; and "enter, wait or exit" the market based on given conditions (Khanna & Palepu, 2010b, pp. 87-91; Biçakcioglu-Peynirci, 2023).

Cuervo-Cazurra (2012) reiterates that emerging market multinational enterprises offer an opportunity to revisit existing internationalization theories. In addition, Peng's (2012) empirical paper on emerging market multinational enterprises classifies three distinctive advantages of Chinese MNCs which are home government support, technological and managerial advantages, and capital to support M&A as an entry mode to developing countries (Aharon & Siev, 2021). In contrast Sub-Saharan Africa MNCs especially from Nigeria and South Africa struggles to penetrate Africa markets because of the above problems (Chiarvesio et al., 2015).

Likewise, the core strategy is related to firms from developed economies that invest in emerging economies; others include domestic firms competing within emerging economies, for example, South African firms entering other sub-Saharan African countries such as Uganda, Kenya, and

Tanzania. In addition, firms from emerging economies enter other emerging economies example, Chinese firms enter India, Russian and other BRICS countries and finally, firms from emerging economies enter developed economies. Rodrigues et al, (2017) revealed that internationalization, substitution, borrowing, and signaling were some of the strategies employed by firms to respond to institution voids.

In emerging markets, there are late and early movers. For example, firms in the west are usually first movers because of their resources and innovative capacity, while emerging markets MNEs are considered late movers. Several MNE from emerging markets, such as South Africa, has moved into Africa, and Uganda had 36 South African firms before covid, but these numbers have decreased after the pandemic.

2.7.11 Network Collaboration & Institutional Voids

The scholarship on emerging markets suggests that firms use inter-firm networks, alliances, managerial ties, and political ties to improve the performance of the firm where there are incidents of institutional challenges (Khanna & Rivkin, 2001; Luo, 2003).

Moreover, network collaborations are a strategy used by firms in emerging markets to overcome institutional voids in the regulatory and judiciary spheres and use relational approaches to manage institutional actors, thereby significantly reducing the risk of opportunistic behaviours of other actors in international business such as suppliers (Brix-Asala, & Seuring, 2020).

Family-owned business forms most of the international business in emerging markets and family-owned business cope with institutional business through a frugal approach to resource management while using its local influence and relation to unlock opportunities in the markets (Luo & Chung, 2013; Le Breton-Miller, 2013). In addition, the supply chain network is critical in addressing institutional void, especially around the transaction cost (Williamson, 1985).

Supply chain network can be a substitute for formal institutions to overcome institutional voids and informal institutions using institutional theory (Dekel-Dachs et al, 2021). In addition, network contributes to internationalization in emerging markets by substituting informal networks, collaborating with stakeholders, and enabling partnership and integration of the value chain (Adebanjo et al, 2018).

Alimadadi & Pahlberg (2014) accentuate the need to establish local networks and collaborate with politicians, businesses, civil society, and others to ameliorate institutional voids. In addition to combat institutional voids, MNEs use resource commitment, intra-network information flow, tailored informal local responsiveness, adaptability, and flexibility to respond to institutional voids (Luo, 2003).

2.7.12 Strategic Management & Institutional Voids

The strategic approach, creation of strategies, organizational structures, strategy formulation, and strategic evaluation as a guide for organizational management, considering the effects produced by the different types of strategies on the performance of organizations (Fuentes et al, 2020).

The strategic management literature articulates the critical areas of strategic management which can use by MMNES to respond to institutional voids in emerging markets, such as strategic approaches, strategic creation and organizational structures, strategy formulation and strategic evaluation. Business leaders create strategies which can be applied to overcome operational difficulties in emerging markets. Moreover, these strategies must fit within the company's vast organizational structures. Formulating strategies to overcome institutional voids in emerging markets is essential because of the potential benefits and risks of not developing such a strategy. Besides, the organization is out to evaluate the strategies to examine its performance in emerging markets in overcoming institutional voids (Amankwah-Amoah et al, 2019a).

Organizational structure, corporate, business, and function strategies implemented are designed to overcome institutional voids in emerging markets. Firms usually use the vertical integration structure to address systems problems in their supply chains (Brenes et al, 2019). Also, MNEs, during strategy creation, must look at the entire business environment in emerging markets, such as political decision-making, marketing, technology, and normative and cognitive environment (Ge et al, 2019). Given in emerging markets, firms can use various strategic approaches such as generic, intensive, diversification and integration to overcome institutional voids (Asgari et al, 2017a).

2.7.13 Supply Chain Innovations and Institutional Voids

Supply chain innovations are a powerful tool to respond to emerging markets (Silvestre, 2015; Jabbour et al, 2020, Rehman et al, 2020). Some benefits accrue to manufacturing from having innovative suppliers (Bogers, et al., 2016). However, the financial benefits that accrue to suppliers are debatable. There are two antecedents to supplier innovativeness: technical antecedents, including organizational capabilities such as research and development budgets and investment, and behavioral antecedents, highlighting the buyer's relationships as a preferred supply chain partner (Goldberg & Schiele, 2020).

Supplier innovations are critical in the new product development process, especially in the manufacturing context, the need to collaborate (Kim & Chai, 2017). Given that suppliers are critical in unleashing innovative thinking and new products to the market, there is a need for trust between industry actors to foster the innovative culture needed in emerging-market manufacturing environments to reduce institutional voids' impact tacit knowledge transfer (Sikombe & Phiri, 2019).

Supplier innovation may require a network of several suppliers to achieve its purpose. The key areas to consider where several suppliers are involved include insourcing and outsourcing decisions, supplier selections, innovation capability assessment, joint supplier selections for second and third-tier suppliers, supplier development, and coordination (Talmar et al., 2018; Sepulveda et al, 2014; Alkhatib, 2017).

Supplier innovation can be configured to allow upstream suppliers to invest in innovation that the downstream manufacturer sells to downstream customers. Supplier innovation contracts are structured in three models: "wholesale contracts, quality dependent wholesale price contracts, and revenue sharing contracts" (Wang & Shin, 2015). Also, the above scholars recommend the need for significant supply chain innovation decisions to easy coordination of supplier-buyer innovation activities.

2.7.14 Non-Market Strategy & Institutions Voids

literature has shown that in emerging markets some multinational corporations rely on political ties, nonmarket strategies to respond to institutional voids (Marquis & Raynard 2015). MNCs lobby and influence decision makers to address some of the voids identified in the market (2015). Political institutions are relevant in emerging markets and play a significant role in filling institutional voids since the legislative branch of government is concerned with policy development whilst the executive branch implements, and the judiciary is charged with enforcement. Therefore, firms tend to lobby politicians when the business experience institutional voids. Moreover, regulation is critical to a well-functioning market, and firms sometimes sponsor legislation to fill voids (Rodrigues & Child, 2023).

Some multinational cooperations are politically connected and leverage on this relationship in their home countries to respond to institutional voids (Luo et al, 2010; Peng et al, 2008). For example,

MNE can obtain low-interest loans in home country institutions to avoid high, exorbitant rates in emerging markets. Besides, the conglomerates advocate for tax and investment relief when they enter emerging markets (Alhassan & Naka, 2020).

IB scholars have pointed to political and legal institutional voids as persistent in sub-Saharan Africa (Stephan et al, & Stride, 2014). In addition, there are institutional voids in the financial or capital markets (Shinkle & McCann, 2014), and there is a low level of skills development or gaps (Wang & Cuervo-Cazurra, 2017), which influences on operating capabilities of MNE in these subsistence markets.

2.7.15 Institutional Entrepreneurship

One stream of literature has focused on institutional entrepreneurship as a strategy to combat institutional voids where stakeholders engage in institutional building and firms actively lobby the governmental agency to improve institutional qualities so that the business bottleneck is reduced. Besides, in developing markets, institutional settings are weak, and this impact of the international business transition can significantly increase the transaction cost in some markets (Aulakh & Kotabe, 2008; Khanna & Palepu, 2000; Williamson, 1985).

Neo-institutionalism concepts discussed in literature which firms in emerging markets practice to ameliorate institutional voids include but are not limited to institutional logic and institutional work, which form an essential part of the neo-institutionalism strand and these shades light on how institutions change and develop over time (Kim et al., 2010; Meyer & Nguyen, 2005; Tina Dacin et al., 2002), internationalisation process (Meyer & Nguyen, 2005), image and reputation, institutional image (He & Zhang, 2018; Zho, 2019), institutional entrepreneurship among others forms of entrepreneurship including digital entrepreneurs used by actors to fill institutions voids (Sydow et al., 2022; Puffer et al, 2010). To attract FDI investment, emerging markets must engage

in institutional rehabilitation and making sure that these institutions support investment opportunities (Barnard & Luiz, 2018).

2.7.16 Family-Owned Business & Institutional Voids

Extant literature shows that family businesses fill institutional voids to improve their performance in emerging markets, and they achieve this through proximity to the markets and mastery of informal institutions and relational networks with local actors such as politicians (Barrédy, 2016). In addition, family-owned businesses are crucial precursor to achieve favorable firm performance in transition economies with extreme level institutional voids. However, these firms must be vertically or horizontally integrated where smaller firms to perform better in jurisdictions will low levels of institutional voids without any significant form of integration (Brenes et al, 2019).

According to Miller et al, (2013), the behaviour of family firms, such as social linkages in communities, are enablers in addressing institutional voids in emerging markets. Moreover, community connections are necessary to alleviate the problems of institutional voids and invariable improve the performance of family firms. In addition, family firms, therefore, rely on the close relationships built over time with employees, customers, and other external stakeholders to reduce the impact of formal and informal institutional voids on their business (Khanna & Palepu, 1997).

Family own firms in emerging markets in Sub Sharan Africa need more research and development capabilities, access to intellectual property rights, technology, open innovations, and investment in research (Cordeiro et al., 2023). Lack of proprietary technology to compete with MNEs who have backing from home countries. Therefore, firms in emerging markets require a cluster of dynamic capabilities, sensing, seizing and transformation to overcome institutional voids and match the strategies of MNEs.

2.7.17 Product Innovations in Supply Chains

Innovation in manufactured products is a critical competitive advantage across enterprises in emerging markets, especially when the target is the bottom of the pyramid customers (Mellahi et al, 2016). Institutional voids inhabit and sometimes drive product innovations in emerging markets. In emerging markets, cheaper but quality products are necessary for the marketplace to address consumers who are not very affluent (Khoury & Prasad, 2016). Green marketing is a competitive advantage along the value chains and can address some of the institutional voids in emerging markets. However, there is a trade-off between higher prices of products and environmental sustainability (Moravcikova et al., 2017).

The fundamental solution to these problems is the constraints resource product development approached dubbed "jugaad," which is currently popular in emerging market countries of China and India. The innovation processes adopted here rely heavily on frugal engineering to reduce material usage to achieve green marketing objectives (Kumar, 2016; Lendel et al., 2017).

2.7.18 Business Process Innovations in Supply Chains

Process innovation is critical in the manufacturing sector, and process innovation is crucial for supply chain innovations in emerging markets. There are several processes which manufacturing firms undertake to make products available to consumers. These processes are causally related to supply chain processes and performance and cannot be achieved independently.

According to Sabir et al, (2018; p.23), little attention is paid to process innovations in the value chain and reiterated that supply chain and innovation management remain two elementary streams of scholarships with little communication (Mentzer, et al 2001). These scholars developed a framework to "capture the dynamics between innovations implementation and configuration of decision and setting." Disruptive innovation novelty in the supply chain has been categorized under

radical, incremental, competency enhancing, disruptive, revolutionary, evolutionary, architectural, niche, technical and administrative innovation (Wu et al., 2016; Ali et al., 2020).

2.7.19 Technology Innovations in Supply Chains

Artificial intelligence is becoming critical in value chain innovations in the developed world. However, there is a need to pioneer artificial intelligence in emerging markets. It shows that AI may alleviate some of the problems in the supply chain to improve product design, manufacturing, delivery, and retail (Alam, 2019; Calatayud et al., 2019). IBM Watson is a clear example of AI that is gaining traction globally, including in advanced emerging markets of China and India. Watson is critical in implementing blockchains and offers insights into supply chain challenges which helps address information asymmetry in emerging markets (Baruffaldi & Sternberg, 2018; Torres de Oliveira et al., 2020).

Several supply chain technologies exist that can be adopted in emerging markets, such as Big Data, Electronic data interchange, enterprise resources planning (ERP), robotics, Aerial Unmanned Vehicle (AUVs), and drones' others. Technology innovation can interface the supply chain to improve organizational performance, especially against the backdrop of institutional voids in emerging markets. The potential of technology to improve supply chains in emerging markets has been under study.

Gunasekaran et al. (2017) found that connectivity and information sharing between top management has positive effects on big data predictive analysis acceptance, assimilation and building processes to significantly improve supply chain performance and operational performance (Pelliere & Da Cunha, 2018). The implication for the above findings shows that supply chain managers must accept and implement technologies such as Big Data in the supply

chain to improve information sharing and address information asymmetry gaps created by institutional voids in supply chain networks (Narooz & Child, 2017).

New technology has played a significant role in the emulation of supply chains. Technologies such as 3D printing and inventory consignment approaches are driven by technology gaining traction in emerging markets such as China (Cannella et al, 2018). Technology innovation in the supply chain in critical emerging markets (Chan, et al, 2018b). Several supply chain bottlenecks can be ameliorated through technology innovations such as payment methods, Global position systems, Enterprise resources planning, blockchains. The scale-up of these technology innovations in emerging markets is critical (Hueske, & Guenther, 2015). Besides, the internet of things (IoT) proliferation into supply chain management has gain traction in industries (Witkowski, 2017; Asgari et al, 2016b).

The adoption of blockchain has gain traction and been identified as the next big thing in supply chain management. Such innovation will undoubtedly solve the problems of innovations in emerging markets (Parthiban et al, 2020). Information sharing in the supply chain is critical, and firms must address information voids in their operations to reduce the level of information symmetry (Torres de Oliveira et al., 2020; Mani & Jabbour, 2020).

Local manufacturing firms might not have the financial muscles to replicate and diffuse some of the innovations in the markets in their supply chains (Askari et al, 2020). The emerging problems in supply chain technology are considered to be: information sharing, information coordination challenges, confidentiality, and trust issues, limitation of information sharing wing partners, technology systems, lack of data systems, and information asymmetry (Ghosh & Tan, 2018; Raweewan & Ferrell, 2018).

Information sharing framework is critical in emerging markets, and blockchain is essential to enhance the competitiveness of the supply chain in emerging markets (Adeleye et al, 2018a). There is a gap in research on the application of blockchain technology in emerging markets to address the challenges of institutional voids in these markets, especially corruption (Tan, 2019). Moreover, a case study for blockchain is urgently required, and lastly, blockchain is a crucial area of collaboration between academics and industry to understand information voids in supply chains (Queiroz et al, 2020).

Industry 4.0 has emerged as a critical differentiator for supply chain actors and provides real supply chain integration between suppliers, manufacturers, and customers (Bag et al, 2018c). The innovation in emerging markets driven by the IoT allows machines to understand the manufacturing process and plan how the task shall be accomplished (Tjahjono et al., 2017). The critical advantage of industry 4.0 is that it will improve manufacturing efficiencies in emerging markets and improve supply chain performance. The AI machines will make critical supply chain decisions, reducing information asymmetry in the supply chain while increasing collaboration between all the key actors along the supply chain.

Fintech innovations are critical to overcome institutional voids in the financial markets, some firms do cross-listing in both home and host countries so that their abilities to raise capital are enhanced, and the ability to do cross-listing helps firms overcome the liability of origin (Wei et al, 2022). Payment systems can be eased with application of fintech innovations such as mobile money to facilitate faster exchange of goods and service. Mobile payment systems have emerged to facilitate transaction in emerging markets where access to financial services remains limited to a few consumers due to exorbitant bank fees and other charges which bottom of the pyramid consumers cannot afford (Heeks et al, 2021; Barbour & Luiz; 2019; Ehret & Olaniyan, 2023).

2.7.20 Business Model Innovations Strategy

The literature of supply chain-driven business models reveals a close link between supply chain innovations and business model innovations since supply chains are constructed to better operational performance (Ahuja et al, 2020). However, business models' innovations are incremental, but this can be accelerated to create new business models that match the current business model (Abdelkafi & Pero, 2018).

According to Brennan et al, (2015), firms need to adapt business models to remedy institutional voids. This analysis is essential to manufacturers in emerging markets faced with numerous challenges that impact productivity and how the entire value chain is performed (Kim et al, 2020).

The circular business models have emerged as a winning business model to incorporate the entire value chain (Konietzko et al., 2020). The building blocks for the circular economy include “materials, new eco-friendly product designs, novice business models, and reverse logistics” (Korhonen et al., 2018, p.11). The business model encourages recycling and efficient use of resources. However, the successful implementation of this business model requires changes in consumer behavior to recycle plastic bottle consumers but change their behavior towards consumption of a product that uses packaging (Ng et al., 2015; Goyal et al., 2018). Reverse logistics is a crucial component of the circular economy business model, and recycling is paramount in reverse logistics (Bernon et al., 2018; Batista et al, 2019).

The circular business model designs in emerging markets must consider the customer behavior and culture to be productive and address institutional voids. Customer behavior and culture still play a big part in emerging markets. There are norms and culture that buyers are used to, and business models must consider the cultural difference in the developed and emerging markets (Kirchherr et al, 2017).

Institutional voids have an impact on business models in emerging markets (Basile & Faraci, 2015). However, some business models bridge the gap between institutional and markets mechanism using electronic commerce (e-com). Business models have been of great advantage to emerging market manufacturing firms to facilitate payment where financial inclusion is a significant problem. Very few customers have access to banking institutions. The new business model in emerging markets should embrace mobile payment systems which have gained traction and a convenient, faster, and reliable payment and receiving plan for business transactions across Africa (McAdam, 2019; Onsongo, 2019).

2.7.21 Absorptive Capacity in Emerging Markets

The capacity to innovate through the generation, acquisition, adaptation, and use of new knowledge is becoming an increasing success factor in emerging markets due to the plethora of institutional challenges faced by market actors (Cuervo-Cazurra & Rui, 2017).

There are three critical types of capabilities: technological innovation and absorption. Innovation can measure in three ways; belonging, reliability, and comparability (Longones, 2016; Aizstrauta et al., 2015). The empirical results from the literature "show that both absorptive capacity and relationship learning exert a significant positive effect on the dependent variable and that that relationship is learning moderates the link between absorptive capacity and green supply chain performance" (Albort-Morant et al, 2017: p.12). This finding has implications for supply chain managers in emerging markets. It shows that more time and resources must be devoted towards reinforcing absorptive capacity as an instrument to generate new knowledge to improve green supply chain performance in emerging markets (Carvalho et al., 2010b; Calatayud et al, 2019; Chu et al., 2017).

Also, the above scholarship shows that little is understood and known by applying absorptive capacity in emerging markets, especially from a Sub-Saharan context. Absorptive capacity impacts supply chain performance. MNC transfer capabilities across borders in emerging markets (Carney et al., 2016a; Huq et al., 2016). Absorptive capacity enhances product innovations. Furthermore, understanding the relationships between absorptive capacity and new product development is one gap scholars have singled out for investigation (Fouad et al., 2018; Zhang et al., 2018).

Through absorptive capacity, firms can build capacity for internal research and development, investments in acquisition, assimilations, and application processes (Zhang et al., 2018; Basole et al., 2018a). Moreover, absorptive capacity is a strong predictor of innovation and knowledge transfer in emerging markets (Zou et al., 2017). Therefore, firms in emerging markets must scale up absorptive capacity to address institutional voids and become competitive in a global market that thrives on innovations to outcompete rivals in domestic and international markets (Adeleye, 2015b).

Ayala and Camp (2015) unearth a gap in Colombian manufacturing firms with no alliance between the firm and educational research to build absorptive capacity and enhance innovations. There is a need for the external alliance to build absorptive capacity in emerging markets to support supply chain innovations. Networks and alliances with educational institutions are therefore critical in building absorptive capacity.

According to Zhang et al., (2018), effects of absorptive capacity, trust, and information systems on product development unearth a gap in the relationship between absorptive capacity, trust, and information systems might be influenced by culture and institutional arrangement and how absorptive capacity impact on both radical and incremental innovations in emerging markets. The

use of multiple respondents and participants to address the gap instead of using a single respondent is proposed in the literature (Limaj & Bernroider, 2019).

Moreover, internal capability and external knowledge directly impact supply chain innovations and firm strategy in emerging markets (Anwar & Hasnu 2016; Cabeza-Pullés et al., 2020). The findings show that supply chain network flexibility and information spanning flexibility mediated the role between external knowledge acquisition and product innovation flexibility (Liao & Marsillac, 2015; Chen et al, 2017d). A flexible supply chain network and appropriate information dissemination strategy are critical to increasing absorptive capacity resulting in supply chain innovation (Basole et al., 2017b).

2.8 Discussion of Literature Findings

The perception of "institutional voids" is a central component of institutional theory, chiefly in the context of emerging markets. Institutional theory examines how institutions that incorporate formal rules, such as laws, regulations, and informal norms and practices, impact the behavior of individuals, organizations, and societies. Institutional voids denote the absence, lack, or ineptitude of these formal and informal institutions in emerging markets.

2.8.1 Institutional Theory

The scholarship in institutional voids has primarily used institutional theory as the overarching framework for understanding institutional voids. Institutional theory theorizes that institutions shape the behaviour of individuals, firms and organizations and impact their decision-making processes in emerging economies.

2.8.2 Institutional Voids Concept

Institutional voids have been defined as the gaps or shortcomings in institutional structures, arrangements and management practices in emerging markets that significantly impact the way of

doing business in these economies compared to developed markets. These voids can occur in the various domains of the economy and are classified under financial, legal, cultural, regulatory, political, and social institutions.

2.8.3 Forms of Institutional Voids

There are several institutional voids in emerging markets, including legal and regulatory voids, which deal with inadequate and poor regulatory enforcement in emerging markets. In contrast, financial voids are related to the underdeveloped financial infrastructure in emerging economies, which limits trade function. The cultural voids encapsulated the cultural differences and contextual nuances in emerging markets. Cultural norms and practices do impact business operations in emerging markets. Social voids entail the available support systems in emerging markets and how this impacts how the economies are managed.

2.8.4 Consequences of Institutional Voids

The literature draws attention to the ramifications and outcomes of institutional gaps in emerging markets, including higher transaction costs because of manufacturing firms' attempts to avoid doing business in emerging markets due to the rising costs of inputs and raw materials. Additionally, both local and multinational corporations are impacted by several entrance hurdles in growing economies. Institutional gaps are also linked to resource limits, making it impossible for businesses to compete favorably with their counterparts in developed economies.

According to the literature, businesses in emerging economies have used a variety of tactics to fill institutional gaps. Informal practices, modifying tactics for developed economies, utilizing formal and informal networks, political connections, and relationships, working with local partners, entrepreneurship, knowledge management, and other approaches are some of the strategies that are employed.

2.8.5 Institutional Change and Development

In developing economies, national governments can play a crucial role in enacting policies to promote reforms, legislation, and the closure of regulatory gaps to ameliorate institutional voids in underdeveloped markets. This can potentially reduce institutional voids in emerging markets. MNCs in developing nations may also reinvent institutional bricolage.

Globally speaking, institutional holes are observed in many eastern European and Asian nations as well as emerging economies in sub-Saharan Africa. What makes a difference is the environment in which these gaps appear and how they affect global trade.

The literature demonstrates that there is still room for advancement in the field's scholarly development, particularly in the areas of applying a strong theoretical framework to interpret the newly emerging issues this study addresses and using a combination of methods to fully comprehend the field's direction and contribution to the body of literature on international business. the part played by official and informal players in filling institutional gaps. the application of cutting-edge technologies, like machine learning and artificial intelligence, to assist manufacturing companies in developing nations in strengthening their R&D capacities.

In a nutshell, institutional gaps have an impact on business, economic growth, and social transformation, particularly in the manufacturing sector of emerging economies. The study's theoretical framework offers a basis for delving into the idea of institutional voids and how they affect emerging markets' business environments. This approach can be used by academics and decision-makers to better understand how institutional voids affect strategy and decision-making in various situations.

2.9 Research Hypotheses Development

The research hypotheses were developed via a literature review to examine causal associations between several variables of interest, i.e., institutional voids, supply chain innovations, firm strategy, and firm performance among manufacturing firms in Uganda. In addition, the multigroup hypothesis studies the relationship between types of firms such as family own, MNCs, SoE and business groups (Carney et al., 2017b). The hypotheses were developed in line with Stephan, et al, (2015), Manikandan, & Ramachandran, (2015), Franczak, (2023), Adomako et al, (2019) scholarship on institutional voids in emerging markets.

2.9.1 Institutional Voids & Supply Chain Innovations

The relationships between institutional voids and supply chain innovations are critical to examine because of the relevancy of supply chain innovations in overcoming institutional voids (Arlbjern et al, 2012a). Moreover, the effects of institutional voids in manufacturing firms in emerging markets are significant in developing a response strategy to reduce institutional voids in an emerging market (Kovid et al., 2021; Rwehumbiza, 2021; Franczak et al., 2023).

Moreover, firms develop several innovations in their supply chains to address voids (Wong & Ngai, 2019). Manufacturing firms use supply chains as a competitive strategy; therefore, constant innovations are required to sustain this competition (Aldhaheri & Ahmad, 2023). However, due to institutional voids, there are constraints in supply chain innovations, such as competition in emerging markets (Kumar et al., 2017). In addition, the high level of institutional voids requires firms to innovate upstream and downstream of the supply chain to address the problems (Silitonga et al., 2023; Qureshi et al., 2023).

H1: Severe institutional voids results supply chain innovations to ameliorate institutional voids in emerging markets.

2.9.2 Supply Chain Innovations & Firm Performance

Kumar et al. (2017) show that supply chain innovations can better firm performance. The supply chain is a valuable network and influences firm performance in emerging markets because stakeholders can use the supply chain to unlock value in the network (Pal, Sarkar, & Sarkar, 2023). The supply chain offers significant advantages to MNCs operating in emerging markets and resource-deprived countries (Flynn et al., 2015). Supply chain innovations can significantly reduce transaction costs in emerging markets and improve firm Performance (Thongrawd et al., 2019; Barriga & Fiala, 2020).

Several factors such as knowledge management, political and social ties, supply strategy, organizational learning, supply chain innovations, trust, commitment, and collaboration are necessary to enhance supply chain performance.” and this has been confirmed in (Deng et al, 2020 and Chen et al, 2021e).

H2: Institutional voids present significant opportunities for new industries, especially in the supply chains to emerge and fill these voids..

2.9.3 Institutional Voids and firm performance in emerging markets

Rehman et al. (2020) asserted that institutional voids create risk for a firm in internal and external emerging markets. There are risks in terms of products, markets, technology failure in these markets which has an impact on firms’ performance (Khanna & Palepu, 1997). Akbar et al. (2017) assert that institutional void influences small and medium enterprise performance often shared in emerging markets and reduces their operations capacity and flexibilities.

However, McCarthy and Puffer (2016) asserted that institutional voids could create opportunities for actors and improve firm performance. Moreover, institutional voids can be an antecedent to firm Performance (Bendickson et al., 2020; Waldner, Poetz et al., 2015). Several firms in emerging

markets have thrived due to exploiting and fillings the gaps created by institutional voids (Ge et al., 2019). Entrepreneurs have emerged to fill these gaps in Kenya, South Africa, Uganda, and other countries in Sub Sharan Africa (Sydow et al., 2020; Adomako et al., 2020; Wang & Zhou, 2020; Mickiewicz & Olarewaju, 2020).

H3: Manufacturing firms develop supply chain strategies to respond to institutional voids in emerging markets.

2.9.4 Institutional Voids & Firm Strategy in developing markets.

In emerging markets, many firms overcome institutional voids through formulating strategies, for example, arbitration (Pinkham & Peng, 2017), reputation-based strategy (Gao et al., 2017), reduced transaction cost (Doh et al., 2017), innovations (Wang et al., 2020), entry mode strategies (Giachetti, & Pephrah, 2020), supply chain strategies (Choi, & Luo, 2019). The formulation of the strategy is a direct response to institutional voids in the markets and the negative and positive impact it has on the firm's operation—firms design strategies to respond to informal and formal voids (Webb et al., 2020; de Silva, 2015).

H4: Institutional voids cause manufacturing firms to develop innovations along their supply chains.

2.9.5 Firm Strategy & firm performance in emerging markets

Firm strategy influences firm performance positively (Narkhede, 2017), and strategy strongly correlates to a firm's Performance (Pei et al., 2020). Emerging market firms must develop strategies that improve Performance (Rohrbeck & Kum, 2018). The strategic choice differs according to ownership types in emerging markets (Yin et al., 2019). Multinational and family-owned firms use different strategies to increase performance because of the contextual differences in their operation.

Firm performance can be explained through "industry structure and firm strategy and capabilities" (Ahuja et al., 2018). However, the three pillars of the institutional envelope: firm strategic choice, industry structure, and performance. The classic strategy model argues that firm strategy choice and industry structure are moderated by firm performance. In this regard, the quality of institutions in emerging markets certainly impacts how firms perform in these turbulent markets.

H5: Firms' strategy and supply chain innovations are antecedents to firm performance in emerging markets.

2.9.6 Firm Strategy and Supply Chain Innovation

The firm's strategic approach influences the supply chain innovation developed and the output of such innovations to cure institutional voids. There is a relationship between strategy and innovation (Zalan & Toufaily, 2017). Marketing strategies deployed by MNCs are intended to address problems in the market, and innovations in the business model are a crucial strategy often applied (Trumpa et al., 2019). There are linkages between innovation, firm strategies, and Performance (Jajja et al., 2017). Firms can innovate in and around institutional voids through a robust business model strategy (Abdelkafi & Pero, 2018).

According to Liu & Stephens (2019) and Zimmermann et al. (2019), there is a connection between firm-level strategy and innovations in the supply chain. Innovations are a prerequisite in building absorptive capacity to "acquire, assimilate, transform and exploit new knowledge" to benefit the supply chain is critical (Martinez-Sanchez & Lahoz-Leo, 2018; Asogwa et al., 2020,p.12). The emerging-market firm intends to foster innovations and alleviate institutional voids through lean innovative practices (Alam et al., 2019a; Cherrafi et al., 2018).

H6: Firm strategy directly influences supply chain innovations in emerging markets.

2.9.7 Firm Strategy, Supply Chain Innovations, Institutional Voids, and Firm Performance

The mediating role of a firm's strategy on institutional voids and supply chain innovations is important (Adomako et al., 2021). Moreover, in markets with high levels of institutional voids manufacturing firms develop strategies to combat institutional voids through increased supply chain innovations (Parmigiani & Rivera-Santos, 2015). The literature suggests that firm strategy mediates the relationships between institutional voids and supply chain innovations (Adomako et al., 2021). The role of firm strategy in ameliorating the institutional void is significant, and firms require robust strategies such as R&D to solve market failures (Ge et al., 2019; Alam et al, 2020b). Several strategies, such as political ties and entry strategies in new markets, provide manufacturing firms with opportunities to ameliorate institutional voids. Global firms are better at crafting strategies to respond to market failure in emerging markets because of their capabilities and resources (Falahat et al., 2018).

H7: Firm strategy mediates the relationship between institutional voids and supply chain innovations.

2.9.8 The mediating role of supply chain innovations in emerging markets

Supply chain innovations mediate between institutional voids and firms' performance in emerging markets (Cheng et al, 2023). Moreover, supply chain innovation increases firm performance in emerging markets (Zimmermann et al., 2020; Kwak et al., 2020). The performance variable is a critical element of institutional theory. Also, other studies have shown that firm strategy and firms' performance have mixed results, but research and development strategy positively affect firm performance (Wang et al., 2020). The supply chain has many performance dimensions, and firms

must adopt several strategies to improve their performance (Bag et al., 2020; Acar, 2020; Alshbili et al., 2021).

H8: Supply chain innovations mediates the relationship between firm strategy and firm performance.

2.9.9 Firm Performance and Institutional Voids

There are several antecedents to combat institutional voids and Supply chain innovations and strategy principally mediate the relationship between institutional voids and firm performance. Innovations and firm strategy can alleviate institutional voids in emerging markets to increase firm performance. Firms use business models, for example, to overcome institutional voids by developing a robust route to market model (Barbour & Luiz, 2019 & Liedong et al., 2020).

H9: Institutional voids in emerging markets impact on firm performance

2.9.10 Firms Ownership Types & Institutional Voids

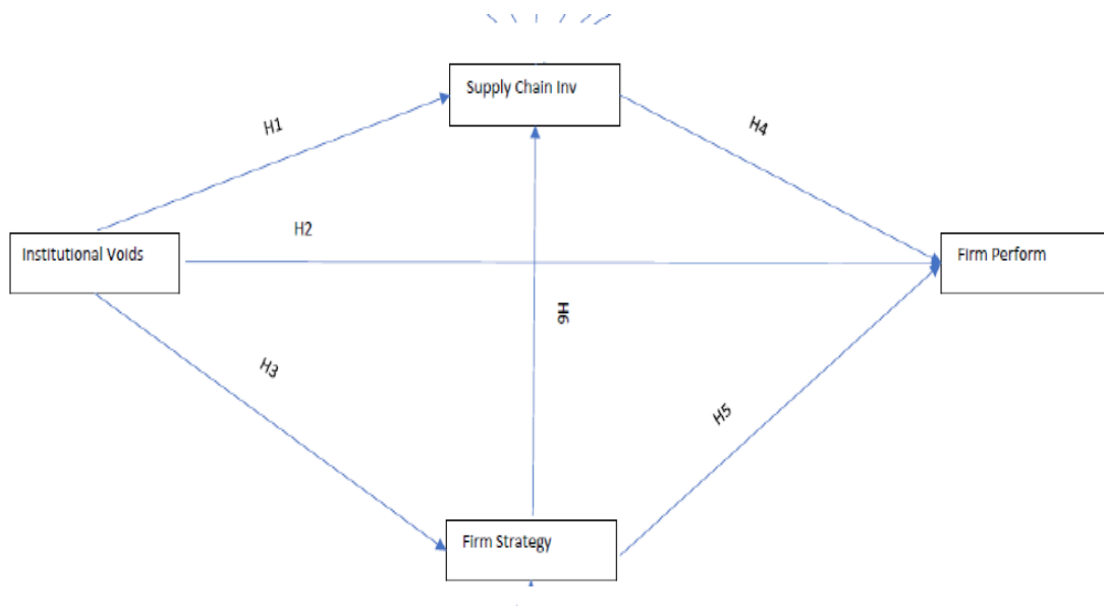
The multigroup hypotheses test how ownership types of influence firms' response to institution voids. Several ownership types, such as MNCs, Family groups, and government-owned entities, respond to institutional voids differently in literature. There is no uniform response to institutional voids, and several strategies, such as signaling, reputation, branding, and others, are available (Gao et al., 2017; Doh et al., 2017).

Firm structure in emerging markets is constructed to ensure high or low performance. Several antecedents support high firms' performance in emerging markets, albeit in the face of institutional voids such as vertical integration, family management strategy, firm size, international and alliance with other firms in emerging markets to overcome institutional voids (Brenes et al., 2019; Chakravarty & Hegde, 2022). The firm ownership structure is essential in ameliorating

institutional voids and different types of ownership, such as business groups, State Owned enterprises, MNCS and family-owned types of institutional approach voids, to resolve them separately (Carney et al, 2018c).

H10: Firm ownership, size, age, and location determine how firms respond to institutional voids in emerging markets.

Figure 2.12: Hypothesis Model



2.10 Summary of Literature Review

Institutional voids are an emerging area of scholarship in international business focusing on emerging and underdeveloped markets in Eastern Europe, Asia, Latin America, and Africa. Extant literature suggests that there are disparate and fragmented studies covering the subject. This thesis deploys Institutional theory to examine the problem and contribute to closing theoretical, knowledge, methodological and empirical gap and provide insight into how firm in emerging markets can ameliorate institutional voids.

CHAPTER THREE: RESEARCH METHODOLOGY

“We know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know.” —Donald Rumsfeld. The Pentagon.

3.1 Mixed Methods Research

This type of research method has gained traction in international business research because of the ability to address complex problems in the research, the context, and the issues to investigate (Timans et al, 2019). Moreover, this methodology is a process that allows novel scholars to use qualitative and quantitative data collection techniques in the same research setting to achieve a specific research purpose while telling a holistic story about the phenomenon and the lived experience of the participants (Tashakkori & Creswell, 2007; Clark & Ivankova, 2016). This research follows the sequential or convergent mixed methods approach (Harrison et al., 2020). The justification for MMR was its methodological rigour and the ability to integrate various research approaches (Guetterman et al., 2019). The data for the two empirical studies were collected simultaneously, and the point of convergence with during the discussion of the results.

This design technique incorporates qualitative and quantitative research design and attempts to alleviate and cure the defects from a single design. The research approach deployed here was sequential transformative collects quantitative or qualitative data. The concurrent triangulation simultaneously gathers qualitative and quantitative datasets and contemporary transformative design (Creswell, 2014; Taguchi, 2018; Dewasiri et al., 2018). The concurrent triangulation design was chosen for this study since it allowed for comparison and reflective thematic analysis.

3.2 Quantitative Research

The quantitative research methodology relied on a collection and analysis of numerical dataset and measured the relationship between variables and tested the hypothesis framed to answer the key research questions (Bryman, 2012; Creswell, 2013). The axiological approach is value-based and employs independence while collecting data and reporting the results. Moreover, the philosophical supposition is post-positivism in knowledge generation and dissemination. The method of inquiry in quantitative research is a survey of experiments, and the data collected are numerical (Saunders et al., 2009). The methodological alignment is related to theory testing and employs complex statistical analysis to give meaning to the data collected to test the hypothesis (Creswell, 2020).

3.2.1 Population & Sampling

The target population was the manufacturing firms in Uganda, and probability sampling was used to draw out these respondents to ensure a high chance of participation in the study (Etikan & Bala, 2017). In addition, simple random sampling techniques gave each respondent an equal chance of participating. The sample size was representative of the target population, which enhanced the validity (Sarstedt et al., 2018).

The proper sampling approach is critical to overcoming research bias, so passive in quantitative research—is the sampling frame for the survey where the participants were drawn. The samples were recruited from the top 95 manufacturing firms in Uganda by contacting the human resources department and sending an email to ask for voluntary participants in the study. These respondents were identified as key informants who could provide credible data for the study during the pilot study (Saldana, 2014).

Samples are drawn from the subset of the population of interest because it is impossible to include all the population members in the study. The sample must represent the population of interest

(Majid, 2018). The criterion sampling procedure was applied to choose participants for the multiple case studies conducted. The thesis used a single-stage sampling design to gather quantitative and qualitative datasets in a parallel cross-sectional design. Access to respondents and participants got from the HR departments of the various firms in the study (Bryman & Harley, 2018). A simple random sampling method was employed to derive the sample used herein. Simple random sampling is a yardstick for achieving “validity and reliability” (Creswell, 2014; p.341).

3.2.3 Pilot Study

The pilot study was conducted to survey the field and to see what would be expected. The primary goal was to test the suitability of the research methods and instrumentation (Srinivasan & Lohith, 2017). This was conducted via Zoom and emails. The pilot proffered a preliminary assessment of the validity and reliability of the tools. The expected quality of the dataset and other concerns (Ahmadnezhad et al., 2017; Towers et al., 2018; Srinivasan & Lohith, 2017).

The instrument was developed by the researcher and validated during the pilot survey. Fifty managers from 95 manufacturing firms in Uganda participated in the pilot study. The instruments were reliable for collecting quantitative data about institutional voids and their impacts on supply chain innovations, firm strategy, and firms in the manufacturing sector (Trakman et al., 2017). In addition, the aim was also to determine if the instrument is coherent, determine if the research assistant understands and can explain the research instrument to potential respondents, conduct an initial factor analysis to pick items, feasibility and determine if the chosen statistical method chosen for analysis is feasible (Lo et al., 2020). The confirmatory factor analysis to understand the loading from the survey was examined. The initial pool of instruments had 102 items or variables reduced to 67 items after the pilot study. The research instrument captures the respondent attitudes, perception, and knowledge about the impact of Institutional Voids on firm performance. The initial

results showed that the project was viable, but several modifications had to be made on the instrument based on results.

3.2.4 Research Instrument

The instrument used in the study used the measurement constructs literature, and a pilot study tested these constructs to see if they could work. Exploratory factor analysis reduced the number of items in the questionnaire—the items with a factor above .80 were retained in the main instrument. Thirteen constructs were specifically developed and adapted in the study, and most of the constructs had more than three reflective indicators, whereas three constructs had five reflective indicators and above (Hooper et al., 2006; Gaskin, 2020).

A research instrument is a tool to gather data from primary and secondary sources such as experiments, interviews, focus groups, questionnaires, and observations. In a mixed method, several tools are deployed to gather evidence. The rudiments of mixed methods are to conduct rigorous studies, and research tools are essential to this process. The instrumentation was developed from literature and theory to collect high-quality data. Two instruments are used in this study: questionnaires and interviews, and these instruments are robust to capture all the constructs and variables in the study.

3.2.5 Data Collection Technique

Quantitative data collection techniques were employed, in which a questionnaire was conducted. This was the most convenient approach to data collections. The questionnaire collected the perception and attitude of the target population regarding institutional voids in Uganda. The questionnaire was piloted before the deployment to respondents. Data collection using questionnaires ensures access to large population (Zheng, 2021). The survey was appropriate; technology was essential and permitted a faster data collection and analysis.

3.2.6 Response Rate

The questionnaire was distributed to employees in management in 95 large manufacturing firms who were knowledgeable about the operational issues in the organization. The questionnaire were distributed to 1425 respondents in the 95 firms, of which 812 questionnaires were returned, representing a 56% response rate. The usable dataset for quantitative analysis was from 528 respondents after data cleaning and exclusion due to missing data from respondents. This response rate is consistent with the literature and shows that nonresponse bias was mitigated (Hendra & Hill, 2019).

3.2.7 Validity and Reliability

3.2.7.1 Validity

Validity describes the extent to which the research instrument, e.g., questionnaires, measures what it claims to measure, and Internal and external validity must be established in scientific research (Larsen et al., 2019). The Cronbach alpha is a standard measure of internal consistency, while composite reliability measures the internal consistency using the interrelationship between observed variables or items. In structural equation modelling, the values are generally between 0 and 1, and the composite reliability values should be between .60 to .70 to be acceptable. However, higher values showed a definite positive correlation because the variance is lacking between variables (Sarkar et al., 2020).

3.2.7.2 Reliability

The reliability of studies is a fundamental issue and concept in academics, and it makes sure that measures are consistent to ensure reliability in mixed methods research (Greener & Martelli, 2018; Ansari et al, 2016). Factor analysis was used to test the concurrent and convergent validity of the instrument, and coefficient alpha was used to test reliability (Creswell, 2014).

The reliability of instruments is critical. The Cronbach alpha was run to examine the Likert scales' internal consistency, and the overall Cronbach alpha result was 0.903. The items and scales below were removed from the instruments (Hair et al., 2015). The exploratory factors analysis EFA with a varimax rotation was conducted on all 67 items, and the factors with higher loading were taken. The validity of the study indicates that the data was consistent and stable. Validity refers to the accuracy of the measurement instrument, and in structural equation modelling, this can be assessed through; face, construct, and internal validity (Gaskin, 2016).

Construct validity is more complex and assesses the measurement tool if it measures what it implies to measure. The measure constructs validity is rigorous and uses techniques such as confirmatory factor analysis and item response theory (Greener & Martelli, 2018). The constructed validity was tested in Amos, reported in chapter six (Gaskin, 2016). Construct validity is critical in survey methods since the goal is to ensure that the respondent understands the questions and provides a candid response. Construct's validity is also sometimes referred to as measurement validity. Scholars must ensure that construct validity passes the research test (Gaskin, 2016).

In Amos, construct validity tested included convergent, discriminant, and nomological constructs. Also, convergent validity examines how accurately the scales positively correlates with different measurement scale of the same scale.

3.2.7.2 Convergent Validity

The level of correlation between multiple indicators is assessed through convergent validity to determine if the construct items agree or hold together tightly. Factor loading analysis, composite reliability (CR), and the average variance extracted (AVE) are generally used to assess convergent validity. The AVE should exceed .50 to confirm convergent validity (Gaskin, 2020).

3.2.7.3 Discriminant Validity

Discriminant validity was confirmed because the measurement model was free of redundant items not used in the hypothesis testing. Besides, the correlation between the latent exogenous variable pairs was less than .70. Moreover, the square root of the average variance extracted was higher than the correlations between constructs (Kline, 2016). The variables and constructs that did not meet the discriminant validity test did not form part of the measurement model (Henseler et al., 2015; Hair et al., 2016; Ab Hamid et al., 2017).

Fornell & Lacker (1981) developed cross-loading indicators, and the Heterotrait-monotrait (HTMT) ratio of correlation criterion was used to evaluate discriminant validity. The HTMT approach uses cross-loading factors to examine the impact of the results on the structural model. The results showed that the loading indicator assigned constructs were higher than other constructs. The conditionality was met because the loading values exceeded the 0.7 recommended threshold (Gaskin, 2020; Ab Hamid et al., 2017).

Furthermore, discriminant validity was assessed Fornell-Lacker criterion. This technique compared the square root of the average variance extracted (AVE) with the correlation of latent constructs. This model used in this thesis suggests that latent construct explained better the variance of its indicator rather than the variance of other latent constructs. The result showed that the square root of each construct's AVE had a more excellent value when compared to the correlations with other latent constructs (Gaskin, 2020).

3.2.7.4 Confirmatory Factor Analysis

The confirmatory factor and exploratory factor analysis are used together during data analysis to complement the weakness of one technique. Exploratory factor analysis generated the hypotheses through data exploration. It reduced the number of factors generated through factor rotation,

whereas confirmatory factor analysis was deployed to compare a set of hypotheses (Marsh et al., 2020).

Confirmatory factor analysis verified the structural loading of the proposed model. The model was created based on the last pattern matrix achieved during the EFA. The CFA is essential in hypothesis testing as the causal/path analysis was created based on the measurement model in the CFA (Kline, 2016). There was a good factor loading with high loading above 0.5, the minimum recommended loading (Gaskin, 2020). The factor shows convergent validity as all the variables loaded strongly on each factor. The technique used to extract all 13 factors was ML during the exploratory factor analysis (Maydeu-Olivares, 2017).

3.2.8 Quantitative Data Analysis

The causal relationships and errors associated with measurement can be estimated through structural equation modelling (SEM). The analytical framework has two main features: a latent measurement and a structural model. The former was used to measure constructs to validate the conceptual mode. The next step involves the conversion of the latent model into a structural model when the predictor of exogenous variables regressed against endogenous variables. Covariance is central to measurement and structural models (Kline, 2016; Hair et al., 2015; Gaskin, 2016).

3.4 Quantitative & Qualitative Data Sources

The thesis used primary and secondary datasets. The questionnaire, semi-structured interviews, observation, and field notes from part of the primary dataset (Schmidt et al., 2017). This dataset was from five manufacturing firms dealing primarily with FMCG sectors of the economy. Primary data sources provided firsthand information from the respondents and critical participants in the firms in the study (Cerar et al., 2021). The sampling strategy used was valid and secured that the primary data quality was robust. The dataset was cross-sectional (Carr et al., 2019).

Secondary data sources are essential in corroborating and triangulating the evidence obtained from the primary data source (Johnston, 2017). Secondary data was from the Bank of Uganda, the Uganda Revenue Authority, and other institutions in Uganda. The data presented vital trade statistics and the evolution of industry in Uganda and their performance over time. Secondary data was also critical in providing the participants' narratives from case studies and mixing the methodology as part of the research. The secondary data provided information to fill the gaps in participants' information and verify some of the information (Sarkar et al., 2020).

3.5 Unit of Analysis & Time Horizon

The unit of analysis describes the "level of aggregation of the data collected during the subsequent data analysis stage, and it can be individuals, dyads, organisations, or groups" (Barquero et al., 2019, p15.) The unit of analysis was considered while formulating the problem. The unit of analysis in this thesis is the supply chain, where institutional voids are primarily present in manufacturing industries, and most supply chains could be more effective and efficient.

Time horizon is critical to research as the impact of time can affect the results. There are two-time horizon data used in research longitudinal and cross-sectional data. Longitudinal data collection was expensive and time-constraining because data was generally collected over an extended period compared to cross-sectional data. Therefore, this scholarship opted to use cross-sectional data collected from 8-month August 2019 to March 2020. The cross-sectional data was gathered in a one-shot process with no repetitions (Shibin et al., 2018). The cross-sectional data were collected concurrently for both quantitative and semi-structured.

3.4.4 Quantitative and Qualitative Data Technique

The questionnaires were administered via email, in person using a tablet where the questionnaire was preloaded in the app, and SurveyMonkey to increase the response rate. The interviews were

recorded with the key informant. The study was suitable for the survey method given the variables under examination and the larger sample population. This thesis used a semi-structured interview to collect data from critical respondents through Zoom calls. Interviews are like an everyday conversation that we undertake, albeit they are focused on collecting credible information. In addition, the interview differs from the everyday conversation because of the rigorous processes involved to ensure the trustworthiness and credibility of the dataset obtained (Creswell, 2014).

The in-depth interviews were used to explore complex issues with limited data and evidence and the informant accounts and perceptions of the phenomenon. Therefore, an in-depth approach was required to probe the informants' views about how the weak institutional infrastructure in Uganda impacted the manufacturing industry. Good interview skills were critical to obtain significant information and archived data quality and trustworthiness in the dataset (Heiselberg & Stępińska, 2022).

In addition, access to critical informants was negotiated through emails and WhatsApp conversation, and interview dates and time via a Zoom app was set. The average interview lasted 45 minutes, and the recorded interview was converted into a format for transcribing. Ethical issues from the interview were emphasised, and participants were duly informed that voice notes from the interview would be recorded via Zoom tools and transliterated to obtain the dataset for analysis and may be stored for future use. The participation was voluntary and informed consent was obtained to record and store the voice notes. The interview setting is significant; background noise and other interruptions were avoided. The Zoom calls were scheduled during lunch breaks or weekends when key informants were off duty and provided information with minimum stress or pressures from other work schedules (Saunders et al., 2016).

The rapport during the interview was observed as it showed respect for the interviewee during the Zoom. The interviewer appeared professional during the Zoom call and background, especially when the videos were turned on. In addition, body language and appearance during the interview were critical and professional appearance was always maintained, including at weekends. Furthermore, opening Zoom calls with greetings and closing with thank you messages was the norm for every interview (Greener & Martelli, 2018).

Axial coding was used to examine the relationship between variables in grounded theory. Data coding is a laborious process in qualitative research that labels data collected from respondents. Different types of coding are used, such as axial, categorisation, data, focused, initial, opening, selective, and unitisation coding (Saldana, 2014 & Mallette & Saldaña, 2019).

3.4 Qualitative Research

3.4.2 Population and Sampling

According to Saunders et al. (2012), the research population is "the complete group members" The research population encompassed all the manufacturing firms in Uganda, which is estimated at 5490 (UMA, 2020). The purposive sampling strategy was employed to select manufacturing firms to participate in the study. There are few large manufacturing firms in Uganda, so 95 well-established manufacturing firms were the sampling frame in the research. C suite employees in the supply chain were interviewed for the purpose of the study because of their knowledge of the different supply chains that formed part of the study (Stern et al, 2020).

The research collected data from upstream (first-tier suppliers) and downstream (distributors) in the manufacturing firms. The total number of firms sampled was 95, of which 6 were upstream suppliers out of Uganda. The second approach to the population definition was the employees of the various manufacturing firms and those in the supply chain network in upstream and

downstream operations. The population universe in this category was all employees in a particular supply chain network or firm (Noveen, 2020).

3.4.5 Qualitative Data Analysis Procedures

NVivo was a vital tool in data management and qualitative data analysis. Nodes and sub-nodes in NVivo were developed for each construct for further analysis, and the different variables were mapped through notes to support data analysis. Besides, the feature for data query was used to dig deeper into the data uploaded for analysis. However, there is a grave implication in using CAQDAS in qualitative data analysis. The chief function of CAQDAS is not to analyse data but to aid the data analysis process, and the scholar must remain in control of it (Adu, 2016).

NVivo 12 data analysis process went through the following steps: import, explore, code, query, reflect, visualise, and memo. The data management process with NVivo is complicated. Qualitative studies normally produce substantial data in textual data, graphics, and videos, which is challenging to manage. Therefore, a special package such as NVivo can help scholars address this void. The preparation of qualitative data for analysis is rigorous and time-consuming. NVivo has built-into features that allow collaboration, and the interface is good (Swygart-Hobaugh, 2019).

NVivo is methodologically specific, and the strength of the software package is that it can be used with any data so long as it is text-based. Also, NVivo 12 was critical in theory building, i.e., developing explanations from data, and therefore grounded theory employed for data analysis. NVivo supports the data analysis techniques discussed in the literature (Jackson et al., 2018).

Step one in the qualitative data analysis in NVivo 12 software was transferring or uploading files into the software. The next step was to develop codes that bring together extracts related to each other to a basin called nodes. In this analysis, 12 codes were developed and linked to the factors

from the factor analysis. The next step was to develop sub-codes and extract data to build themes. This process was linked to grounded theory and thematic analysis, made more accessible because of nodes and sub-nodes in the NVivo 12 software (Adu, 2016).

The critical procedural steps involved in qualitative data analysis include, where there is data derivation through an interview, there is a need to transcribe the data. Thematic developments, categories, and ideas are critical to deriving the right inductive or deductive approach. The next stage is to code and convert data into a small unit or piece; constant comparison is critical to developing ideas and reaching data saturation. The role of language is essential to help scholars add meaning to the data, and finally, a detailed summary of data is produced in logbooks. Field notes aid scholars in explaining the data and generating theory (Greener & Martelli, 2018).

The preparation of qualitative data for analysis was vital, and the preparation usually starts with the transcription of the interview of the field notes kept by the scholar. Besides, since all the interviews are recorded via some media, the recordings need to be converted and transcription. Software is used for this purpose (Belotto, 2018). This study recorded four interviews via cell phone, later converted into media and downloaded into text. Twenty-one interviews were conducted via Zoom call, and they were recorded after the permission of the key informant and later transcribed through software in the Word document. The document was uploaded to NVivo 12 for data analysis (Gray et al., 2020).

The recording via Zoom and the cell phone was reliable, and the data conversation from media to text was completed via reputable software. Besides, the research compared the software transcription with the original interview to ensure no variations between the transcription and the original interview before the data could be uploaded to NVivo 12 for analysis (Gray et al., 2020).

In addition, NVivo was used to organise dataset, store, and retrieve the data for further analysis. NVivo usually provides thematic analysis, classifies the data, and provides outputs integrated into SPSS software. NVivo is excellent for organising and analysing prose information for scholars to gain insight into the phenomenon and interpret and construct conclusions and theories. Themes and trends are easily detectable using NVivo software (Maher et al., 2018).

3.4.6 Trustworthiness of Qualitative Research

Trustworthiness is essential, and therefore it can be enhanced by the efficacy of the interview process and boost the quality of the dataset collected. Then, the interview process must be reproducible, systematic, credible, and transparent. While the reliability and validity measures are used in quantitative research, the related concepts in qualitative research are trustworthiness, and these are verified four primary concepts to assess trustworthiness. The concepts are credibility, transferability, dependability, and confirmability of findings. The rigour in qualitative research is essential. This study implemented an audit trail of data, triangulation, quality coding procedures, categorising, confirmation of results with critical informants, and peer debriefing to ensure the trustworthiness of the findings in this thesis (Adu, 2016).

The quality of qualitative research is critical, and the researcher must pay close attention. This study was timely, rigorous, original, and relevant to the present discourse on institutional voids and how to solve them (Reuber et al, 2022). Five critical criteria assessed this research's quality: credibility, dependability, confirmability, and transferability. Firstly, the credibility of this study was assessed through a grounded theory approach used to examine the phenomenon. An in-depth interview was chosen to collect the qualitative data. In addition, observations were used to fill in the gaps in the in-depth interview (de la Croix, Barrett & Stenfors, 2018)—the selection of participants to obtain accurate data about the phenomenon. Rich appropriate dataset to respond to

the problem bearing in mind the scope, nature of the phenomenon, geography, current knowledge about the topic, research design, quality of the data, and the usefulness of the information collected, is critical to enhancing credibility (Welch et al, 2022).

For credibility to hold, the research results must be convincing and believable, and this was achieved through configuration between theory, research questions, data collection methods, a clear sampling strategy, breadth and scope of the study, volume and quality of data collected, and the analytical paradigm that match the theoretical framework (Monrouxe, & Rees, 2020).

Secondly, dependability is another way used to evaluate the trustworthiness of research. Dependability relates to the extent to which the study can be replicated in other settings and contexts. This research is dependable because there is sufficient data and information that other scholars may use the same design and procedure to conduct research but may reach a different conclusion (Stenfors et al, 2020).

Thirdly, for research to be trustworthy, it must be confirmed or verifiable, and there must be a clear link between theory, data, and findings. This research demonstrates trustworthiness in that the research can be confirmed and verified. A detailed description of the research findings and rich quotes were incorporated into the findings (Varpio et al., 2017).

Fourthly, most research is concerned with transferability and uses this to evaluate the trustworthiness of research. Transferability is primarily concerned with the transportability of findings to different settings, contexts, and populations that may be similar or dissimilar. The transferability of research can be achieved using a detailed descriptive account of the context and how it informed the research finding (Mattick et al., 2018).

Fifthly, reflexivity is critical in assessing the trustworthiness of research, and it is an iterative process of engagement with and explicating the scholar's position and the research framework.

Reflexivity was achieved by examining research participants' processes, positions, and influence (Barrett et al., 2020).

The following approach was taken: reduction in personal bias because of the knowledge of manufacturing in Uganda, reduce bias in sampling, robust data collection technique, and record-keeping, constant comparison of data collected from participants to secondary data sources, clarity in thought processes and a robust data process, verifying data with peers in the manufacturing industry in Uganda, validating all respondent interviews and data triangulation (Noble & Smith, 2015; Kreitchmann et al., 2019).

3.5 Grounded Theory

This is an inductive approach to theory building which is accomplished via the collection of raw qualitative data from primary sources, usually in the field, generally through interviews and observation. The data is typically coded after transcription to produce patterns to tell a story about the phenomena. Grounded theory is a detailed interactive method of transcribing the source's data (Dunne & Ustundag, 2020; Magnani, & Gioia, 2023).

The grounded theory incorporates methodology and methods; however, grounded theory is the theory embedded or derived from data. The grounded theory differs from grounded theory because Grounded Theory is a research strategy. Glaser and Strauss proposed grounded theory in 1967 to answer extreme positivism of social research to dispute that theory was the hallmark in solving pre-existing realities. The premise of Grounded Theory is to analyse, interpret and explain how social actors construct realities through experience (Chun Tie, Birks & Francis, 2019).

Grounded theory develops a theoretical explanation of social interaction and processes in the broader context. Grounded theory can be described as abductive, i.e., moving in between deductive

and inductive approaches. It is an emergent strategy that simultaneously allows for data collection and analysis (Khokhar et al., 2020).

3.6 Data Management Plan

Data is the lifeblood of any research undertaking. A robust data management plan was implemented to preserve the integrity and quality of this research project's data collected. Good data management practices were adopted to ensure the data was well organised, documented, easily retrievable, and valid for the research. Data sharing between the student, the investigation, and the supervisor was controlled throughout the research cycles. The data management cycle included research planning, processing, and analysing data,

Primary and secondary datasets came from manufacturing firms in Uganda. The primary data source was surveys and in-depth interviews (Kalu et al., 2019; Bishop & Kuula-Luumi, 2017 & Johnston, 2017). There are gaps in existing research, such gaps in theory application, methods, time, space, and geography about how firms respond to institutional voids or institutional absences in emerging markets. The primary data source is a critical data source to investigate the phenomenon, and the secondary data source mainly came from industries and government publications.

3.6.1 Data Quality Assurance

The quality of the dataset gathered in this study was critical to the success and integrity of the results. The procedure undertaken during data collection, cleaning, entry, analysis, digitisation, and sharing was performed so that quality was always paramount. The data assurance framework ensured that the data was complete, accessible, consistent, non-redundancy, readability, usefulness, and trust (Bai et al., 2018).

In addition, the data collection instruments, the population, measurement, recording, software used (SPSS, Amos & NVivo), and password protection of master data were done so that data quality was preserved. Also, during data preservation, the following practice: data migration from NVivo, SPSS & Amos to the writing canvas, created storage and backup in the cloud, created preservation document, and data curation during and after research was done well.

3.6.2 Data Security and Backup

The data security and backup procedures were essential to protect the research's integrity and preserve the participants' identity. The study adopted a secured Microsoft cloud platform to ensure the data and metadata are securely stored during the lifespan of the research. In addition, data is sensitive such as the personal information of research participants was protected via password, and no authorisation for the Zoom recording was given to third parties. The appropriate security measures will be taken after the research to securely store the interviews for future studies (Corti et al., 2019).

3.7 Ethical Consideration

Ethics in research is (Arifin, 2018). Ethics was built in this research from day one via design, methods, synthesis of prior studies, analysis and reporting and dataset curation (Clark-Kazak, 2019). The research was conducted ethically. Ethical forms were submitted to the UCT research ethics committee and approved, which was subsequently renewed during each year of academic registration.

The following ethical concerns were "privacy of possible and actual respondents, voluntary participation in the survey and experiments, informed consent of respondents, upholding of confidentiality of the information provided by respondents, no stress, discomfort, harm, pain, and embarrassment interview and survey" (Buchanan & Warwick, 2021, p.25).

Besides, ethical codes such as "integrity and objectivity, respect for others, avoidance of harm, privacy, voluntary participation, and the right to withdraw, informed consent", the confidentiality of data and anonymity, accurate reporting of dataset and findings, compliance with data management protocols such the user password and secured storage, ensuring the safety of participants and presentation of results and finding to my mentor all observed (Surmiak, 2018).

Good practice to void this is to have a complete reference list, intext reference every source of data, and quotations of words copied directly from other sources and following the APA style reference format. Also, using the software Turnitin can help determine the similarity index and the level of plagiarism. The present study ensured that all forms of plagiarism were avoided. Google Scholar and free-rated academic databases managed by UCT were the primary sources of information used in the literature review. The data were collected and managed ethically. The storage and protection of the personal information of participants were vital (Cox et al., 2017).

CHAPTER FOUR: QUANTITATIVE RESULTS

“Success is the result of perfection, hardwork, learning from failure, loyalty and persistence.” —

General Colin Powell.

4.1 Demographic Profile

The population's demographic profiles included education, employee experience, firm experience, firm size, firm ownership structure, and firm turnover. These variables were critical in ensuring the sample population was robust enough to answer the research questions. Two variables, i.e., firm turnover and firm size, were part of the structural equations modelling.

4.1.1 Education Profile of Respondents

Table 4.1: Profile of Respondents

Variables	Frequency	Percent
	(n)	(%)
Level of Education		
PhD	18	3.2%
Master's degree	146	25.6%
Honors degree	42	7.5%
Bachelor's degree	328	56.6%
Professional qualifications	33	5.8%
A' Level	9	1.6%
Total	571	100

Table 4.1 shows that 3.2% of respondents had PhD qualifications, 25.6% of the respondents had master's degrees, 7.4% of the respondents had honour's degrees, 56.6% of the respondents had

bachelor's degree qualifications, 5.8% of the respondents had professional qualifications, and 1.6% of the respondents had advance level qualifications.

4.1.2 The Position of Respondents in the Organization

Table 4.2: Respondent Position

Variables	Frequency	Percent
	(n)	(%)
Position		
Executives	47	8.2%
Senior Managers	233	40.8%
Middle Managers	200	35.0%
Associates	91	15.9%
Total	571	100

Table 4.2 shows that 8.2% of the respondents had executive management positions, 40.8% were in senior management, 35% were in middle management, and 15. % of the respondents were in a junior management position.

4.1.3 The Firm Size

Table 4.3: Firm Size

Variables	Frequency	Percent
	(n)	(%)
No of employees		
<50	5	.9%
50-100	40	7.0%
101-200	96	16.8%
201-300	144	25.2%
301-400	105	18.4%
401-500	28	4.9%
>500	153	26.8%
Total	571	100

Table 4.3, only .9% of the firms had less than 50 employees, 7% had between 50-100 employees, 16.8% of the firms had between 101-200 employees, 25.2% of the firms had between 201-300 employees, 18.4% of the firms had between 301-400, 4.9% of the firms had between 401-500 employees and 26.8% of the firms have more than 26.6%.

4.1.4 Employee Experience

Table 4.4: Employee Experience

Variables	Frequency	Percent
	(n)	(%)
Employees		
Experience(years)		
<4	139	24.3%
5-9	233	40.9%
10-14	138	24.2%
15-19	41	7.2%
>20	20	2.5%
Total	571	100

Table 4.4 shows that 24.3% of the respondents had less than <4 years. 40.8% of the respondents had 5-9 years of work experience. 24.2% of the respondents had 10-14 years of work experience. 7.2% of the respondents had between 15-19 years of work experience, and 3.5% had more than 20 years of work experience.

4.1.5 The Firm Experience in Manufacturing Industry

Table 4.5: Firm Experience

Variables	Frequency	Percent
	(n)	(%)
Firm Experience(years)		
<4	5	.9%
5-10	35	6.1%
11-20	193	33.8%
>20	388	59.2%
Total	571	100

Table 4.5 shows that .9% of the firms had been in operations less than four years, 6.1% of the firms had between 5-10 years in operations, 33.8% of the firms had between 11-20 years in operations, and 59.2% of the firm had over 20 years operational experience.

4.1.6 Firm Ownership Structure in Manufacturing Industry

Table 4.6: Firm Ownership Structure

Variables	Frequency	Percent
	(n)	(%)
Ownership Structure		
Family Owned	34	6.0%
MNC	120	21.1%
Limited Liability Co.	366	64.1
SoE	1	.2%
Business Groups	50	8.8%
Total	571	100

Table 4.6 shows that 6% of the firms were family-owned businesses, 21% of the firms were multinational corporations, 64.1% were Limited liability companies, .2% were state-owned, and 8.8% were business groups.

4.2.7 Firm Turnover

Table 4.7: Firm Turnover

Variables	Frequency	Percent
	(n)	(%)
Firm Revenue (UGX)		
<100m	5	.9%
101-500million	27	4.7%
501-1billion	28	4.9%
1-5billion	63	11%
5-10billion	361	63.2%
>10billion	87	15.2%
Total	571	100

Table 4.7 indicates that .09% of the firms had less than 100 million Uganda shillings in revenue. 4.7% of the firms had between 101-500 million Uganda shilling in revenue. While 4.9% of the firms had between 501-1 billion Uganda shillings in revenue. 11% of the firms had 1-5 billion Uganda shilling in revenue. 63% of the firms had between 5-10 billion shillings in revenue, and 15.2% of the respondents had more than 10 billion in revenue.

4.3 Hypothesis Testing Procedures

The proposed hypothesis was tested via a structured model described in Figure 4.2 below. The first step was to screen the data collected to ensure it was appropriate. The second step was to execute the exploratory factor analysis to reduce the items. The third step was to perform a confirmatory

factor analysis to enhance the reliability and validation of the dataset, and the fourth and final step was to perform the casual analysis (Gaskin, 2020).

4.3.1 Exploratory Factor Analysis

Factor analysis is over one hundred years old and dates to Pearson and Spearman, and the chief purpose was to explore the data to examine the relationships. Factor analysis is considered a multivariate statistical technique because its primary purpose was to reduce items on the measurement scale; spot and evaluate the uni-dimensionality in the conceptual model; Evaluating the construct validity of a scale, test, or instrument; Construct parsimonious (simple) dataset analysis and interpretations of results; eliminated multicollinearity issues in the dataset and; Design a robust theoretical construct applied to prove/disprove proposed theories; five necessary procedures to be followed in the exploratory factor analysis are (1) establish the suitability of the dataset for EFA, (2) decide on the methods of extraction (Maximum Likelihood, (3) determine criteria for data extraction (eigenvalues), (4) select the rotation methods (Promax) (5) interpretation of the results (Watkins, 2018).

Table 4.8: The Kaiser-Meyer-Olkin (KMO) & Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.793
Bartlett's Test of Sphericity	Approx. Chi-Square	8648.265
	df	903
	Sign	.000

Table 4.8 shows that Kaiser -Meyer Olkin's (KMO) assessment of the sampling tolerability was .793. The sample used in the study was 571 respondents, and according to Kline (2016) and Gaskin (2020), structural equation modelling is a large sample of techniques. The rule of thumb is that>

200 samples are adequate for an SEM analysis, and the threshold above .6 is acceptable for KMO to indicate the sample was adequate. The result shows that the KMO & Bartlett's Test was significant, indicating that the null hypothesis about the uncorrelated variable must be rejected (Memon et al., 2017). The data is, therefore, appropriate for factor analysis.

Table 4.9: Factor Correlation Matrix

Factor	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.000												
2	.378	1.000											
3	.019	.317	1.000										
4	.339	.283	.069	1.000									
5	.144	.115	.170	.141	1.000								
6	.000	.364	.311	.182	.135	1.000							
7	.159	.153	.249	.079	.188	.199	1.000						
8	.454	.394	.163	.365	.185	.113	.245	1.000					
9	.011	.161	.044	.056	.123	.101	.171	.088	1.000				
10	-.007	.181	.135	.151	.040	.323	.244	.123	.177	1.000			
11	.074	-.035	.160	.027	.232	.027	.349	.147	.212	.121	1.000		
12	.438	.561	.132	.421	.009	.413	.097	.420	.022	.305	-.058	1.000	
13	.286	.076	-.028	.329	.124	-.073	.011	.277	.073	-.041	.157	.135	1.000

Notes 1: The extraction technique used was the Maximum Likelihood. The rotation method was Promax with Kaiser Normalization.

Table 4.9 displays the correlation matrix of the exploratory factor analysis, and the results indicate that most of the correlation is not above .70 for the variables in the analysis. The primary goal of this operation was to ensure that the factors were not highly correlated, and the table shows no discriminant validity in the dataset used.

4.3.2 The Confirmatory Factor Analysis

The confirmatory factor and exploratory factor analysis are used together during data analysis to complement the weakness of one technique. Exploratory factor analysis generated the hypotheses through data exploration. It reduced the number of factors generated through factor rotation, whereas confirmatory factor analysis was deployed to compare a set of hypotheses (Marsh et al 2020).

Confirmatory factor analysis verified the structural loading of the proposed model. The model was created based on the last pattern matrix achieved during the EFA. The CFA is essential in hypothesis testing as the causal/path analysis was created based on the measurement model in the CFA (Kline, 2016).

Table 4.10: Measurement Mode Fit Indicators

Name of Category	Name of Index	Name of Index	Acceptable		
			Threshold	Results	Interpretation
Absolute Fit	Chisq	Discrepancy chi square	P > 0.05	.000	Not significant
		Root Mean Square of Error Approximation	<0.08	.060	Significant
	RMSEA	Goodness of Fit	>.90	.845	Not significant
Incremental Fit	GFI	Adjusted Goodness of Fit	>.90	.809	Acceptable
	AGFI	Comparative Fit Index	>.90	.813	Marginal
	CFI	Tucker-Lewis Fit Index	>.90	.789	Acceptable
	TLI	Normed Fit Index	>.90	.748	Not acceptable
Parsimonious Fit	NFI	Chi-Square/Degree of Freedom	<5.0	3.030	Acceptable

Table 4.10 displays the results from the measurement model and interpretation thereof. The

statistics were acceptable in most of the critical indicators. There was a modification in the measurement model to improve model fit for absolute fit, incremental fit, and parsimonious fit before the final hypotheses were tested and confirmed (Gaskin, 2020).

4.3.3 Model Identification

There were no model identification issues/problems in the measurement and the structural model. There are three elements in structural equation model identification. Firstly, the model degree of freedom should be the latest zero. Secondly, all the latent variables and their residual terms must be assigned to a scale with constraints of 1. Thirdly, all the latent variables must have at least three indicators (Kline, 2016). The initial model and the adopted model did not suffer any identification issues.

4.3.3.1 Model Fit Indicators

The measurement and structural model fit indices "show the degree to which a pattern of fixed and free parameters that are specified in the model is consistent with the pattern of variance and covariance from the set of observed datasets." The fit indices for a model include the chi-square, CFI, MNFI, and RMSEA. The chief goal of estimation is to obtain the numerical values for the free parameters (Gaskin, 2020; p.19).

4.3.3.2 The Structural Model

The structural model represents the theoretical/conceptual model initially proposed in the research to examine the relationship between the constructs of interest: institutional voids, firm strategy, supply chain innovations, and firm performance. The path analysis in the model was used to test the hypotheses' relationships between the above constructs (Sardeshmukh & Vandenberg, 2017). The computation of the default model resulted in 21 distinct moments, 17 distinct parameters to be estimated, and 4 degrees of freedom (21-17). The minimum was achieved in the results (default

model) with a chi-square of 16.037, 4 degrees of freedom, and a *p-value* of .003. The model fit indicators are presented below. These results were significant, and therefore the hypothesised path analysis could be tested after the achievement of model fit.

There were no proposed modifications in the initial model because the modification indices in Amos did not show any alteration to covariance or variance. Although the model was identified, their degree of freedom test statistics exceeded the recommended threshold of 3. In resolving this problem, the model had to be prespecified to achieve an excellent model fit (Kline, 2016).

Figure 4.1: Initial Structural Model

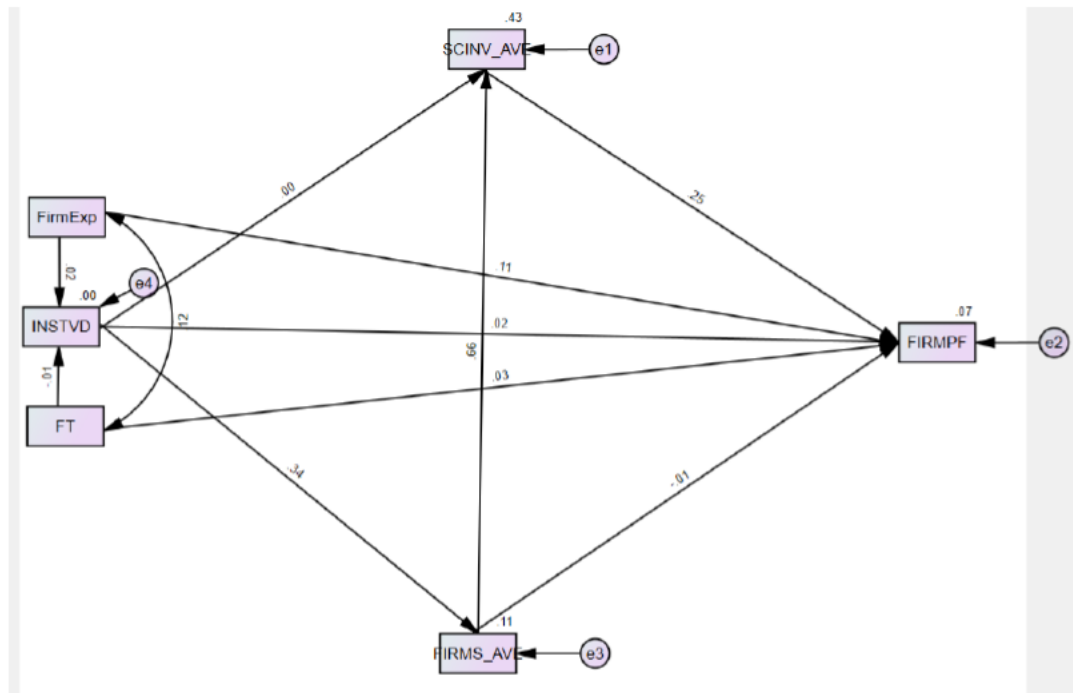


Figure 4.1 shows the initial structural model-free measurement before adjustment. This model was identified, and the statistics are presented in Table 4.12 below.

The model fit statistics below show the fit parameters of the initial model compared against the thresholds developed by Kline (2016, Gaskin, 2020 and Hu & Bentler (1999). The model was

identified, and all but one indicator did not meet the minimum requirement, as displayed in Table 4.11 below.

Table 4.11: Initial Model Fit Indicators

Measure	Estimate	Threshold	Interpretation
CMIN	16.037	--	--
DF	4.000	--	--
CMIN/DF	4.009	Between 1 and 3	Acceptable
CFI	0.973	>0.95	Excellent
SRMR	0.050	<0.08	Excellent
RMSEA	0.073	<0.06	Acceptable
PClose	0.129	>0.05	Excellent

Table 4.11 show that the initial model had a CFI of .973, SRMR .05, RMSEA .073, and PClose .129. It should be noted that the degree of freedom and RMSEA in the initial model were acceptable, while CFI, PClose, and SRMR were excellent. Based on these figures was a need to improve the model.

Table 4.12: Threshold for Model Fit Indicators

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
PClose	<0.01	<0.05	>0.05

Table 4.12 shows the model fit threshold. According to Hu and Bentler (1999), Kline (2016) and Gaskin (2020), the "Cut-off Criteria for Fit Indexes in Covariance Structure Analysis are Conventional Criteria Versus New Alternatives"). The recommended combinations of measures of CFI>0.95 and SRMR<0.08, and RMSEA<0.06 provide further evidence about how well the data fits into the theory, and these must be perfectly done before testing any hypothesis (Marcoulides et al., 2020).

4.4 Research Hypotheses Results

The structural equation model is a robust technique for hypothesis testing. Based on theory, the hypotheses were developed a priori and tested, and the results are summarised in the table below. The fundamental constructs of interest were institutional voids, supply chain innovation, firm strategy, and firm performance. Firm turnover and firm experience were used as control variables for institutional voids and to determine hypothesised relationships with other constructs such as firm strategy, supply chain innovations, and firm performance (Acar et al.,2017; Shirodkar & Konara, 2017; Bernerth et al., 2018).

4.4.1 Institutional Void Effect on Supply Chain Innovations

H1: Severe institutional voids result in supply chain innovations to ameliorate institutional voids in emerging markets.

The empirical results do not support the hypothesis that institutional voids directly influence supply chain innovations. The path analysis showed no significant direct relationship between institutional void and supply chain innovations in emerging markets.

Table 4.13: H1 Theorised Relationship betewwn Institutional Voids & Supply Chain Innovations.

	Predicator		Estimate	S. E	C.R	P	Result
SCI	<---	Institutional Voids	-0.001	.021	-.034	.973	Not Sig

Table 4.13 shows that the hypothesis result was not significant. The estimate was -0.001, S.E. was .021, C.R. was -.034 and a *p-value* of .973.

4.4.2 Supply Chain Innovations Effect on Firm Performance

H2: Institutional voids present significant opportunities for new industries, especially in the supply chains to emerge and fill these voids.

The empirical results support the hypothesis that institutional voids directly influence supply chain innovations. The path analysis showed a significant direct relationship between supply chain innovation and firm performance in emerging markets.

Table 4.14: H2 Theorised Relationship between Supply Chain Innovations & Firm Performance.

Predicator		Estimate	S. E	C.R	P	Result
Firm	<--- Supply chain	.415	.090	4.623	***	Sig
Performance	innovation					

Table 4.14 shows that the hypothesis result was significant. The estimate was .415, S.E. was .090, C.R. was 4.623 and a *p-value* of ***.

4.4.3 Institutional Voids Effect on Firm Performance

H3: Manufacturing firms develop supply chain strategies to respond to institutional voids in emerging markets.

The empirical evidence did not support the hypothesis that institutional voids directly influence firm performance. The path analysis showed no significant direct relationship between institutional void and firm performance in emerging markets.

Table 4.15: H3 Theorised Relationship between Institutional Voids & Firm Performance.

Predictor		Estimate	S. E	C.R	P	Result
Firm	<--- Institutional	.019	.046	.407	.648	Not Sig
Performance	Void					

Table 4.15 shows that the hypothesis result was not significant. The estimate was .019, S.E. was .046, C.R. was .407 and a *p-value* of .648.

4.4.4 Institutional Voids Effect on Firm Strategy

H4: Institutional voids cause manufacturing firms to develop innovations along their supply chains.

The empirical evidence supports the hypothesis that institutional voids directly influence firm strategy. The path analysis showed no significant direct relationship between institutional void and firm strategy in emerging markets.

Table 4.16: H4 Theorised Relationship between Institutional Void & Firm Strategy.

	Predicator		Estimate	S. E	C.R	P	Result
Firm	<---	Institutional	.256	.030	8.575	***	Sig
Strategy		Void					

Table 4.16 shows that the hypothesis result was significant. The estimate was .256, S.E. was .030, C.R. was 8.575 and a significant *p-value* of ***.

4.4.5 Firm Strategy Effects on Firm Performance

H5: Firms' strategy and supply chain innovations are antecedents to firm performance in emerging markets.

The empirical evidence does not support the hypothesis that firm strategy directly influences firm performance. The path analysis showed no significant direct relationship between institutional void and supply chain innovations in emerging markets.

Table 4.17: H5 Theorised Relationship between Firm Strategy Directly & Firm Performance.

Predictor			Estimate	S. E	C.R	P	Result
Firm Performance	<---	Firm Strategy	-.015	.078	-.199	.842	Not Sig

Table 4.17 shows that the hypothesis result was not significant. The estimate was -.015, S.E. was .078, C.R. was -.199 and a *p-value* of .842.

4.5.6 Firm Strategy Effect on Supply Chain Innovations

H6: Firm strategy directly influences supply chain innovations in emerging markets.

The empirical results did support the hypothesis that firm strategy has a direct influence on supply chain innovations. The path analysis showed a significant direct relationship between firm strategy and supply chain innovations in emerging markets.

Table 4.18: H6 Theorised Relationship between Firm Strategy & Supply Chain Innovations.

Predicator			Estimate	S. E	C.R	P	Result
Supply Chain Innovation	<---	Firm Strategy	.548	.028	19.858	***	Sig

Table 4.18 shows that the hypothesis result was significant. The estimate was .548, S.E. was .028, C.R. was 19.858 and a *p-value* of ***. The result shows a direct causal relationship between firm strategy and supply chain innovation.

Table 4.19: Summary of Hypotheses Results

Hypotheses	Predictor	Outcome	Std Beta	Results
H4	Institutional Void	Firm Strategy	.340 ***	supported
H7	Firm Turnover	Firm Strategy	.039	Not support
H6	Firm Strategy	Supply Chain Innovation	.657 ***	support
H1	Institutional Void	Supply Chain Innovations	-.001	Not supported
H3	Institutional Void	Firm Performance	.017	Not supported
H2	Supply chain innovation	Firm Performance	.247 ***	Supported
H5	Firm strategy	Firm Performance	-.011	Not supported
H8	Firm Experience	Firm Performance	.111 **	Supported
H9	Firm Turnover	Firm Performance	.033	Not supported

Table 4.19 shows that four hypotheses (*H2*, *H4*, *H6* & *H8*) were supported with a beta of .247, .340, .657, and .111. The hypothesis is presented in detail in the proceeding pages. The path analysis was represented in the conceptual model with standardised estimates. Overall, the result in the table supports the premise that firm strategy and supply chain innovations are pathways to improving institutional voids and firm performance. The causal relationship between institutional voids and firm strategy, firm strategy and supply chain innovations, and supply chain innovations and firm performance was established.

Table 4.20: Regression Weights for Default Hypothesis

Predicators		Estimate	S.E.	C.R.	P	Label
Institutional Voids <---	Firm Turnover	-.012	.035	-.336	.737	par_9
Institutional Voids <---	Firm Experience	.024	.053	.454	.650	par_10
Firm Strategy <---	Institutional Void	.256	.030	8.574	***	par_5
SCI <---	Firm Strategy	.548	.028	19.585	***	par_2
SCI <---	Institutional Voids	-.001	.021	-.034	.973	par_6
Firm Performance <---	Institutional Voids	.019	.046	.407	.684	par_1
Firm performance <---	SCI	.415	.090	4.623	***	par_3
Firm Performance <---	Firm Strategy	-.015	.078	-.199	.842	par_4
Firm Performance <---	Firm Experience	.147	.054	2.722	.006	par_7
Firm Performance <---	Firm Turnover	.029	.036	.803	.422	par_8

Table 4.20 shows that the hypothesis result was significant for the three paths analysis, while the results for the seven-path analyses were not significant. The results are based on two control variables (firm turnover and firm experience).

4.6 Mediation Path Analysis

The main hypotheses were the mediation effects of two variables, i.e., firm strategy and supply chain, on how institutional voids influence firm performance in emerging markets. The effects of institutional void on a firm's performance were adverse and, therefore, the relationships between institutional voids and firm performance. The indirect effects of the variables are explained in Table 4.20.

H7: Firm strategy mediates the relationship between institutional voids and supply chain innovations.

Table: 4.21: Indirect Relationship between Firm Strategy, Supply Chain Innovations, and Firm Performance

Indirect Path	Unstandardized Estimate	Upper Bound	Lower Bound	P- Value	Standardized Estimates
Firm Strategy --> Supply Chain Innovation --> Firm Performance	0.228	0.158	0.314	0.001	0.163***

Table 4.21 shows the indirect relationship between firm strategy, supply chain innovations, and firm performance. The result was significant, with a *p-value* of 0.163***.

H8: Supply chain innovations mediates the relationship between firm strategy and firm performance.

Table 4.22: Theorised Indirect relationship between Institutional Voids Firm Strategy, Supply Chain Innovations

Indirect Path	Unstandardized Value	Lower Bound	Upper Bound	P- Value	Standardized Value
Institutional Voids --> Firm Strategy --> Supply Chain Innovation --> Firm Performance	0.058	0.037	0.090	0.000	0.222***

Table 4.22 shows the indirect relationship between institutional voids, firm strategy, supply chain innovations, and firm performance. The result was significant, with a *p-value* of 0.222***.

4.6.1 Indirect Effects

In mediation, the mediator impacts why and how the independent variable influences the dependent variables. The independent variable in the analysis was institutional void, and the dependent variable was firm performance, with two mediation variables of firm strategy and supply chain innovations. The analysis used two control variables, i.e., turnover and the firm experience (Hair et al, 2017).

H9: Institutional voids in emerging markets impact on firm performance

Table 6.23: Theorised Indirect Relationship between Institutional Voids, Firm Strategy, Supply Chain Innovations, and Firm Performance

Indirect Path	Unstandardized Value	Lower Bound	Upper Bound	P-Value	Standardized Value
Institutional Voids --> Firm Strategy --> Supply Chain Innovation --> Firm Performance	0.058	0.037	0.090	0.000	0.222***

Table 4.23 shows that supply chain innovation and firm strategy mediate the relationship between institutional voids and firm performance. The result was significant, with a *p-value* of 0.222***.

4.6.2 Multigroup Structural Model

The initial model had some defects in the parameters, and therefore the need to re-specify the model to improve model fit is a prerequisite for testing any hypothesis. The re-specification was based on the theoretical/conceptual framework adopted for the scholarships.

Figure 4.2: Final Multigroup Model

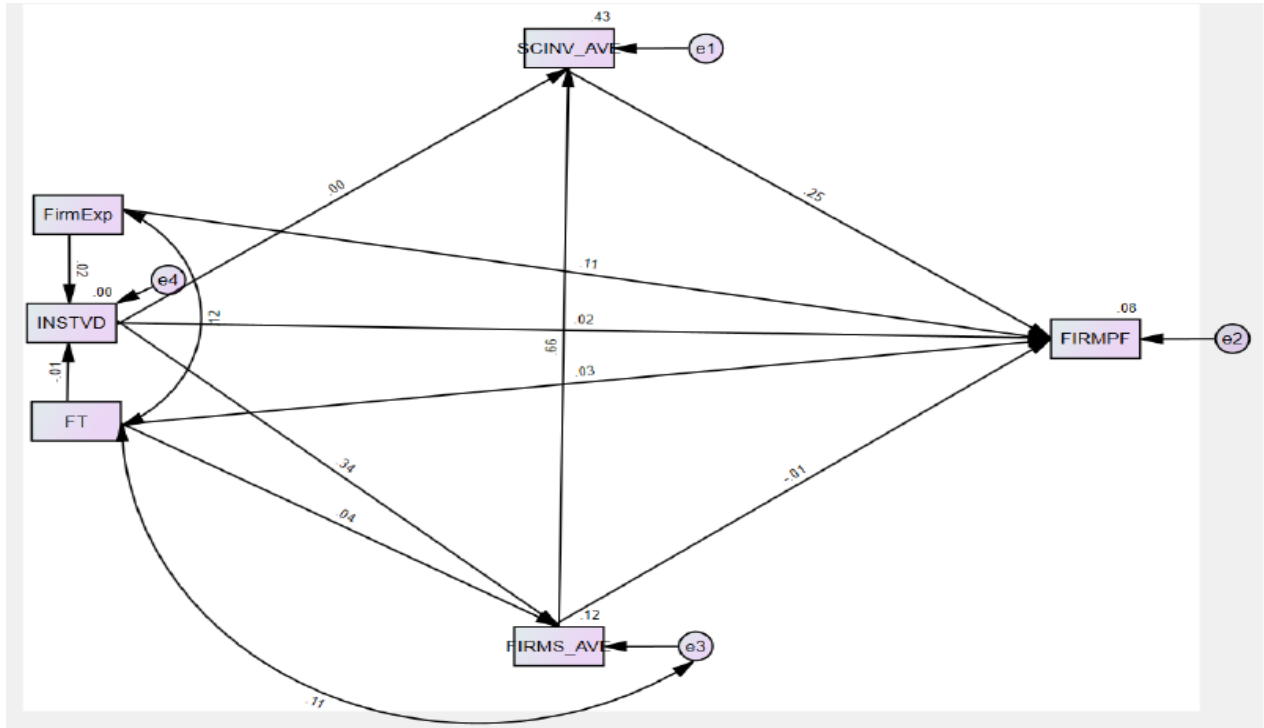


Figure 4.2 shows the standardised estimates of the final model path analysis. The hypothesis test was carried out using this model after the model fit was achieved. The test statistics from the model are presented in the table below. The model was identified, and the fit indices were excellent.

Table: 4.24: Multigroup Model Fit Indices

Measure	Estimate	Threshold	Interpretation
CMIN	2.455	--	--
DF	2.000	--	--
CMIN/DF	1.228	Between 1 and 3	Excellent
CFI	0.999	>0.95	Excellent
SRMR	0.012	<0.08	Excellent
RMSEA	0.020	<0.06	Excellent
PClose	0.675	>0.05	Excellent

Table 4.24 indicates that CMIN/DF, CFI, SRMR, RMSEA, and PClose achieved excellent model fit. Therefore, the hypothesis confirmation or rejection was reliable because of the model fit measure reported above.

Table 4.25 Threshold for Multigroup Model Fit

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
PClose	<0.01	<0.05	>0.05

Table 4.25 indicates the threshold for multigroup model fit for CMIN/DF, CFI, SRMR, RMSEA & PClose. Indicators are measured using Terrible, Acceptable and Excellent (Gaskin, 2020).

4.6.3 Multigroup Hypothesis

Multigroup hypotheses were developed to test the relationships between the different groups using the firm ownership structure of multinational corporations (MNC), business groups, and family businesses. The multigroup analysis sought to find the effect of institutional voids on the different types of firms (Schroeder & Gnambs, 2018).

H10: Firm ownership, size, age, and location determine how firms respond to institutional voids in emerging markets.

Table: 4.26: Multigroup Model Fit Indicators

Measure	Estimate	Threshold	Interpretation
CMIN	6.459	--	--
DF	6.000	--	--
CMIN/DF	1.076	Between 1 and 3	Excellent
CFI	0.997	>0.95	Excellent
SRMR	0.034	<0.08	Excellent
RMSEA	0.020	<0.06	Excellent
PClose	0.654	>0.05	Excellent

Table 4.26 shows that the model fit was excellent for all the parameters. The next step was to test the difference between the groups to see if there was empirical evidence to support that all the paths were the same for the multigroup analysis.

Table 4.27: Model Fit Thresholds

Measure	Terrible	Acceptable	Excellent
CMIN/DF	> 5	> 3	> 1
CFI	<0.90	<0.95	>0.95
SRMR	>0.10	>0.08	<0.08
RMSEA	>0.08	>0.06	<0.06
PClose	<0.01	<0.05	>0.05

Table 4.27 provide thresholds for multigroup indicators Source: Hu and Bentler (1999), Kline (2016) and (Gaskin & Lim, 2016).

Figure: 4:3 Multigroup Model Multinational Corporation

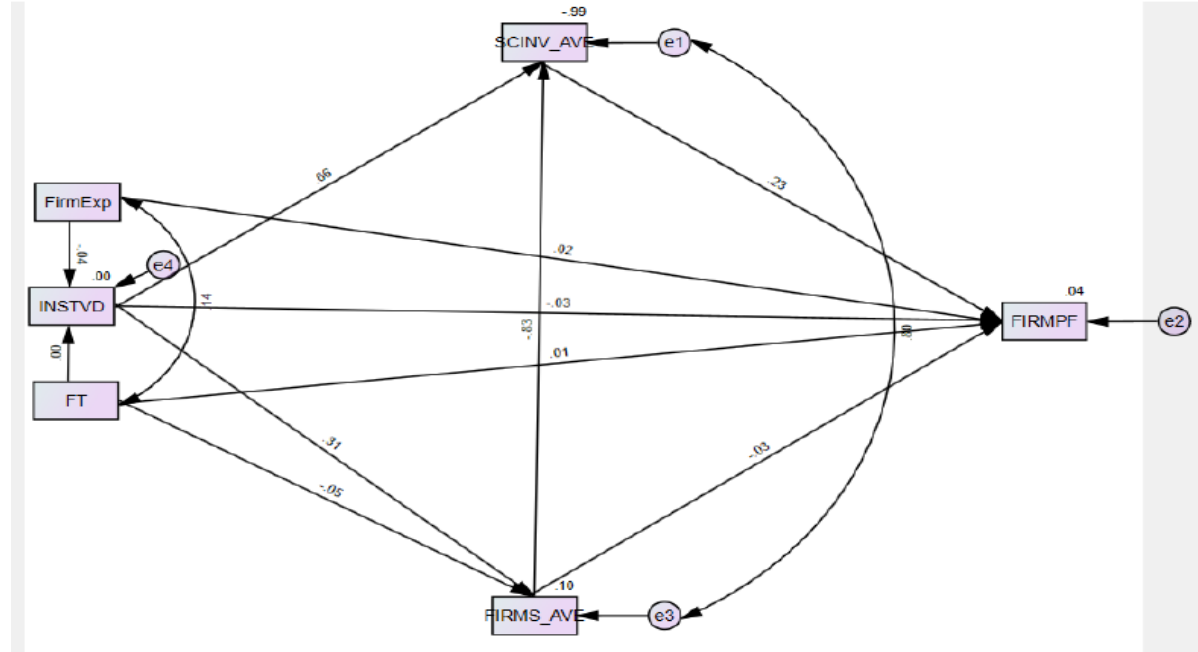


Figure 4.3 shows the standardised estimates for the multigroup model used to test the hypothesis between the relationships between variables. The structural model was identified, and the model fit was above the required thresholds before testing any causality.

Table 4.28: Regression Weights (MNC-Unconstrained Model).

	Predicators		Estimate	S.E.	C.R.	P	Label
Institutional Voids	<---	Firm Turnover	-.179	.117	-1.526	.127	b9_1
Institutional Voids	<---	Firm Experience	.006	.151	.038	.970	b10_1
Firm Strategy	<---	Institutional Voids	.118	.040	2.945	.003	b5_1
Firm Strategy	<---	Firm Turnover	-.026	.051	-.517	.605	b11_1
SCI	<---	Firm Strategy	-1.698	4.420	-.384	.701	b2_1
SCI	<---	Firm Strategy	.373	.541	.689	.491	b6_1
Firm Performance	<---	Firm Performance	.104	.108	.962	.336	b1_1
Firm Performance	<---	SCI	.664	.243	2.730	.006	b3_1
Firm Performance	<---	Firm Strategy	-.430	.247	-1.740	.082	b4_1
Firm Performance	<---	Firm Experience	-.014	.165	-.087	.931	b7_1
Firm Performance	<---	Firm Turnover	-.070	.130	-.541	.588	b8_1

Table 4.28 shows the statistics for MNC's unconstrained model. The *p-value* for institutional voids and firm strategy was significant, and supply chain innovation and firm performance were also significant. These results show that multinational firms in Uganda deployed various firm strategies, such local supplier development, to respond to the burden of institutional voids. Similarly, supply chain innovations significantly impact firm performance for multinational manufacturing firms such as Coca-Cola and Diageo, which operate in Uganda.

Table 4.29: Standardised Regression Weights: (MNC - Unconstrained)

Predicators			Estimate
Institutional Voids	<---	Firm Turnover	-.140
Institutional Voids	<---	Firm Experience	.003
Firm Strategy	<---	Institutional Voids	.263
Firm Strategy	<---	Firm Turnover	-.046
Supply Chain Innovation	<---	Firm Strategy	-1.604
Supply Chain Innovation	<---	Institutional Voids	.786
Firm Performance	<---	Firm Institutional Voids	.092
Firm Performance	<---	Supply Chain Innovations	.280
Firm Performance	<---	Firm Strategy	-.171
Firm Performance	<---	Firm Experience	-.008
Firm Performance	<---	Firm Turnover	-.049

Table 4.29 show the regression weights for MNC unconstrained model. This model shows that firm experience impacts how MNC firms in Uganda respond to institutional voids.

Figure 4.4: Multigroup Unconstrained Model Family-Owned Business

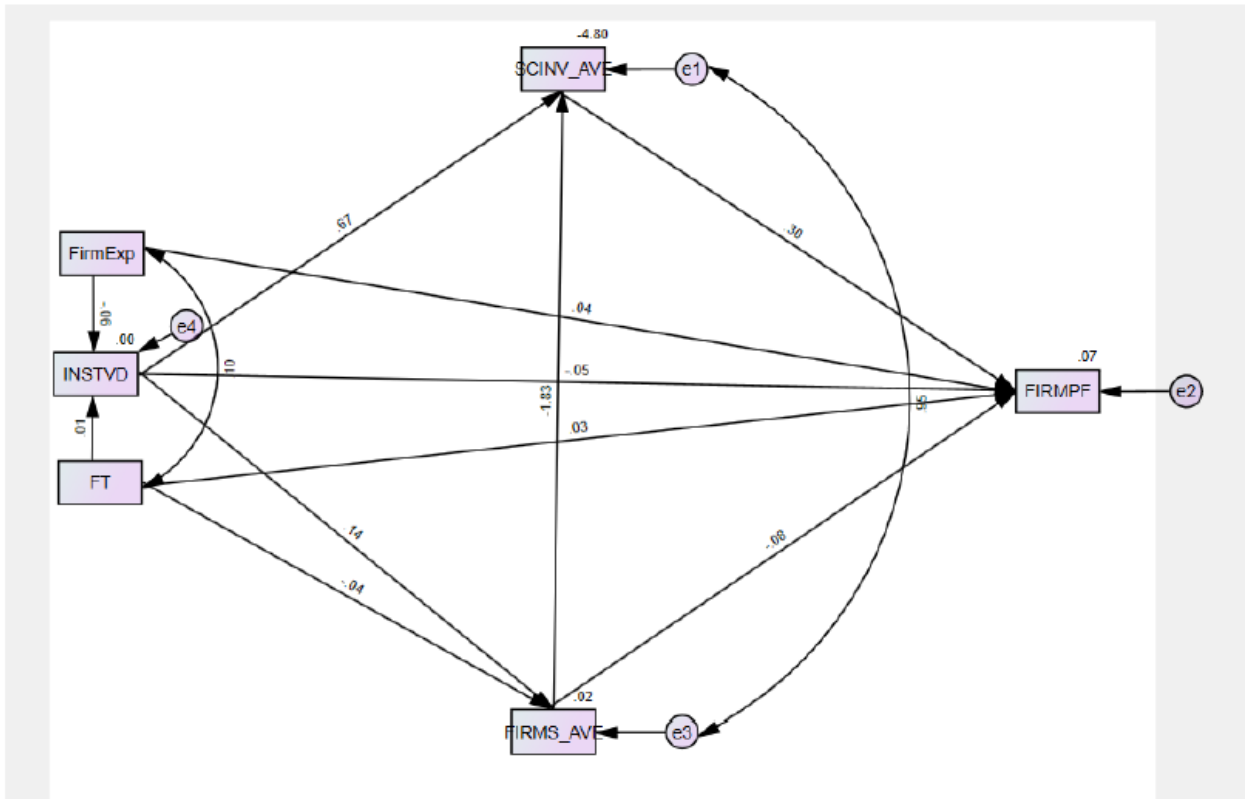


Figure 4.4 shows the unconstrained model for an own family business. This was used to test the hypothesis. The structural model was identified, and the model fit test statistics to show the relationships among variables. This is a free model and measures all parameters.

Table 4.30 Regression Weights: (FAMO - Unconstrained)

Predicators			Estimate	S.E.	C.R.	P	Label
Institutional Voids	<---	Firm Turnover	.082	.121	.678	.497	b9_2
Institutional Voids	<---	Firm Experience	-.365	.184	-1.987	.047	b10_2
Firm Strategy	<---	Institutional	.832	.115	7.229	***	b5_2
Firm Strategy	<---	Firm Turnover	.025	.085	.290	.772	b11_2
SCI	<---	Firm Strategy	.701	2.649	.265	.791	b2_2
SC	<---	Firm Strategy	-.178	2.214	-.081	.936	b6_2
Firm Performance	<---	Institutional Voids	-.625	.166	-3.775	***	b1_2
Firm Performance	<---	SCI	.900	.256	3.514	***	b3_2
Firm Performance	<---	Firm Strategy	.410	.146	2.802	.005	b4_2
Firm Performance	<---	Firm Experience	.512	.112	4.592	***	b7_2
Firm Performance	<---	FT	.104	.070	1.489	.136	b8_2

Table 4.30 shows the regression weights for family managed organisations (FAMO) unconstrained model. The *p-value* was significant for four paths: firm experience to firm performance, supply chain innovations to firm performance, institutional voids to firm performance, and institutional voids to firm strategy. These results show that, for family-owned businesses operating in the manufacturing sector in Uganda, because of institutional voids, family-owned businesses also deploy some form of strategies such as building relationships both formally and informally to combat institutional voids.

In addition, for family-owned firms, institutional voids impact firm performance. Family firms also use innovations in their supply chains to improve firm performance. The firm strategy implemented by family-owned businesses significantly impacted firms' performance. Lastly, the

number of years of experience for family-owned businesses impacted their performance and how they can navigate institutional voids. An example is Nice House of Plastics, a family-owned business in Uganda since the 1970s. The business has grown over the years and diversified into other sectors of the economy, such as dairy farming.

Table 4.31: Standardised Regression Weights: (FAMO - Unconstrained)

Predictors			Estimate
Institutional Voids	<---	Firm Turnover	.111
Institutional Voids	<---	Firm Experience	-.326
Firm Strategy	<---	Institutional Voids	.780
Firm Strategy	<---	Firm Turnover	.031
SCI	<---	Firm Strategy	1.347
SCI	<---	Institutional Voids	-.321
Firm Performance	<---	Institutional Voids	-.711
Firm Performance	<---	SCI	.569
Firm Performance	<---	Firm Performance	.498
Firm Performance	<---	Firm Experience	.519
Firm Performance	<---	Firm Turnover	.160

Table 4.31 shows the standardised regression weights for FAMO unconstrained model and estimates. These estimates indicate five significant relationships explained above. The positive influence of firm strategy on institutional voids, the positive influence of supply chain innovations on firm performance, the negative impact of institutional voids on firm performance and the positive influence of firm experience on firm performance for a family-owned business engaged in the manufacturing sector in Uganda.

Figure 4.5: Multigroup Unconstrained Model Business Group

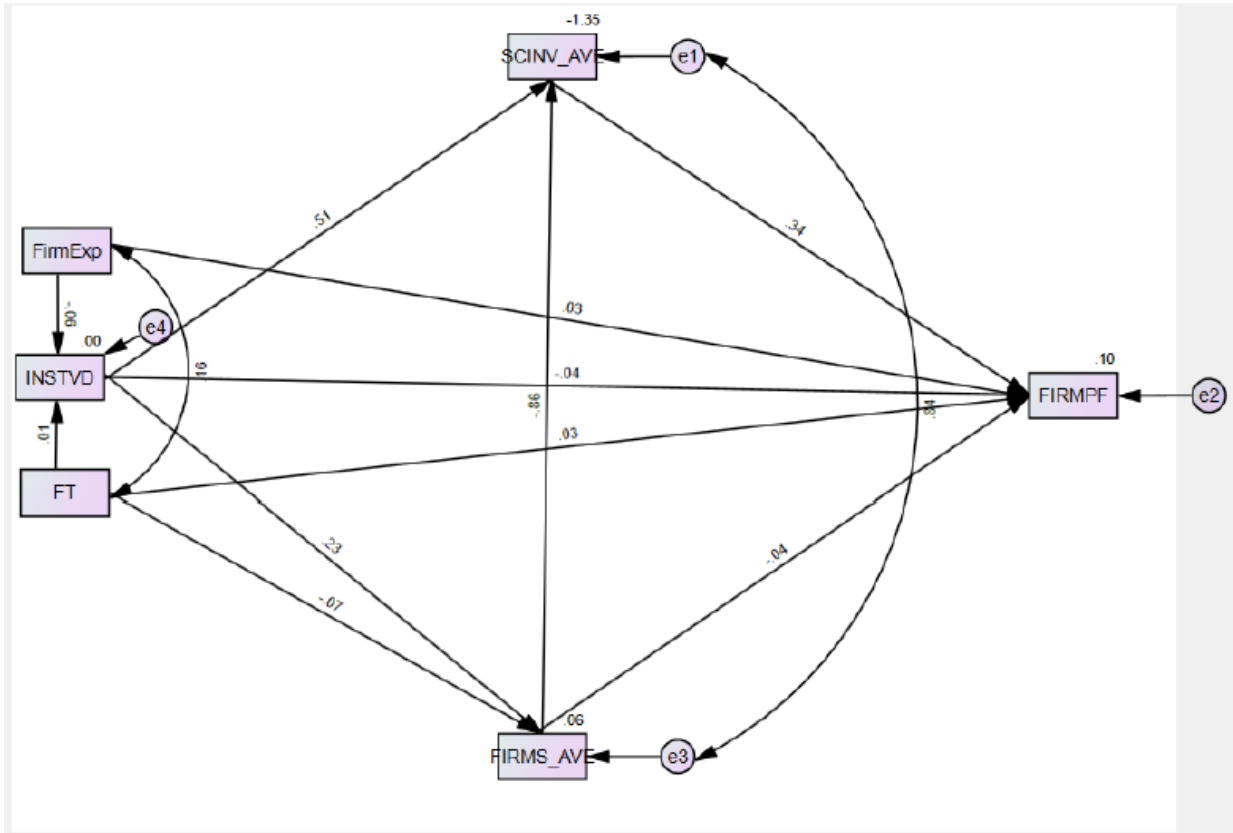


Figure 4.5 shows the multigroup unconstrained model business group. The model measures all free parameters in the business group structural model. The results indicate that the impact of institutional voids on business group firms in Uganda was insignificant. The result must be interpreted with a cause because of the low AVE in some of the constructs (Gaskin, 2020).

Table 4.32: Regression Weights: (BIZG - Unconstrained)

Predictors			Estimate	S.E.	C.R.	P	Label
Institutional Voids	<---	Firm Turnover	.083	.098	.847	.397	b9_3
Institutional Voids	<---	Firm Experience	.091	.166	.551	.581	b10_3
Firm Strategy	<---	Institutional Voids	.058	.084	.695	.487	b5_3
Firm Strategy	<---	Firm Turnover	-.048	.058	-.836	.403	b11_3
SCI	<---	Firm Strategy	-.344	1.462	-.236	.814	b2_3
SCI	<---	Institutional Voids	.180	.124	1.446	.148	b6_3
Firm Performance	<---	Institutional Voids	-.062	.126	-.495	.621	b1_3
Firm Performance	<---	SCI	.358	.230	1.560	.119	b3_3
Firm Performance	<---	Firm Strategy	.154	.241	.638	.524	b4_3
Firm Performance	<---	Firm Experience	-.371	.147	-2.526	.012	b7_3
Firm Performance	<---	Firm Turnover	.016	.086	.189	.850	b8_3

Table 4.32 shows the regression weights for the business group model. The p-value was not significant for most of the paths. Overall, these results indicate that the impact of institutional voids on business groups seems minimal compared to MNC and family-owned businesses in Uganda. The beta estimates, and p-values do not show any significant relationships.

Table 4.33: Standardised Regression Weights: (BIZG - Unconstrained)

Predicators		Estimate
Institutional Voids	<---	Firm Turnover .121
Institutional Voids	<---	Firm Experience .079
Firm Strategy	<---	Institutional Voids .099
Firm Strategy	<---	Firm Turnover -.119
Supply Chain Innovations	<---	Firm Strategy -.329
Supply Chain Innovation	<---	Institutional Voids .291
Firm Strategy	<---	Institutional Voids -.066
Firm Performance	<---	Supply Chain Innovation .236
Firm Performance	<---	Firm Strategy .096
Firm Performance	<---	Firm Experience -.340
Firm Performance	<---	Firm Turnover .025

Table 4.33 shows the regression weights for the business group. The estimates show the relationships between the variables in the model. The results indicate that firm experience negatively impacts firm performance. The key indicators say little about how institutional voids influence business groups in Uganda.

In sum, the multigroup hypothesis shows that institutional voids significantly impact MNC and Family-owned businesses and not business groups. Uganda's MNCs and family-owned businesses deploy similar strategies to respond to institutional voids, albeit with some nuances.

CHAPTER FIVE: QUALITATIVE FINDINGS

“It is better to debate a question without settling it than to settle a question without debating it.”— Joseph Joubert, French Essayist!

5.1 Key Informant Characteristics

Twenty-five key participants were interviewed for this study: Seven females (27%) and 18 males (72%). The participants were managers working in five manufacturing firms in Uganda, five suppliers out of which three were local suppliers and one from Kenya, and one from Swaziland. Five distributors have two international retailers and three local distributors. The key informants were experienced managers with managerial and industry of more than ten years. These participants were major decision-makers knowledgeable about their firm's supply chain and the manufacturing sector in Uganda. In the interview, the keywords below were frequently used by key informants (Gilmore et al, 2019). Primary dataset was used for all the tables in this chapter.

Table 5.1: Key Participant Demographics

Variable	Frequency	Percentage
Gender	(n)	(%)
Male	7	30%
Female	18	70%
Total	25	100%

Table 5.1 shows that 30% (7) of the participants were male, and 70% (18) were female. The diversity of participants was significant because it means the informational quality was excellent and divergent views were considered.

5.3 Qualitative Research Main Findings

5.3.1 Institutional Voids in Uganda Manufacturing

The theme documented institutional voids in Uganda's manufacturing landscape. This theme had ninety-three open codes representing the perceptions and views of key informants regarding the bottleneck manufacturing firm face in Uganda. The theme of institutional voids had four categories: product, labour, macro, and capital voids in emerging markets. It investigates the nature of institutional gaps in the manufacturing sector. Significant records were coded on the categories, as shown in Table 7.2 below.

Table 5.2: Institutional Voids in Manufacturing

Categorical Themes	Frequency	Percentage
Product	22	24%
Labor	10	11%
Macro	16	17%
Capital	45	48%
Total	93	100%

Table 5.2 Shows four categorical themes that emerged during grounded theory analysis of the data collected, including Product, Labor, Macro, and Capital Voids. Capital institutional voids generated the highest codes, with 48% of significant information coded it.

5.3.1.1 Product Markets Voids

The product market in Uganda encounters institutional voids, impacting how manufacturing firms conduct their business. The evidence from the study supported this category with 23 open codes about gaps experienced by manufacturing firms.

One key participant working in the cement industry with over five years of experience in the current role provided insights into the institutional voids in the product market and noted that:

(Hima cement) introduced some products with low uptake because the consumers needed to be made aware of the product and asked questions that we needed to provide better responses. Somehow it impacted the brand equity of Hima cement as a company because competitors were associating our (product) being a very low-grade cement, and Hima has dropped its standards and quality status" (#A11, Male, five years' experience).

Another participant with over twenty years of experience in the soft drink industry corroborated the above evidence by stating that: Regulators do not sanction some unlicensed factories *producing inferior quality products. Nevertheless, they are operating, which is unfair because it does not give a level of the ground. They spend less to produce these products and can afford to sell them cheaply* (#A23, Male, 20 years' experience).

The institutional voids in the market are related to high cases of counterfeit products, mostly smuggled from Kenya since this is the entry point for goods into Uganda. One participant reiterated this: *"Fake building products are in the market, such as paints, cement, and iron, among others. The economy loses money because of counterfeit products* (#A11, Male with five years of experience).

The above evidence points to the voids in the product market among manufacturing firms face in Uganda. They have persevered for several years due to weak institutions to regulate the forces of demand and supply. It also influences market forces to address imbalances in the markets to support manufacturing firms in Uganda to thrive.

5.3.1.2 Labor Market Voids

The labour market is an essential aspect of manufacturing and the driver of supply chain innovations in developed economies. Still, unfortunately in Uganda, the labour market is riddled with the problem, from a lack of skills to drive innovations to poor remuneration in the sector, a crucial barrier to supply chain innovations in Uganda (Baig et al, 2020). One participant working in the cement manufacturing sector noted that: *"employment, of course, we also look at how the business is developing local employee. But there are gaps in our skills to operated technological sophisticated manufacturing equipment"* (#A14, Male, five year's experience).

Besides, a participant working in the sugar manufacturing sector provided evidence of institutional voids in the labour market and stated that; we need to see *more corporation between the universities and academic institutions in Uganda on innovations. Including the supply chain, and there is a gap in this area. The labour forces the universities produce is not complementary to the manufacturing industry in Uganda"* (#A15, Female, seven year's experience).

The evidence presented above shows the need for stakeholders to address labour market gaps. Through strengthening and skilling, the labour force in the manufacturing sector, Uganda can produce quality products for domestic and export markets.

5.3.1.3 Macro Institutional Voids

The "rule of the game" is critical in the manufacturing sector, but there are several challenges in the macro institutional voids in Uganda that hinder the operations of manufacturing firms. A critical macro institutional void in Uganda found in the study was provided by a participant: the regulation of a manufacturing firm. The evidence from a participant working in the beer manufacturing industry in the last 15 years indicates: *"Yeah, we are noticing a lot more regulatory pressure regarding the age segments, the ingredients, labels on bottles, health warning which is*

different from country to country in East Africa. There are additional requirements" (#A2, Female, six years' experience) labels influence branding.

Another critical macro void in the manufacturing sector that overall affects the economy is Uganda's poor infrastructure. A participant provided evidence to support this claim. He had over twenty-one years in the manufacturing industry and noted, "*There is a lot we need to do in terms of infrastructure... Uganda is a landlocked country, and getting goods into Uganda is difficult and extremely expensive, and several customs barriers for export to neighbouring countries.*" (#A17, Male, ten years' experience).

Multimodal transportation could reduce the cost of transportation from Mombasa to Kampala and reverse logistics for exports. Simplified border crossing with single documentation in the border crossing is operational. Still, systems are challenged because each country uses different platforms depending on the laws (Bernon et al, 2018; Nugent & Soi, 2020).

Another participant agrees that macro institutional voids exist, which further hinder the growth of the manufacturing industry in Uganda. Uganda's road network and infrastructure are well-cited as a critical institutional gap. Although there is a strategy to address the problem, infrastructural gaps continue to frustrate manufacturers in Uganda. A participant in the study that, "*Poor Road networks make it impossible for Hima cement to distribute product to the market. Imagine you have 300 trucks on the road every day with (Uganda's) road network"* (#A12, Male, five years' experience).

Furthermore, a macro institutional void mentioned by another participant included high taxes. He asserted that: "*Taxes are very high, and the economy is not doing well. The affordability of beers is low because most consumers cannot afford because of the taxes on beer"* (A2, Female, six years' experience). The high taxes in the beer industry in Uganda is uncommon because the government

has a limited tax base, so the beer industry gets to be taxed heavily. In some instances, high taxes have resulted in tax evasion.

The findings above confirm that macro institutional voids exist in the manufacturing sector. Responding to these voids is paramount to stakeholders to compete effectively with other East African manufacturers (An et al, 2021).

5.3.1.4 Capital Markets Voids

The category had thirty open codes to which a significant piece of data was assigned. The capital market void is critical because the manufacturing sector needs capital to support its activities, especially plants and machinery (Kim & Song, 2017).

The study shows the presence of market voids. A participant asserted, "*Most of the customers run businesses on credit. There is low access to credit facilities. Firms need capital to buy machines*" (#A12, Male, five years' experience).

Another participant agreed when he noted that financing and regulations in the banking industry make it difficult for manufacturing firms to access finance. He encapsulates his experience: "*We have a problem with financing from the banks. There are high-interest rates that manufacturing firms to get a good line of credit. The interest rates in Uganda are extremely high*" (A11, Male, five years' experience). In sum, these findings reveal severe institutional voids in Uganda's markets, labour, macro, and product market that the manufacturing sector faces.

5.4.1 Response to Institutional Voids in Uganda

The theme had 30 open codes relating to manufacturing responding to institutional voids presented in the evidence above. Manufacturing firms must respond to institutional gaps to address the market challenges, which leads to research question two, stated below.

5.4.1.1 Accept or Attempt to Change the Market's Condition.

The manufacturing sector in Uganda uses different techniques to deal with institutional voids. Some companies accept the conditions or attempt to change market conditions to address institutional deficits in the sector. They can also develop robust strategies to deal with challenges in the market. More, they may enter, wait, or exit a particular market. Better still, there is an opportunity to innovate.

Evidence participant #A3, a knowledgeable supply chain guru, has worked in the manufacturing supply chain for over 20 years in Uganda with an accurate understanding of the institutional voids faced by manufacturing firms in Uganda. Knowledge management is essential in supply chain innovations (Bamel, & Bamel, 2018). Therefore, participant A3 affirmed that: "*We have moved to a global business model where we benefit from the economies of scale now as a large multinational*" (#A3, Male, five years' experience).

The findings indicate that the manufacturing firms in Uganda attempt to alter market conditions. The participant asserted that: "*In our supply chain, we responsible for ensuring that our supply chain network is environmentally sound*" (#A10, Male, four years' experience). Some firms have developed a robust supplier assessment model to ensure that their supply chain complies with global standards and is environmentally sustainable (de Vargas Mores et al, 2018).

How the products reach markets are essential, and businesses must modify their distribution systems to match existing challenges in the market. A participant cited that: "*We use big distributors to get products to the markets distributor is part of the official coca cola supply chain. These distributors have territories to make sure they reach the mile*" (#A8, Male, 5, years' experience).

Participant #A6 provided additional evidence in support of this claim. He cited that the business model adapts to the existing challenges and markets condition. In Uganda, there must be more big retail chains in rural areas, so the product reaches the last mile through a distribution model innovated by Coca-Cola. Participant #A6 noted, "*We used mega distribution centers (MDC) processes, and that is how the product reaches the market ... it has been quite successful in reducing the bottlenecks in our supply chain...*" (#A6, Male, 7, years of experience).

Other models used to bring products to the markets are in the retail sector. The Game store has been operating in Uganda since 2004 and uses some of the modern approaches in retail. A senior manager interviewed for this study noted, "*Game business model in Uganda entails having a wide display, nice floor space, provide and warranties. If customers find the products cheaper elsewhere, we give customers a 10% discount on that product*" (#A25, Male, four years' experience).

Another informant further noted that: "*One of (Game) model was to have a local or native run the business and since 2004 local people have been managers with oversight from the headquarters in the Republic of South Africa*" (#A25). So managerial ties for Game have been one of the avenues to address institutional voids in Uganda.

The meaning of this category was related to how manufacturing firms respond to institutional void by accepting the current situation or trying to change it. The study found that those firms opt to change markets to address institutional voids rather than leave it the way. In sum, firms counteract institutional gaps in emerging markets.

5.4.1.2 Compete Alone or Collaborate.

Competition exists in emerging markets, but collaboration is needed to address hostile market forces. The findings from the study show that manufacturing firms used a combination of

competition alone and collaboration to tackle institutional voids. There were 25 essential pieces of information coded to this node, and the excerpts show that most of the firms in Uganda compete alone. There was an indication from key informant three, who works in a brewery who attests that:

Signing into a joint venture (JV) in the supply chain is necessary. However, (UBL) could work with other bottlers to develop packaging manufacturing facilities because that is a problem for all the bottlers in East Africa. (#A1, Male, four years' experience).

Another participant in the brewing industry substantiated this claim and reiterated that: *Strategic alliance is necessary for (NBL) supply chain as we participate in some form of partnership with other members...we have Uganda manufacturers associations which bring all the stakeholders to tackle supply chain problems... (#A24, Male, five years' experience).*

However, there was an instance of collaboration in the market to counter institutional voids. A participant noted, "Our new product development is done in collaboration with the customers because the product has to add value to the entire supply chain and become profitable with inputs from all stakeholders..." (A10, Male, four years' experience).

Another participant supported this claim and stated, "*...the partnerships like the one (Game) have with Shoprite in owning this building where we operate ... we share CAPEX and jointly own the building although we are rivals... (#A25, Male, four years' experience).*

Firms in Uganda compete alone and collaborate to mitigate institutional voids, and there are areas of synergy that manufacturing firms can use to manage institutional gaps in the market. Only some local suppliers for packaging materials need local supplier development (Kafouros & Aliyev, 2016).

5.4.1.3 Enter, Wait for Exit

Firms must weigh the nature of institutional voids in each market and decide whether to enter or wait for exits. In Uganda, there is proof to show that all three combinations are applied. For example, some firms were reluctant to venture into Southern Sudan because of the war. A participant notes this evidence: *"Uganda breweries have entered new market segments and ventured into new territories such as South Sudan. We are doing well in these markets although there are still obstacles in the supply chain such as logistics and insecurity"* (#A3, Male 5 years' experience).

Moreover, another participant working in the market for a major beer manufacturer cited: *"I think because of efficiencies through formats like Kegs we can reach better price points. We are onboarding consumers who were previously only drinking illicit alcohol. This Innovation has reduced unregulated alcohol in our supply chain"* (#A2, Female, six years' experience).

Opportunities exist for manufacturing firms to enter new market segments in the domestic market. Participant #A7 noted, *" We have one new customer, Uganda Airlines, which is a new segment. We supply all the beverages consumed by the passengers serving Coca-Cola in Uganda airlines is a pride for us since it is a national carrier"* (#A7, Female, three years' experience).

The evidence from the participants suggests that all the responses to institutional voids can improve the financial performance of the firms involved. However, real challenges in eastern DRC and Southern Sudan exist, and the region remains volatile, a problem and an institutional void that requires governments to solve. By completing this thesis, several firms have exited Uganda or announced plans to exit the country, including Shoprite, a South African retail store that was part of the case study.

5.4.1.4 Innovations Response to Institutional Voids

The category explains the response to institutional voids through supply chain innovations. Supply chain innovations address the challenges in the product, capital, and macro institutional voids. Twenty-three responses from NVivo were coded to this category to explain supply chain innovations in Uganda. The findings show that supply chain innovations are critical to tackling institutional voids, and some of the rich quotes for the datasets support this notion.

Some of the critical Innovation in the dataset indicates the importance of supply chain innovation drive by applying technology to address supply chain bottlenecks. One of the critical informants stated:

"We evolved from just having a bottled beer to technology around plastic using PET. The technology back then had minimal application, but most of the activities here in the brewery use some form of technology." (#A3, Female, five years' experience).

Adaptive manufacturing technology can make a difference in Uganda and provide a firm with ammunition to alleviate institutional problems. A participant interviewed for the study stated: *"An app leads retail which allows customers to place orders using their mobile phones and follow up on order—every process in the supply chain new technology to solve half our problem. End-end supply chain performs better with this app"* (#A14, Male, eight years' experience).

Another participant in the cement manufacturing firm supported this evidence and asserted that: *In Portland, cement manufacturing technology is evolving, and Hima Cement, through its parent company Lafarge (Hima cement), implemented state-of-the-art technology in our manufacturing processes, there are more opportunities to innovate more"* (#A12, Male, five years' experience).

The findings reveal that one of the vital supply chain innovations that organisations use across all the manufacturing firms in the case studies was enterprise resources planning (ERP) systems. Four

of five manufacturing firms in the studies used SAP systems to integrate their supply chain. A participant for a Coca-Cola franchise bottler stated that: "*The supply chain connects all clients and suppliers. CBCL uses SAP as the main ERP system. The SAP ERP system has different modules like supply chain, sales & distributions, finance, manufacturing.*" (#A9, Male, 4, years' experience).

The findings show how vital supply chain innovation tackles institutional voids because integration in the supply chain reduces information asymmetry between players (Kahn, 2018). In addition, SAP has improved many business processes and directly reduces institutional gaps in the supply chain (García-Sánchez & Noguera-Gámez, 2017).

5.4.1.5 Supply Chain Partnerships

The partnership among firms is ideal for responding to institutional voids by manufacturing firms in Uganda. The proof from the coded information in this category supports the theme related to how firms respond to institutional voids (Amankwah-Amoah et al., 2018).

A Participant employed by a prominent manufacturer contends that a "*Key partnership with the Buganda kingdom was mutually beneficial. We can get more accessible price points for beer and stop consumers from drinking illicit local brew. We promoted a beer brand called 'Enguli'*" (#A3, Female, five years' experience).

The sugar manufacturing firm also partnered with out-growers to solve the problem of institutional gaps in strategic raw materials. A sugar manufacturing participant noted, "*Kakira is trying to attain more land to increase the plantation size. Nevertheless, partnerships are useful. With the alliance, we work with other partners but not in sugarcane at this moment we do not see the need.*" (#A16, Male, 11 years of experience).

A participant gave insights into supply chain partnerships and stated that: *"The supply chain partnerships are cognizant of the impact of the supply chain sustainability, and Kakira has a wider supply base for both sugarcane, tea farming, and other communities. Sustainability should be everybody's concern in our supply chain"* (#A18, Male, eight years' experience).

The participant mentioned the use of partnerships to solve supply chain problems. It indicates the import of innovations because of their new ways of thinking and managing the supply chain to extract value.

5.4.1.6 Replicate or Adapt.

Firms in emerging markets can either replicate or adapt business models to deal with the institutional voids in emerging markets. The category had twenty specific codes to explain the response to institutional voids. A participant asserted that: *"We constantly adapt or upgrade our business model to target new consumer segment that we were not previously able to reach because of a barrier of price and other issues in the market"* (#A9, Male, 4, years' experience).

The business models adopted by manufacturing firms to counter institutional voids are varied. Backward integration has been applied to many firms to secure the sources of supply (Jabbour et al.,2020). The participant stated that: *"(CBCL) are doing backward integration. Rwenzori is where we have backward integration for fruit plantation to supply mangoes and oranges to make juices"* (#A8, 4, years' experience). This idea was also agreed to by another participant *"...we replicated the route to market for all the major distribution areas and this has been critical in improving the distribution of our products in Uganda and across East Africa"* (#A7, Male, three years' experience).

One participant working with one of the large retail distributors noted that; *"Shoprite has replicated the business model used in South Africa to service the market in Uganda."* The other

big retailer, Game, seems to replicate the distribution model used in South Africa, as noted by one of the key informants who stated: "*(Game) use the distribution model used in South Africa. Game is part of Walmart; Walmart supply chain is unrivalled as you are aware.*" (#A25, Male, four years' experience).

The evidence above indicates that the business model can be replicated or adapted to the market's needs. The experience from Shoprite and Game indicates that deploying some of the strategies these firms use in South Africa has benefited the Uganda markets (Mbalyohere et al, 2018).

5.4.1.7 Strategic Response to Voids

This category had thirty-four pieces of data coded to it and related to firms' strategy in emerging markets to respond to institutional voids. There must be systems for firms to respond to institutional voids to attenuate specific gaps that need attention (Oesterle & Röber, 2017). A participant provided evidence: "*Early supplier involvement is a method we use in our supply chain to identify suitable and capable suppliers for new product launches or innovations. Therefore, we rope suppliers to supply the raw materials needed for new products*" (#A3, Male, five years' experience).

Further evidence from the interview indicates that firms use procurement strategies to address institutional voids. For example, local sourcing or Buy Uganda Build Uganda (BUBU) is a strategy to address the lack of a local supplier (Behuria, 2021; Banya, 2018; Luiz et al, 2017). The proof giving credence to the approach was explained by participant #A3, a procurement expert who stated: "*I know UBL has done a lot already. There is a new procurement strategy and processes to tackle the challenges when dealing with suppliers out of Uganda to improve competitive advantage. We must also develop local suppliers*" (#A3, Male, five years' experience).

The contractual relationship with critical suppliers is used (Pinkham & Peng, 2017; Shou, Zheng, and Zhu, 2016). This evidence was supplied by a participant who asserted that: "*UBL entered into long-term contracts for three to five and became a single-source supplier. The supplier can use the contract to borrow to support the business with knowledge of a guaranteed business in the next three years. It identifies where the problems are, and we try to alleviate price fluctuations through these long-term contracts* (#A1, Male, four years' experience).

One of the participants said that: "*to avoid unnecessary storage, VMI agreement is in place with suppliers and SDV who is our logistics partners, and therefore they manage and ship the inventory to us when it is needed.*" (#A3, Male, five years' experience).

The strategies used to respond to institutional voids are varied, and in Uganda, manufacturing firms have used long term-contract, early supplier involvement, procurement strategies, and local supplier development. The market dynamics in Uganda call for strategies to reduce market disparities that give rise to voids. For a long, local suppliers in Uganda needed help supplying manufacturing firms with the most basic raw materials, such as packaging products. Still, the tide has turned because of the strategy adopted by manufacturing to develop local suppliers to fill some of the voids (Chipp et al, 2019).

5.4.1.8 Supplier Relationships

This category had thirty-one pieces of information coded to it, describing supplier relationships as a measure to manage institutional voids. The role of suppliers in the supply chain network is critical, and relationships are critical to mitigate the challenges in the supply chain (Brix-Asala, & Souring, 2020). The evidence from the interview indicated that manufacturing firms in Uganda, and this was discussed by a participant who cited that "we use business relationships in the supply

chain to manage challenges in the supply chain to deliver value in the supplier chain." (# A10, Male, four years' experience).

The evidence supported another participant who explained the need for suppliers to build good relationships with manufacturers. This participant noted that: "*Suppliers are part of our NPD programme and provide assurance to the New Product Development team about the availability of the product, how much it cost and when the suppliers can ship the product so that it gets to factored into production launched.*" (#A6, Male, 7, years' experience).

To emphasise this point, a participant employed by one of the giant sugar manufacturing in Uganda echoed the importance of relationships in the supply chain. She noted that: "*The issue of relationships is essential in the supply chain and primarily for small distributors. These relationships are purely commercial.*" (#A11, Male, 5, years' experience).

In sum, supplier relationships form part of a vital strategy to alleviate supply chain problems that manufacturing firms are faced. The relationships enable information sharing between players in the sector to reduce information asymmetry that benefits a few players in the supply chain and exacerbates institutional voids.

Table 5.3: Response to Institutional Voids

Variable	Frequency	Percentage
	(n)	(%)
Accept or attempt to change market condition	40	18
Compete or collaborate	38	17
Build supplier relationships	31	14
Strategic alignment	30	13
Enter, Wait or Exit	26	12
Innovate	23	10
Replicate or adapt	20	9
Partnership	16	7
Total	224	100

Table 5.3 indicates what strategies companies in Uganda use to respond to Institutional Voids. The information was coded to 13% accepting or attempting to change the market's condition, 17% of the firms competing alone or collaborating, 14% using supplier relationships to respond to institutional voids, and only 10% using innovations to address Institutional Voids.

5.5.1 Barriers and Challenges to Supply Chain Innovations

The meaning of this theme is about barriers and challenges in the supply chain that make it hard for manufacturers to reduce the impact of institutional voids. The theme had seventy-three coded information and comprised seven categories, i.e., collaboration, cost, culture, knowledge, regulations, skills gap, and technology barriers.

5.5.1.1 Lack of Collaboration among firms

The category shows why collaboration hinders supply chain innovations in emerging markets. The parent node had six pieces of information assigned to it. The findings indicate that collaboration is a challenge to innovations in the supply chain because manufacturing firms are focused on competition.

Several barriers and challenges exist in implementing supply chain innovations to deal with institutional voids in Uganda. A participant corroborated the evidence: "*There is competition in the market but few collaborations between players on how to solve bottlenecks in our market.*" (#A1, Male, 4, years' experience).

The findings support the experience given by one of the participants, who noted that: "*Manufacturers must collaborate to reduce energy usage... right now energy usage is a problem in the manufacturing process*" (#A14, Male, eight years' experience). This finding is important because, apart from the competition, there is a need to collaborate and close the gap.

Furthermore, the findings indicate that manufacturing firms underscored the importance of collaboration in the supply chain, with one key informant asserting that: "*the supply chain cannot function efficiently without talking to the suppliers, so we must involve suppliers in the early stage so that we add value to the customers*" (#A9, Male, 4, years' experience).

The indication of collaboration is pivotal to supply chain innovations in Uganda to arrest institutional voids, and the findings from the dataset supported this argument. The manufacturing stakeholders must address the barriers to collaboration to reduce the over effects of institutional voids.

5.5.1.2 Cost of Innovations in the Manufacturing Sector

The category illustrates why the cost is a barrier to supply chain innovations. Eighteen pieces of data are assigned to this category to provide evidence supporting why cost drivers inhibit supply chain innovations. The findings indicate that most manufacturers needed to be more apprehensive about the cost of innovations, which presented a significant challenge (Flynn et al, 2015).

A study participant noted, *"I think supply chain innovations require substantial investments and organisational would like to know how valuable it is to the business and if it can help cut cost though. I am not about the role of supply chain innovations because we have an abysmal infrastructure in Uganda."* (#A3, Male, eight years' experience).

Besides, a participant stated, *"The other thing of course is that other barriers then become an investment and the cost of taking on such (innovations). Industries have thrived in other nations because of government intervention in the innovations space."* (#A16, Male, 20 years' experience).

Thus, the evidence aligns with a participant from the retail industry distributing products in and around Kampala city. He asserted that: *"Shoprite has confronted many barriers to supply chain innovations in Uganda. High taxes., poor infrastructure quality, and lack of economic stimulus to increase consumer buying power."* (#A10, Male, four years' experience).

A participant in the sugar manufacturer was afraid that the cost of innovations could pass to consumers. He asserted, *"Companies should not pass on the cost to the distributor or final customers, and they must absorb to enrich the product quality. However, the manufacturers are happy to pass the cost of Innovation to the final customers by adding the innovation cost to the product (#A7, three years of experience). A participant also noted that innovation cost could "inversely affect the selling price and the customer. Customers do not like the innovations if it costs him extra money."* (#A7, Male, three years of experience).

The above results accentuate the need to cut innovation costs to ensure that the products or technology supplied to the market are affordable. Secondly, costs are a barrier to essential innovations in the supply chain (Kumar et al, 2017).

5.5.1.3 Culture of doing business in Uganda

The problem of culture is present in the supply chain, and some stakeholders resist the uptake of innovations due to consumer preference and taste. This category had ten open codes assigned to describe the barrier to supply chain innovation because of culture.

A participant stated that: *The practices and culture of constructing roads in Uganda are insufficient, hence the high wear and tear rate. We innovated a brand called roadcen, which has been in the market for the last two years. However, there is a problem with acceptance.*" (#A13, Male, nine years of experience).

A study participant noted, *"Our business is still a manual warehouse system. We are a small distributor and use limited technology in operation"* (#A6, Male, seven years' experience).

Another smaller distributor agreed and stated, *"We do not plan to implement technology in distribution. But prefer employee's work rather than dependent on technology, and it makes employees lazy"* (#A17, Male, 11 years' experience).

The results above show how culture is a barrier to supply chain innovations in Uganda and resistance to implementing new technology by employees and other stakeholders in the supply chain network. There is a fear of the impact on the supply chain network, and most employees like extra workload. The poor working culture in Uganda is a problem (Gupta et al., 2020).

5.5.1.4 The Poor Infrastructure in Uganda

This category had open fifteen open codes to provide insights into how poor infrastructure is a barrier to supply chain innovations. The evidence gathered indicated that most manufacturers believe poor infrastructure is a significant problem for Ugandan businesses.

One participant asserted that the supply chain is impossible in Uganda because of the infrastructure. This informant stated, "Drones are *a long way to be implemented in Uganda. I think because of Uganda's poor infrastructure. But it does add much value to the business. I am sure in time drones will be implemented in Uganda.*" (A1, Male, five years' experience). Another informant contends that besides the infrastructural problems, there is a cost element and cited that: "Drones are not practical in the supply chain because manufacturers lack the necessary infrastructure. The postal system in Uganda is not well developed. So, it is not easy to locate addresses where drones can make deliveries to customers." (#A16, Male, 7 years' experience).

In the end, most key informants reiterated the importance of infrastructure in the supply chain. Uganda has severe infrastructural problems compared to Kenya and Tanzania—these present barriers to implementing supply chain innovations besides other factors (Drouillard, 2017).

5.5.1.5 The Regulatory Voids in Uganda

In Uganda, regulation has been alluded to as a barrier to supply chain innovations, and this category had sixteen open codes to describe this phenomenon. The regulatory environment in Uganda is weak and it needs to be stronger and is a barrier to innovations in the supply chain.

The argument is in line with the participants' experience, who stated that: *the legislation around (Drones) needs to have: the security and the safety of products in delivery. When drones are introduced, there are concerns about traffic, legislation, and safety issues* (#A17, Male, ten years' experience).

A participant stressed that: *"UNBS has come out strongly on what should appear on the label to ensure the consumers do not get misled because of the labelling. There is pressure from the regulators to use clear labels (#A2, Male, six years' experience).*

Besides, another informant also cited that: *"Overall, the regulatory environment is still poor. We have a lot of counterfeit products in the markets—inferior quality and labelling problems. Most manufacturing firms are still not following the gazette regulation on pollution and others" (#A15, Male, seven years' experience).*

The evidence shows that regulation is a crucial barrier to supply chain innovations and the rule of the Game followed. Some manufacturing firms need to see the incentive to innovate because counterfeit products compete with genuine products (Zhao et al, 2014).

5.5.1.6 Skills Gap in Uganda

The barrier to supply chain innovations also relates to the need for more skills to drive innovations. The category had two pieces of information coded to it, explaining why skills are pivotal to supply chain innovation in Uganda. The evidence presented herein shows that the skills gap is a significant barrier to supply chain innovation. One participant employed in a large soft drink manufacturer contends, *"Increase the skill level of people at the shop floor. The employer must train more people to use that latest technology in manufacturing."* (#A19, Male, nine years' experience).

Another participant supported this argument and stated, *"I think most manufacturers do not have adequate budget for training and development to increase the skills necessary."* (#A21, Female, three years' experience). The evidence shows how a lack of skills prevents firms from expanding technology and other innovations in the supply chain. Most corporates are aggressively training

their employees in South Africa to equip them with new skills that can be used to drive innovations.

5.5.1.7 Technology Gap in Uganda

The technology barrier to supply chain innovations in Uganda is a significant part of how manufacturing firms can strengthen innovations. The category had six information codes and explained technology applications in the supply chain.

The findings show that technology is a significant barrier to supply chain innovation in Uganda. One participant contends, "*Hima cement is developing new sources of alternative energy such as using the byproducts from beer production. This unique idea can sustainably reduce factory electricity usage (#18, Male, eight years' experience. Moreover, the same participant contends that "We face serious challenges with the technology to extract Co2 and recycle waste materials to be used in the processes. Technology is a barrier to innovations in our supply chain, especially the cost of the technology (#A18, Male, eight years of experience).*

Another critical informant noted that "*online payment implemented in Uganda is not suitable although it works well with individuals with B2B is a bit of a challenge because the payment systems do not deliver proof of payments for B2B transaction.*" Another participant agreed with these findings and stated, "*I think using mobile money for business is cumbersome because the system is not configured to give customers legal proof of remittance.*" (A15, Male, seven years of experience).

The findings from the study show that technology is a barrier to supply chain innovations. Manufacturers in Uganda need help in bridging the gap in technology acquisition. Uganda primarily uses outdated technology because the cost of new technology is exorbitant (Mothobi & Grzybowski, 2017).

Table 5.4: Barrier to Supply Chain Innovations.

Variable	Frequency	Percentage
Categorical Themes	(n)	(%)
Lack of collaboration	6	8%
Cost	18	25%
Poor infrastructure	15	21%
Culture	10	14%
Regulation	16	22%
Skills gap	2	3%
Technology	6	8%
Total	73	100

Table 5.4 shows key barriers to supply chain innovations: Cost, poor infrastructure, regulation, and culture had significant information assigned to this node. Primary dataset from interviews.

5.6 Supply Chain Innovations in Uganda

This theme describes specific supply chain innovations in Uganda and how this is transforming the supply chain terrain. The concept had one hundred and six pieces of information. It captured process and systems, product, regulation, renewable energy, social and technological innovations used by manufacturing firms in Uganda to respond to institutional voids within their value chain.

Table 5.5: Supply Chain Innovations

Variable	Frequency	Percentage
	(n)	(%)
Categorical Themes		
Process & Systems	20	19%
Products	23	22%
Regulations	9	8%
Renewable energy	10	9%
Social Innovations	4	4%
Technology	40	38%
Total	106	100

Table 5.5 shows the various types of innovations implemented by manufacturing firms. Significant information assigned to Technology 38%, product 22%, and systems were 19%.

5.6.1 Systems and Process Innovations

Manufacturing firms in Uganda have implemented several processes. Some firms have developed innovations in the supply chain to alleviate institutional voids. The category had twenty pieces of information coded to this category. The extracts from the open codes applied in the development of mind maps related to the supply chain innovation's themes.

The study recognised specific supply chain innovations used by manufacturing firms in Uganda. One participant working for a brewery company stated, "*Uganda Breweries has new business processes to improve the distribution processes for distributors of (UBL) products. The ordering*

process has improved because of the modern business process (#A3, Male, five years of experience).

Another participant mentioned that process improvement was vital. He supported this evidence by stating that *the system user manual and physical stock count, tagging and documenting the number of pallets with the products and labelling it with the quantities stating the expiry date. The distribution trucks use FIFO (#A9, Male, four years of experience).*

The participant further noted that: *"This entire process is very manual, and (CBCL) is busy automating this process. So consequently, a sound warehouse management system can support to diminish some of the gaps in the supply chain."* (#A9, Male, four years).

Using mobile apps in Uganda has improved how products reach the markets. A participant cited that: *"our RTM continues to improve markets access and reach new customers." (CBCL) has rolled out the mobile app to interact with our customers and ensure accounts developers resolve the challenges in the markets and serve customers better."* (#A6, Female, five years' experience).

The findings above show that systems and processes are critical innovations in the supply chain in Uganda. Most manufacturing firms have deployed business processes to improve the route to market and resolve some of the bottlenecks in the supply chain in Uganda.

5.6.2 Product Innovations

The product innovation landscape in Uganda has changed tremendously, and manufacturing firms have tried to make essential products locally and introduce new products (Arunachalam et al, 2020). This category had twenty-three open codes to support the findings.

One participant asserted that: *"UBL has launched several new products in the markets and others rebranded like the local gins in different flavours, and our low-income consumers like the product (#A2, Female, five years' experience).*

Besides, one of the key informants working in the soft drink industry noted, "*Coca-Cola (CBCL) introduced nonalcoholic drinks but imported such as Sky and the Coffee malt. (#A8, Female, five years' experience)*". Furthermore, a participant cited that: "*Nile Breweries has 14 new beer brands in the past three years. For example, Eagle Poa beer, made from local maize and sorghum, is one of the new products targeting low-income consumers (NBL) Chibuku,*" which is another local beer brand." (#A24, Female, eight years' experience).

The findings show that product innovation is a critical part of supply chain innovation in Uganda, and most of the firms in the case study launched, on average, five new products in the last three years. However, Uganda relies majorly on the imports of several products required.

5.6.3 Regulatory Innovations in Uganda

The regulatory environment in Uganda is crucial to support the business. Still, the "rule of the game" is inadequate in emerging markets. The law enforcement apparatus needs to be stronger in certain areas that require attention. The category had nine open codes assigned to it.

One participant noted that regulatory laws are weak. "*The sale and consumption of alcohol to consumers below 18 years is a problem. (UBL) is implementing changes because Diageo sees the shortcoming in policy and tries to cure it (#A2, Female, six years' experience)*". Another participant affirmed the above findings when he cited that: "*UNBS is implementing digital stamps to improve the quality of products in the markets. It can be a good innovation in the supply chain.*"

The regulation innovations must play a core factor in the supply chain, given the impact of the supply chain on the environment. This idea was also alluded to by one participant who mentioned that: "*Walmart is a recognised global supply chain player, and the supply chain is the best in the world. Our supply chain operations are compliant with all climate change regulations.*" He further

noted, "Game ensures our suppliers know the impact of emitting the Co2 in the environment." (#A25, Male, four years of experience).

The finding is significant because environmental factors are crucial in the supply chain, and innovations to reduce the impact of the supply chain in manufacturing to curb global warming are significant progress in the supply in emerging markets.

5.6.4 Renewable Energy Usage in Uganda

There is a challenge of energy use in the manufacturing sector, and the category describes Innovation in the renewable energy sector. This category has ten open codes to support.

Renewable energy is crucial to manufacturing firms, and the four more prominent manufacturing firms in Uganda have implemented renewable energy solutions of some kind. One of the informants cited, *"Innovation is vital to solving our energy problems. We constructed a water plant and a new technology to recycle water and promote energy efficiencies in our process (#A8, Male, four years of experience).* Furthermore, one participant in the cement agreed to these findings and stated that: *"Lafarge/Hima use a lot of Biogas. We source renewable materials from UBL or the byproduct to use as energy in our processes." (#A13, Male, nine years of experience).*

The same informant continued, *"We are trying to use as much as possible these fossil fuels with what we call biomass fuel which comes from natural plantations and wastes from agriculture which the trap for carbon dioxide. The participant said, "When you plant a tree, it spends about 15 years trapping CO2 from outside the environment. Later that tree is burnt, and it has a zero-net impact on the carbon dioxide and greenhouse gas effects (#A11, Male, five years' experience).*

These findings are crucial and provide insights into why innovations are paramount in the supply chain. Energy usage has long been a problem for manufacturing firms in Uganda. However,

progress in this area has been witnessed, and there continue to be energy-efficient practices across the industry (Gabriel, 2016).

5.6.4 Social Innovations in Uganda

Social innovations describe what new things a social perspective manufacturing firms have executed in the supply chain (Butzin et al., 2014). The category four open codes show evidence of social innovations in the supply chain. The findings showed that manufacturing firms in Uganda had executed social innovations that have benefited the supply chain.

One participant who supplies local raw materials noted that: "We supply local raw materials for brewing beer such as sorghum and maize. He added that: "our operation is sustainable and *benefits the local community and contributes towards social transformation.*" (#A24, Male, eight year's experience). A participant in sugar manufacturing gave proof. He noted that: *(Kakira) sugar manufacturing supports local out-growers and improves the social impact of our business. The product is environmentally friendly*" (#A16, Male, 11 year's experience).

Furthermore, the participant who works at another beer manufacturer also stated the social innovations in their supply chain and presented evidence about local participation in the supply chain and the benefits of their operations to the communities when he cited that: *"Nile Breweries implemented backward integration. Afro Kai's farmer's group is our partner, and we buy sorghum and maize to make beer from them. Backward integration has social benefits because local farmers use this income to educate their children and buy essential commodities."* (#A23, Male, five-year experience).

The evidence submitted indicates the importance of the manufacturing value chain in poverty alleviation through the engagement of local communities, such as farmer groups, in supplying local raw materials used in the brewing process (Wu et al, 2020; Mickiewicz et al., 2020).

5.6.5 Technology Innovations in Uganda

Technological Innovation is a vital component of the manufacturing sector in Uganda. The coding adopted for this used forty open codes to support the argument in this study. All the codes link back to the specific supply chain innovation's theme. An excellent example of technology application in the supply chain is the interconnectivity between the manufacturing firms and their parent firms in Kenya, Tanzania, South Africa, and others. Besides, technological Innovation allows linkages between the manufacturer and the original equipment manufacturer (OEM) and makes it easier to do plant maintenance (Chege et al, 2019c).

A different participant also stated: "*Looking at how we interconnect other breweries in the group—the technology platform which connects breweries across the globe. Technology is critical in the supply chain, and most problems need some technology to resolve them*" (#A1, Male, four years' experience).

Another key respondent working in a brewery firm contends that: "*Internet applications practical in (UBL) supply chain like 3D printers. So, we can print all plastic spare parts locally using 3D equipment. The IoT is promising innovations in the supply chain.*" (#A3, Male, five year's experience). Besides, another participant reiterated this fact: "*Technology is a must in manufacturing. We have introduced new technology to ensure the quality of products meets international standards.*" (#A6, Male, seven years' experience).

The evidence above shows the impact of technological advancement in the supply chain and how this Innovation is paramount to improving the efficiency and performance of the manufacturing sector in Uganda, notwithstanding that the bulk of the technology used is ten years late.

5.7.1 Advantages of Supply Chain Innovations in Uganda

Supply chain innovations offer several advantages to manufacturers, customers, and consumers. This theme describes the import of supply chain innovations in Uganda. The phenomenon had four hundred fourteen opens which captured participant experience regarding the phenomena. The benefits are grouped into five subcategories: Energy and infrastructural, firm, social, and technological performance.

5.7.1.1 Energy and Infrastructure in Uganda

The data collected alludes to the importance of energy to manufacturing organisations. The participants in the study noted the benefits of supply chain innovations in energy and infrastructure. The category had sixty-one open codes that captured participants' experience regarding energy and infrastructure development because of supply chain innovation.

A participant we cited that: *"Manufacturing uses much water. We have the capacity now to treat the water that is then recycled backed into production. UBL is thinking ahead and moving to an era where recycling is key."* (#A3, Male, five year's experience).

Another participant working in the same firm noted, *"Uganda Breweries has invested in water recovery, recycling, and solar systems. It benefits the environment because of global warming and climate change (#A1, Male, four year's experience).*

Furthermore, participant #A3 supported the claim and stated that: *"UBL introduced solar systems which is a significant innovation. Also, in our package, constituents use many greener materials. We have an initiative code-named Zip waste out of landfill where (UBL) makes sure that we do not dispose of any waste to landfill but rather recycle glass, and plastics."* (#A3, Male, six year's experience).

The evidence above does support the claim that one of the advantages of supply chain innovations in Uganda has been positive in water recycling, water treatment, and energy usage, which are critical variables in the manufacturing sector in Uganda (Simms et al, 2020).

5.7.1.2 Firm Performance in Uganda

The category discusses the connection between supply chain innovation and firm performance and has fifty-three open codes to support this claim. The answers from one of the key informants noted that: (CBCL) revenue has been going up mainly due to the innovative route to market used. He further claims that *new brands are more relevant to consumers, and the gain has increased. At the same time, we also focus a lot on cost reduction and revenue growth.*" (#A8, Male, five years' experience).

In support of this claim, participant #A1 noted cost reduction because of supply chain innovations. He stated that: *Some of the Innovation (UBL) used has driven away bad costs. For example, costs such as us demurrage, airfreight and others have been perpetual problems for the breweries. He further stated that "through Vendor Managed Inventory (VMI) for raw materials such as sugar...we have eliminated most of these costs like demurrage fees.*" (#A1, Male, four year's experience).

Another participant supported this claim and stated, *"Inventory is a major financial investment in manufacturing, but inventory management is poor. There have been innovations in optimising Inventory and reduced stockpile. The technology played a role in ensuring the end-to-end supply chain visibility"* (#A20, Male, four years' experience).

The evidence from this category strengthens the claim that supply chain innovations result in excellent firm performance in all areas, primarily financial performance, and are critical in lessening the impact of institutional voids.

5.7.1.3 The Social Enterprise Performance in Uganda

The role of the supply chain in alleviating poverty in emerging markets, especially in Uganda, is well known. This category describes why the manufacturing value chain can support social transformation and forty-five open codes to support the above claim.

One of the participants agreed that supply chain innovations play a significant role in the value chain. He asserted that: "*The supply chain has benefited local people, for example, the nucleus farmers and who have been able to provide local raw materials*" (#A1, Male, 4, years' experience).

The participants in the study showed other benefits of the supply chain and how it has supported the local communities, hence providing direct income. He stated that: "*Coca-Cola provides support to local communities CSR. We help build schools and hospital.*" (#A6, Male, 3, years' experience). *Corporate socially responsible has a significant role in the supply chain.*

A significant advantage was observed in the cement manufacturing process. A participant noted the social transformation in the cement industry when he cited that: Hima Cement is supporting locals (communities) to plant coffee (Yin & Jamali, 2016; Agostini et al, 2020). The company is looking at coffee husk as an alternative source of energy. The local communities cultivate coffee, and the company buys coffee husks from them" (#A11, Male, five year's experience).

He continued, stating that "communities are not only selling coffee to the marketing board, but they are also selling to (Hima) the husks. Besides, the same participant mentioned that over 6 million coffee trees are planted in Kasese, where we have a plant." (#A11, Male, five year's experience).

The social transformation because of the supply chain innovations has significantly impacted the local communities, especially farmers who assimilated into the value chain as suppliers of local raw materials to beer manufacturing companies (Lambin et al., 2018).

5.7.1.4 Technological Performance

Supply chain innovation has shown how the application of technology has increased technology uptake in the manufacturing sector. The category had thirty-five open codes to support this claim, which was evidence to explain the phenomena.

The evidence from the dataset indicates that technology uptake has increased in the manufacturing sector. One participant stated, "*UBL is already printing their spare parts using 3D printing. We need technical specifications from the OEM to print our parts. This is a significant advantage and technological and cost reduction.*" (# A1, Male, Male, four year's experience).

A participant working in the cement manufacturer asserted that: "*Lafarge is using new technology to develop quality products in our markets in Africa (Uganda) and across the world.*" The participant also stated that "*Limestone calcined clay cement (LC3) is a new technology which combines limestone and calcined clay, and this cement has significantly reduced the impact of cement manufacturing on global warming.*" (#A11, Male, five year's experience).

Furthermore, the key informant in the brewery supported this claim and stated, "*Technology is the backbone of our business.*" NBL installed a new bottling line to increase capacity in production. "*Technology is a great equaliser, and the supply chain must apply to solve the supply chain bottlenecks in manufacturing.*" (#A22, Female, six year's experience).

The technology uptake in emerging markets has improved dramatically, and in Uganda, the critical benefit of supply chain innovation has been a witness to technology benefit. Most firms upgraded their technology, but others still need to start using old technology years behind because of the cost involved. The findings showed that manufactured soft drinks and bears had increased capacity in the last three years.

5.7.1.4 New Products Development

New product development is a crucial outcome of supply chain innovation. The category had forty-six open-coded statements to support the benefits of product development in emerging markets. The coding strategy captured experience to support the claim and provided evidence of new product development.

One of the key informants working in a brewery asserted that: *"Now we are also dispensing in draft beer or keg format, that is an evolution in technology"* (#A3, Female, 5, years' experience).

The corroboration proof was given by other participants and cited that; *"Lafarge/Hima cement launched two new products in the market. I think Hima is doing well on supply chain innovation."*

(#A10, Male, four years' experience). Furthermore, a participant in the sugar manufacturing industry supports the claim that supply chain innovations have led to product innovation, and the consumers have alternatives in the markets. He cited, *"Kakira sugar developed blenders to make local gin (Uganda waragi). This is the first in Uganda. He also asserted that: "Original the blenders got from Kenya. Being in the sugar industry, the byproduct of sugar refining byproducts or molasses are critical in making the local gin called Uganda waragi. Additionally, "the blender has different flavours such as pineapple is not now available"* (#A17, Male, ten years' experience).

The market's wide availability of new products shows the importance of supply chain innovation. These products have created many opportunities for retailers and distributors to participate in the value chain. The product shortage in the market, especially for commodities, has been solved. The problem is that Uganda's manufacturing firms need to produce capital and durable goods, which allows manufacturers to start producing capital goods.

Table 5.6: Benefits of Supply Chain Innovations

Variables	Frequency	Percentage
	(n)	(%)
Categorical Themes		
Energy	32	10%
Firm performance	137	41%
Social benefits	45	13%
Technology	35	10%
New products	46	14%
Systems & Process	39	12%
Total	334	

Table 5.6 shows the benefits of supply chain innovations, where 41% of the data was coded to firm performance, 14% to new products, 10% to energy, and 13% to social benefits. These codes show the importance of supply chain innovations.

5.11 Cross-Case Analysis Summary

The research had five primary cases/firms from Uganda. Each firm is comprised of upstream and downstream actors. The empirical evidence from the cases showed that the primary themes in the research cut across all the firms. The analysis was organised according to the research questions integrated into the research themes. The findings showed that firms in Uganda deploy a similar approach in ameliorating institutional voids, albeit with some minor differences between firms.

All manufacturing firms in Uganda primarily implemented supply chain innovations and firm strategies to mitigate (Basar et al., 2018).

The research revealed that manufacturing firms respond to institutional via acceptance or attempt to change the condition of the market. In contrast, other firms use the enter, wait, or exit strategy to respond to voids (Giachetti, & Peprah, 2020). The Shoprite franchise, the downstream supply chain partner for manufacturing firms in Uganda, has announced its exit from Uganda. In addition, the firms applied supply chain and business model innovations to address institutional voids (Colovic, & Schruoffeneger, 2021). Manufacturing firms in Uganda have used partnerships as a core strategy to manage institutional voids. Firms also used tailored business models to ameliorate voids (Kumar & Srivastava, 2019).

Most manufacturing firms operate within the region and, therefore, can adapt the business model to suit the country's operational context and address specific institutional voids. Supplier development and relationships feature among the strategy used by firms to respond to institutional voids (Brix-Asala, & Seuring, 2020). The need for more credible suppliers in Uganda is a problem for Uganda manufacturing firms, and evidence shows that firms have developed suppliers to fill this gap.

The study reveals barriers manufacturing firms face in implementing supply chain innovations and firm strategies to lessen institutional voids (Gupta et al, 2020). The cross-case analysis evidence provides insightful themes such as collaboration, cost, infrastructure, regulations, skills gap and technology (Roldan Bravo et al., 2020). The study reveals a need for more collaboration among manufacturing firms to ease institutional voids (Martínez-Costa et al, 2019). This is a severe barrier because, through collaboration, firms can pull resources together and address industry gaps. A good example was given by a participant who reiterated that manufacturing firms collaborating

with one another would be in a stronger position to address upstream and downstream supply chain bottlenecks (Wang et al, 2020).

Furthermore, on the theme of barriers to supply chain innovations in Uganda, the study revealed that the cost of doing business was high and the margins slim ((Doh et al., 2017). Furthermore, the cost of capital is high in Uganda compared to other markets, and the revenues are low because of the smaller middle class. These factors impede the ability of manufacturing firms to implement innovations because they are faced with capacity constraints (Darwish et al., 2020). In addition, the infrastructure in Uganda could be better and impact the supply chain. This problem was frequently mentioned in the interviews with participants. The regulatory environment presents another challenge to manufacturing firms and impacts of innovation potential of the firms in the case study (Kim et al, 2020). Lastly, the problems of skills and technology as barriers to supply chain innovations were visible from the evidence gathered across the cases.

On the theme of the benefits of Innovation to manufacturing firms, the cross-case analysis data presented evidence to show the benefits accrued to manufacturing firms in Uganda. The keys benefits included reduced carbon emission, cost saving, limited collaborations among some firms, the building of absorptive capacity, new product development, improved financial performance, the social impact of innovations, renewable energy, skills development, supplier development, employment opportunities, technology absorption, reduced information asymmetry (Aboelimged, & Hashem, 2019).

The manufacturing firms in Uganda have significantly scaled up innovations. However, numerous challenges still require readdressing to optimise the benefits of innovations. In the five firms studied, the overall data revealed that over the past five years, there had been an effort to address institutional voids using supply chain innovations and firm strategy.

The institutional voids identified in the cross-case analysis were broadly categorised under four themes: capital, labour, macro institutional voids and product voids. The case evidence showed that manufacturing firms encountered institutional voids in these broad categories. However, the severity of the impact was moderated by firm ownership type, size, experience, firm age revenue and home country ties. MNCs were found to adapt to managing institutional voids compared to family-owned firms because of their experience and economies of scale (Luo & Chung, 2013).

In the study, four cases were MNCs compared to the family-owned firm. The performance of the MNC was better than the family-owned firms. However, family-owned firms knew the context and how to run a business in a challenging environment compared to MNCs. The connection to the local communities also provided own family firms with crucial advantages in doing business in an environment where most MNCs take time to adapt (Mothobi & Grzybowski, 2017).

5.12 Within Cases Analysis Summary

The study represented five stands alone supply chains with upstream and downstream partners. The aim was to examine the overall supply chain network of the individual supply chain. The five supply chains manufactured beers and spirits, carbonated drinks (sodas), construction materials, and sugar. The data collected across the supply chain were coded and assigned to the themes that formed part of the research questions. The code was developed for the data collected from participants in single cases.

The first case (supply chain) was coded K1, which was firm manufacturing beers and spirits. The firm has a strong footprint in Uganda. The 73-year manufacturing firm started as a state entity but is now a multinational corporation. The supply chain network for the firms is vast, and the level of operations is sophisticated. The findings from the case showed that the critical institutional voids faced by this firm were primarily macro institutional voids that impacted its operation in

Uganda. The supply chain innovations used to deal with these voids, and a good example was energy consumption. Manufacturing firms use a lot of energy and have adopted renewable energy plans to mitigate this problem (Tumusiime, 2020; Elia et al., 2020). The supply chain adopted a robust business model to improve operations efficiencies. The innovations significantly reduce the impact of institutional voids (Geissdoerfer et al., 2018).

The second case was a carbonated drink manufacturer. This firm started as a government-owned entity but was privatised and is now part of a multinational corporation. It operates an extensive supply chain both upstream and downstream. The main findings from this supply chain were how it significantly reduced the impact of the firm's operation on the environment. The firms built a new recycling plant for recycling plastic bottles (Bernon et al., 2018). The supply chain innovations have created jobs and absorbed marginal and vulnerable community members into the economy. The critical attribute of this supply chain is its ability to promote inclusive growth and supply chain sustainability. The social innovations in this supply chain have benefited the economy (Guerrero & Urbano, 2020).

The third case was a construction manufacturing firm. The company also started as state-owned but was privatised. The company is one of the three main competitors in Uganda's construction material supply chain. It operates many small distributors across its downstream supply chain in every trading center and town in Uganda. The findings from the case showed that several bottlenecks exist in their operations, but the company has used supply chain innovations and firm strategies to alleviate this problem. One leading Innovation found was around energy consumption (Zaman & Abd-el Moemen, 2017). The firms partnered with the local community/farmers to grow coffee. The coffee husk is critical in burning limestone to make cement. The project was very innovative, and one of the participants reiterated that "as coffee trees grow, carbon dioxide is a

trap" and only released when it is used to burn limestone." The practice can reduce carbon emissions because of the firm's operation and provide the local communities with an income. This was a win-win scenario for the environment, the farmers, and the company.

The fourth supply chain was a sugar manufacturer. The family-owned business has been in Uganda for over 85 years. The business was interrupted when Amin expelled the Indians from Uganda in 1972. However, this firm has resumed regular operation and significantly contributed to the economy. The supply chain involved small cane growers who supplied cane to the sugar mills owned by the firms. The downstream distribution employs many locals in small towns and trading centres (Kardes et al., 2021). The key innovations in this supply chain have been using sugar mill waste to produce electricity. In addition, the firm has developed new product lines, such as spirits (gin) which other firms use in Uganda (Awwad & Akroush, 2016). The findings showed that the response to institutional voids for family-owned businesses differed from the other supply chains in these relationships. Building trust and political ties to the government was necessary due to the company's experience during the 1970s.

The fifth supply chain was a beer manufacturer. This supply chain is configured as the first supply chain in the case. A group of businessmen started the firm in 1951. It was family-owned until 2001 when SABMiller acquired it, and since 2020 become part of InBev. The firm markets multiple brands of beer in the Ugandan market. The institutional voids encountered are like the rest of the manufacturing firms. The response to institutional voids through supply chain innovations has resulted in unique business processes (Mc Loughlin et al., 2021). In addition, the company markets a brand that is 100% local ingredients. The local farmers have supplied the raw materials (sorghum) to manufacture the eagle beer. The firm has two plants in Mbarara and Kampala. The opportunities created by the firms have a significant impact on the local community (Ozdemir &

Gupta, 2021). The supply chain has multiple distributors across the borders of Uganda in Rwanda, South Sudan, and the eastern DRC.

To recap, the results from within the case analysis and cross-cases discussed across the themes integrated with the research questions. The results show that all the firms in the case study have adopted supply chain innovations and firm strategies to address the challenges of institutional voids. This research offers persuasive arguments why supply chain innovations and firm strategy can respond to Uganda's institutional voids.

CHAPTER SIX: DISCUSSION & INTERPRETATION OF RESULTS

"If it doesn't fit you must acquit."— Johnnie Lee Cochran Jr. (1995) OJ Simpson Defense Attorney.

"The law has no compassion. And justice is administered without compassion."— Christopher Darden. The OJ Simpson Persecutorial Attorney.

6.1 Discussion of Quantitative Results

6.2.1 Institutional Void and Supply Chain Innovations

The empirical results did not support the hypothesis that institutional voids directly influence supply chain innovations. The path analysis showed no significant direct relationship between institutional void and supply chain innovations in emerging markets. This robust result suggests a mediating variable linking institutional voids and supply chain innovations. It means that before an innovation, specific prerequisites are necessary to drive supply chain innovations (Kabadurmus, 2020).

This result shows that institutional void does not result in supply chain innovations, but certain variables, such as firm strategy design, respond to institutional voids, resulting in supply chain innovations. In contrast, Wong, and Ngai (2019) state that several innovation activities are present in the supply chain, such as *"logistics-oriented innovations activities, markets-oriented innovation activities, technology-oriented innovations activities, operation efficiencies, service efficiencies, environmental and social innovations"* p.4. Innovations are present where there are substantial innovation deficits.

Other studies have shown that foreign competition in emerging markets results in supply chain innovations (Gorodnichenko et al., 2010; Nuruzzaman et al., 2019). In many cases, these emerging markets have a certain degree of institutional voids; therefore, MNCs must focus on innovations

in the supply chain to compete in these markets. Thus, the result from the data supports the literature. Institutional void is an antecedent to supply chain innovation (ur Rehman et al., 2020). The results show no direct causal link between institutional voids and supply chain innovations. However, the Institutional Voids are antecedents of supply chain innovations such as competition in emerging markets.

This argument aligns with Kumar et al. (2017), who argued that innovation was a critical success factor in the emerging markets' supply chain and attributed the success to superior supply chain performance. Strategic resources that create a competitive advantage are warranted in the supply chain before any innovations can occur in the supply chain (Kabadurmus, 2020). Innovations require resources, as supported by the resource view of the firm.

6.2.2 Supply Chain Innovations and Firm Performance

The empirical results support the hypothesis that institutional voids directly influence supply chain innovations. The relationship was a significant and direct relationship between supply chain innovation and firm performance in emerging markets, which means it did not involve a mediating variable. The empirical result matches what other scholars have found out. Kumar et al. (2017) argues for supply chain innovations to improve firm performance. The supply chain is a valuable network and influences how firms perform in emerging markets because stakeholders can use the supply chain to unlock value in the network. The supply chain offers significant advantages to MNCs operating in emerging markets and resource-deprived countries (Flynn et al., 2015).

The opportunity to significantly reduce the transaction cost in emerging markets lies in the supply chain, which then benefits firms by lowering costs and improving margins (Thongrawd et al., 2019). Other issues that impede firm performance in emerging markets, such as institutional voids, can be resolved through innovations in the supply chain to remove some of these obstacles, such

as poor infrastructures and others seen in emerging markets such as Uganda (Barriga & Fiala, 2020).

6.2.3 Institutional Voids and Firm Performance

The empirical evidence from the data did not support the hypothesis that institutional voids directly influence firm performance. Furthermore, according to the data, the path analysis showed no significant direct relationship between Institutional Voids and enterprise performance in emerging markets. This result sharply contrasts with other studies showing that Institutional Voids negatively and positively influence firm performance in the emerging market. First, institutional voids are negatively seen as reduced firms' profitability because of the high transaction cost. Rehman et al. (2020; p.12) found that institutional voids create risks such as "social risk, credit risk, product market, operating uncertainties, knowledge and skill biases and decision-maker risks due to bounded rationality," and this risk inhibits firm performance. Akbar et al. (2017) state that institutional voids also impact SME export performance and capabilities. The literature is relevant to the Uganda economy, where there is a need to grow the export base through industrialisation and export promotion strategies (Abraham et al, 2020).

The benefit of institutional voids in emerging markets can impact the opportunities created. Institutional voids provide firms in emerging markets opportunities to develop innovations that can improve firm performance. Gao et al. (2017) and institutional voids can lead to the firm's long-term survival if these voids are identified and mitigated. McCarthy and Puffer (2016) recognised that institutional voids could create opportunities for individuals and firms in emerging markets via innovations as new solutions are advanced to address the market gaps. The inventions help improve competitive advantage, directly leading to firm performance in emerging markets. Institutional voids guide entrepreneurship and emerging new ideas to counteract the problem in

the markets place. In this way, it becomes an advantage and an antecedent of firm performance (James, Sawant, & Bendickson, 2020).

A study in Ethiopia showed that "normative and cognitive institutional pillars positively correlated to firm performance" (Mohammed, 2020; p,1). This finding is significant, although it differs significantly from the finds of the present study from Uganda, where there would be an expectation of similar results given the geographical boundaries and almost identical institutional bricolage.

6.2.4: Institutional Voids and Firm Strategy

The empirical evidence confirms the hypothesis that institutional voids directly influence firm strategy. The path analysis showed a significant direct relationship between institutional deficit and firm coordination in emerging markets. This result is substantial because firms must design strategies to counter institutional gaps in the market.

Many firms overcome institutional voids through devising strategies, for example, arbitration (Pinkham & Peng, 2017), reputation-based strategy (Gao et al., 2017), reducing transaction cost (Doh et al., 2017), innovations (Wang et al., 2020), entry mode strategies (Giachetti, & Peprah, 2020), supply chain strategies (Choi, & Luo, 2019).

Besides, firms tailor specific strategies based on the nature of the institutional voids in a particular market and whatever actions the firm employs to solve the institutional gap in the marketplace. In Uganda, the firm has used several strategies to deal with institutional voids, such as political ties, negotiations, partnerships, entrepreneurship, and others (Boojihawon et al., 2020; Krammer & Jimenez, 2020; Davies & Torrents, 2017). Firm strategy plays a significant role in the struggle to solve institutional deficits in emerging markets.

6.2.5 Firm Strategy and Firm Performance

This hypothesis was not affirmative from the empirical evidence, but the result showed that emerging market firm strategy influences firm performance as a mediating variable. However, in this study, the path analysis showed no significant direct relationship between institutional void and supply chain innovations in emerging markets.

The firm strategy affects firm performance, and the literature supports this hypothesis by arguing that the company's strategy influence firm performance (Narkhede, 2017). Furthermore, Pei, Paswan, & Camp (2020) show that firm strategy was strongly correlated to organisational performance in emerging markets. Moretti & Biancardi (2020) also indicated that inbound open innovations positively impact firm performance, albeit with a different magnitude.

The firm strategy must address market gaps that influence performance in emerging markets.

However, some studies have shown that "There are mixed results for performance difference among strategic types for different industries and firm size" (Anwar & Hasnu, 2016: p.1). Therefore, the type of strategy firms choose in emerging markets must match the institutional voids it seeks to address to yield the correct results. Several strategic choices are available for manufacturing firms, but research and data are required to ascertain the impact of such strategies (Aguzzoli et al, 2020).

6.2.6 Firm Strategy and Supply Chain Innovations

The empirical results did support the hypothesis that firm strategy has a direct influence on supply chain innovations. The path analysis also showed a significant direct relationship between firm strategy and supply chain innovations in emerging markets. This result was significant because the firm strategy was a mediating variable between institutional voids and supply chain innovations. In other words, before firms can innovate to address institutional gaps, they must have plans to

support these innovations. The findings indicated that business model innovations influence supply chain innovations (Abdelkafi & Pero, 2018; Ahuja et al, 2020).

Furthermore, other scholars Liu & Stephens (2019) and Zimmermann et al. (2019), have shown the link between firm-level strategy and innovations in the supply chain. The result is substantial because business model innovation is necessary to innovate the supply chain and diffuse knowledge to the supply chain partners to build absorptive capacity to acquire, assimilate, transform, and exploit new knowledge to benefit the supply chain (Martinez-Sanchez, & Lahoz-Leo, 2018; Piotrowicz, & Cuthbertson, 2015).

6.3 Mediation Path Analysis

The main hypotheses were the mediation effects of two variables, i.e., firm strategy and supply chain, on how institutional voids influence firm performance in emerging markets. The impacts of institutional void on a firm's performance were negative and, therefore, the relationships between institutional voids and firm performance.

The results showed no direct effect from firm strategy to firm performance, but supply chain innovations mediated this. This result is significant because it differs from other studies regarding the direct effect of firm strategy and firm performance minus the mediating variable of supply chain innovation (Zimmermann et al., 2020; Kwak et al., 2020). Also, other studies have shown that firm strategy and firms' performance have mixed results, but research and development strategy positively affect how firms perform in emerging markets (Wang et al., 2020). Besides, other studies have supported that a green supply chain strategy influences the performance of firms (Bag et al., 2020; Geng et al, 2017; Xie, 2018).

Acar (2020; p 15) found a strong relationship between market orientation strategies, innovation, and firm performance in logistics firms. The study also revealed that "inter-functional coordination and service innovativeness can significantly assist a firm in improving its performance."

The result is significant for Ugandan firms because the direct path from strategy to firm performance is not possible with innovations around the supply chain because of the institutional deficit in the manufacturing sector. Firms must innovate their supply chain to improve performance (Mandal, 2016; Spieth & Schneider, 2016). The situation in Uganda is such that firms must innovate first and then enhance firm performance. Innovating in and around institutional voids is a plausible argument for why supply chain innovations mediate between firm strategy and organisational performance. The result is in line with the finding from Kenya, which showed that information technology innovation influences firm performance (Chege & Wang, 2020).

Also, to innovate, firms must build absorptive capacity in the supply chain, which allows stakeholders to acquire, assimilate, transform, and exploit new knowledge through sharing with other key partners in the supply chain (Zhao et al, 2020). The results from this hypothesis provided answers to the overarching research question of why supply chain innovations and firm strategy are a solution to alleviate institutional voids in emerging markets and increase how businesses in emerging markets perform. This result showed that a firm's strategy and supply chain innovations mediated the relationship between institutional voids and firm performance.

The literature on institutional voids in emerging markets has shown several strategies firms use to mitigate Institutional voids (Li et al, 2021). These include arbitration, family-owned business, entrepreneurship, political ties, institutional innovations, reputation-based view, innovation governance, and business model innovations (Gao et al., 2017; Barbour & Luiz, 2019; Liedong et al., 2020; AlMalki & Durugbo, 2023).

6.4 Indirect Effects Variables

In mediation, the mediator impacts why and how the independent variable influences the dependent variables. The independent variable in the analysis was institutional void, and the dependent variable was the firm performance with two mediation variables: company strategy and supply chain innovations. In the study, company turnover and experience form part of the analysis as control variables.

6.5 Firm Structure Influence Response to Institutional Voids

There was a need to understand how different groups of firms in emerging markets respond to institutional voids. There was a need to know how other firms react to institutional gaps and multigroup hypotheses to examine and test the relationships between the different groups using the firm ownership structure of multinational corporations (MNC), business groups, and family businesses (Luo, and Zhang, 2016; Wang et al, 2015). The multigroup analysis aimed to find the effect of institutional voids on international firms and family-owned businesses. The literature on emerging markets has shown that different groups respond to institutional groups differently (Doh et al., 2017; and Castellacci, 2015).

The results showed no significant difference to indicate that firm turnover affects institutional voids for multinationals, and the family owns firms in emerging markets. The negative relationship between Institutional voids and experience is only significant for the family-owned business.

The results showed institutional voids influence firms' strategy for multinational and family own businesses in Uganda. This significant result confirms that firms respond to institutional voids differently, not uniformly (Manikandan & Ramachandran, 2015). The two groups of firms respond to institutional voids using the same strategies.

The multigroup hypothesis showed no difference that firm turnover influences a firm's strategy for family-owned and multinational corporations. Turnover does not impact how MNCs, and family-owned businesses respond to institutional voids in Uganda (Pangboonyanon & Kalasin, 2018).

The result indicates no difference between how a firm strategy influences supply chain innovation for a multinational corporation and an own family business. There was no difference between the two groups. The results are significant because and reiterate that MNCs and family-owned companies deploy the same strategy, and the same approach works for MNC and family-owned businesses.

The results indicated no difference in the two groups (MNC and Family-Owned Firms) that institutional voids influence supply chain innovations. Family and multinational firms deploy the same broader strategies to respond to institutional gaps in Uganda, albeit with some nuances.

The negative relationship between firm performance and performance and institutional voids is only significant for Family-owned businesses. Family-owned firms perform differences in institutional void context compared to MNCs (Wang & Shailer, 2017; Bhalla & Overton, 2019).

These results revealed no difference in supply chain innovation influencing firm performance between a multinational corporation and a family-owned business. Innovations are similar for MNCs and family-owned companies in Uganda (Agarwal et al, 2020; Shibin et al., 2020).

The relationship between firm strategy and performance harms a multinational corporation and a positive family-owned business. Still, there is no statistically significant difference between the group. The result indicates that MNC and family-owned companies do not have a considerable difference between strategy and firm performance.

The results indicate no difference between the two groups, i.e., the family owns firms and multinational corporations that supply chain innovation influences firm performance. The work

shows the impact of supply chain innovations on performance between MNC and family-owned businesses similarly (Shams et al., 2021).

The relationship between firm performance and firm strategy is negative for multinational corporations and favourable for family-owned businesses. Still, there is no statistically significant difference between the two groups. This result shows that the strategy employed by the organisation influences firm performance for family-owned companies compared to MNCs and other ownership structures in Uganda. Several factors can explain the difference, such as size and decision-making in family-owned businesses instead of MNCs, where there is bureaucratic decision-making (Koch, 2020).

The result showed that a positive relationship between firm performance and firm experience was only significant for a family-owned business. This result indicates that a family-owned firm has experience working in emerging markets compared to MNC, and the literature supports these results. The family-owned companies have trust and social capital because of their size and management styles, which may not be the case for MNCs; this factor influences the performance (Sánchez & Lehnert, 2018; Austin et al., 2017).

Family-owned and multinational corporations are the same regarding how business turnover influences firm performance. Firm turnover is significantly related to firm performance and the results for business groups and MNCs. Firm turnover affects performance similarly (Li, 2018; Tang et al., 2020). The amount of revenue generated by MNCs, and family-owned businesses has the same influence on the performance. This result confirmed no significant difference between the two groups in Uganda.

6.7 Qualitative Research Discussion

6.7.1 Institutional Voids in Uganda Manufacturing

The theme discussed institutional voids in Uganda's manufacturing sector and examined ninety-three open codes that captured participants' perceptions and views about the market phenomena. The rich quotes from participants provided vital information to investigate the nature of institutional voids. The key research question addressed in this theme was the nature of institutional voids in manufacturing firms in Uganda. The subject of institutional gaps had four categories: product, labour, macro, and capital voids in emerging markets, and these themes represent the discourse in literature (Khanna & Palepu, 2005a, and Khanna & Palepu, 2010).

6.7.1.1 Product Markets Voids

The results from the research showed that there are institutional voids in the product market in Uganda with a severe impact on the manufacturing sector. The evidence was 23 open codes that captured participants' experience with the phenomena and how it impacts Uganda's manufacturing and supply chain operations (Barbour & Luiz, 2019; Parmigiani & Rivera-Santos, 2015).

Uganda's manufacturing industry experiences some form of product market voids and impedes these operations. The findings from the cement industries supported this argument, and one participant noted this problem. The product voids in Uganda are associated with low uptake, lack of information on products in the markets, poor quality of the products in the markets, and counterfeitly smuggled products from neighbouring countries (Goedhuys & Sleuwaegen, 2016).

Several scholars extensively debate these findings in the literature (Drouillard, 2017; Rodriguez, 2017; Ashwin, 2012).

The product market void confronted by manufacturing firms in Uganda has had severe consequences and impacts for several years. These problems have resulted from the severe

institutional deficit and the inadequate regulatory environment to alleviate the problem (Alshbili et al, 2021). Because of this product market void, manufacturing companies in Uganda have an uphill tasking competing with peers in the region. These institutional gaps can threaten the long-term survival of businesses in Uganda, primarily family-owned businesses with limited financial muscles compared to their multinational corporation counterparts with access to foreign capital from home countries (Chacar et al., 2010; Pattnaik et al., 2015). The firms in Uganda need more capabilities to develop green products to address some of the voids in the product markets (Rahman et al., 2020).

6.7.1.2 Labor Market Voids

The labour market in Uganda needs to be more organised. There need to be more skills required in the manufacturing sector, especially high-end technological skills, compared to other economies in the region. Furthermore, the pay in Uganda needs to be more motivating, and most firms do not invest in skill development, which has hampered the manufacturing sector. Although the findings indicate that many of the firms employed local people, most of these employees were semi-skilled and primarily worked on this firm's shop floor. They used only about 5% skilled labour force to run complex manufacturing processes that required advanced skills (Saka-Helmhout et al., 2020). The organisational impact on innovation activities and overcoming managerial challenges are essential to building long-term innovation capacity for manufacturing firms in Uganda.

Human and managerial capital is necessary to drive the innovation agenda of manufacturing firms in Uganda (Wang & Cuervo-Cazurra, 2017; van Uden et al., 2017). Nevertheless, the finding from the study showed a severe void in these areas, and it impacts the overall firm-level capability to innovate and address other institutional gaps in other areas, such as product and macro-level institutional voids (Kearney et al, 2018). Employees play a significant role in open innovations in

emerging markets (Roldán Bravo et al, 2017). The labour market voids result in a pool of unskilled labour which possesses' skills that are incongruent with the requirement in the manufacturing labour markets and may result in high cost of product and high transaction cost leading to un-competitiveness (Chipp et al., 2019). So, there are severe consequences in the labour market voids for the manufacturing sector in Uganda.

The evidence has implications for manufacturing firms in Uganda and indicates the need to ease these gaps and strengthen and skill the labour force in manufacturing. There must be amplified cooperation between manufacturing firms and educational institutions to skill human resources in Uganda to drive the manufacturing industry in Uganda. Talent is needed to drive innovations (Becker et al, 2020).

6.7.1.3 Macro Institutional Voids

There are many macro-institutional voids in the manufacturing sector, and several challenges exist, impeding competitive advantage in Uganda (Gligor et al., 2020). One of the main problems is the need for a regulatory framework to protect industries and property rights, and the formal institutions that regulate business need to be more functional (Chan et al., 2022a). The results confirm the literature about macro institutional voids in emerging markets (Webb et al., 2020).

Inchoate institutions are an impediment to commerce in emerging markets, and the results from this research support that argument which may impact business across the EAC region (Deephouse et al., 2016). Manufacturing is a critical sector in many countries, but the undeveloped manufacturing sector in Uganda is partly due to its institutional shortcomings. Institutional patronage, corruption, and bribery is common problems taxpayers face in the manufacturing sector. These resources spent on bribes must be channeled to upscale, innovative activities.

6.7.1.4 Capital Markets Voids

The capital market voids are considered institutional voids in emerging markets (Khanna & Palepu, 2010). Capital market voids are policy mechanism that underpins the effectiveness of capital markets in developed countries" p.23. The central bank, stock exchange, and securities regulatory oversee enforcing these mechanisms. The capital market in Uganda is nonexistent, and the regulatory function executed by the Bank of Uganda is poor. Uganda has one of the highest interest rates, approximately 18%, in sub-Saharan Africa, which severely impedes the performance of the firms (Khanna et al, 2005c).

The capital market void is critical because manufacturing requires capital to support its activities, especially investments in plants and machinery. Funding for machinery and equipment is necessary to boost the manufacturing sector in Uganda. The banks and the payment systems in Uganda need to be more supportive of small businesses due to the high-interest rates and lack of access to capital; hence there is an endless void in financing small businesses in Uganda.

The results from the study indicated that financing and regulations in the banking industry are significant bottlenecks (Alhassan & Naka, 2020). The manufacturing sector in Uganda lacks access to finance, especially for family-owned businesses and small and medium enterprises, which is critical for innovations. The opportunity for growth is limited for these firms, requiring substantive efforts to innovate the system to address these anomalies (Mehreen, et al, 2021). The bottlenecks also constrain innovations in the supply chain and the launching of new products in the markets (Delgado & Mills, 2017). The above discussion leads us to the following propositions.

Proposition: P1a: The Informal & formal institutions collaboration are critical in tackling Institutional Voids in Emerging Markets.

Proposition: P1b: Absorptive capacity supports innovation practices in emerging markets to overcome Institutional Voids.

6.8.1 Response to Institutional Voids in Uganda

6.8.1.1 Accept or Attempt to change the condition of the market.

The findings from this scholarship in Uganda show that firms responded to institutional voids by accepting the status quo or attempting to change the market condition. Several approaches to how manufacturing firms respond to institutional voids include acknowledging the status quo institutional voids and doing nothing about them or changing the market condition, strategy, enter, wait, or exit, innovations, and others (Khanna & Palepu, 2005; 2020).

The evidence from the study is in line with the literature, and manufacturing firms have used these strategies to respond to institutional voids. One of the strategic responses was to accept the market as it is, but some firms have worked to alter market conditions, for example, through adaptations of the business model that works. A robust business model is a must for manufacturing firms to unlock the problems manufacturers face in the Uganda markets (Tan, 2019; Wesley et al., 2020; Barbour & Luiz, 2019). The situation in Uganda demands robust business models and strategies to address the institutional voids (Dorobantu et al., 2017).

There is an implication for the theme. MNCs in Uganda adapt business models from their country of origin, such as South Africa and have used the local innovative business model to reach customers in the markets (Kotabe & Kothari, 2016). Accepting the current market model is not a feasible solution because if the model does not work, it is necessary to change it. Still, the firm must move to innovation and market a new business model to match the market condition. Counteracting institutional voids through business model innovations is a welcome strategy for

MNC and family-owned businesses that form most owner's structures in Uganda (Wiprächtiger et al., 2019).

Scholars have applied several models, such as the bottom of the pyramid (BOP) and grass-root innovations (GRI), to explicate innovations in emerging markets (Kumar & Srivastava, 2019). Uganda has an exceedingly small middle-class population; therefore, all business models must target the bottom of pyramid customers.

6.8.1.2 Compete Alone or Collaborate.

The competition in emerging markets is intense for small middle-class customers. Therefore, firms respond to institutional voids by competing alone, trying to solve the problem individually (Khanna & Palepu, 2010), or collaborating with other firms in the supply chain to reduce the impact of institutional gaps. There are areas of collaboration in the supply chain. As the findings indicate, manufacturing firms may aggregate resources to fight institution voids and form associations such as the Uganda manufacturers association (UMA) to lobby with critical stakeholders to address institutional gaps.

The findings confirm the literature on competition and collaborations to reduce the impact of institutional voids. Specific strategies include joint ventures (JV) signed by partners in the supply chain network. For example, most MNCs used African joint ventures to mitigate institutional voids (Chipp et al., 2019; Aguzzoli et al, 2020). There are several areas of collaboration for Ugandan manufacturing firms to tackle institutional voids, for example, co-sharing packing facilities, logistics hubs, and others. The findings indicated that firms refrain from using JV to alleviate institutional gaps. Still, there was a collaboration between firms to mitigate institutional voids, and this strategy is in with debates in the literature on institutional gaps in emerging markets (Liedong et al, 2020).

Firms in Uganda have also adopted an approach to compete and build their infrastructure, systems, and processes to mitigate institutional voids than collaborate with others. The resource-based view of the firm argued for firms to develop a competitive advantage that other firms cannot replicate. Therefore, firms build these advantages rather than share them with other organisations (Giachetti & Peparah, 2020).

6.8.1.3 Enter, Wait for Exit

Time is essential in tackling institutional voids; therefore, firms can overcome institutional gaps with sufficient time. The experience in Uganda confirms this argument, and evidence suggests that Ugandan firms waited longer to enter new markets such as Southern Sudan, Rwanda, and DRC. Also, entering new markets such as Kenya and Tanzania were less problematic because of the prevailing conditions in these markets. Uganda Breweries started exporting to Southern Sudan after the return of peace and security was achieved, while Hima Cement could not export to Rwanda in the early 2000s (James et al, 2020).

Locally, in Uganda, time was critical in introducing new products. For example, Uganda experienced a widespread shortage of resources between 1970 and 2000. Essential household goods bought or imported from Kenya, such as soap, salt, and sugar, changed in the early 2000s when there was sufficient capacity to produce these goods locally. Uganda went from having a sugar deficit in the 1980 and 1990s to a surplus country. The evidence suggests that time is critical and supports what scholars have argued in literature as a strategy to respond to institutional voids (Khanna & Palepu, 2010).

6.8.1.4 Innovations Response to Institutional Voids

The core argument of this thesis was why supply chain innovations and firm strategy was the critical approach to responding to institutional voids in emerging markets. The literature and

datasets endorsed this argument. Supply chain innovations have a far-reaching impact on manufacturing firms in Uganda at the product, capital, and macro institutional voids level. There are unique potential innovations in Uganda due to several factors, such as the young population, the entrepreneurial spirit of local people, and abundant natural resources.

The study unearths several innovations in the supply chain, which helps alleviate institutional voids in Uganda, and interviews with key informants reiterated the import of supply chain innovation. The manufacturing firms in Uganda can only thrive on a solid supply chain network to move goods and products across and beyond the country. The literature on innovations in Uganda supports this premise. MNC and family-owned business in Uganda has scaled many supply chain innovations adapted to the local needs of the market and address specific challenges (Brix-Asala, & Seuring, 2020).

Most of these new ideas in the supply chain were primarily driven by new technology applications and the Internet of Things to solve payment problems, market information, customer support, and track and trace apps for logistics. Because of the proliferation of mobile phones, an alternative distribution approach is being piloted by several firms (Giannetti & Rubera, 2020). The critical innovations documented in the interview were new processes, products, logistics, and support services in the supply chain seen from the case studies conducted. Green innovations in the supply chain are gaining traction among the firms in the case study (Amoako et al., 2020; Shu et al., 2016). Moreover, this study shows how vital supply chain innovation is to solve institutional weaknesses in emerging markets. Supply chain innovations may result in integration, reducing information asymmetry in the supply chain network. The Internet of Things (IoT) and systems applications and products (SAP), which many firms have implemented, have significantly improved business processes, and substantially reduced the effects of institutional voids in the supply chain (Kshetri,

2017). Firms can communicate with one another and make essential business decisions in real time (Parthiban et al, 2020).

In this research, there is a point that emphasises that frugal innovations are critical in emerging markets. Ugandan firms must learn "how to do more with less" and build a sustainable manufacturing sector. High-performance supply chains are needed to support Uganda's sector and manufacturing firms. Uganda must tap into global supply chains because these are pathways to supply chain innovations and opportunities to build absorptive capacities in the supply chains. In addition, globalisation pressures firms in emerging markets to innovate and do more with less (Agnihotri, 2015; Weyrauch & Herstatt, 2017).

6.8.1.5 Supply Chain Partnerships

These study findings showed that partnerships are crucial to easing institutional voids by manufacturing firms in Uganda. However, there are no clear incentives for firms to collaborate in Uganda; therefore, more than collaboration is needed to alleviate the challenges faced by manufacturing firms (Oguguo et al, 2020).

The sugar manufacturing firms, for example, partnered with out-growers to supply canes for crushing, but the pricing mechanism needs to be more precise. There are voices of dissent about the price the sugar manufacturing firms pay to local farmers. The farmers have complained about the same problem in eastern Uganda, where a fruit factory makes juice through a JV with the government. The collaborations with local firms have broken down. There is waste in fruits because the factory needs more capacity to procure all the grown fruits to make juices. Uganda's formal and informal institutions must be more robust to address some of the challenges highlighted above (Saka-Helmhout et al., 2020).

Deploying partnerships to overcome institutional voids in emerging markets has alluded to a strategy to ease institutional voids (El Ebrashi & Aziz, 2017; Silvestre, 2015). However, partnership rules of engagement in Uganda need to be better developed. Some partnerships have yet to draw contractual obligations due to regulatory voids manifested in widespread corruption in Uganda's judiciary and other sectors (North, 1990; Luiz, 2014; Enderwick, 2017). The partnerships would provide new pathways to innovation because managing the supply chain to extract value for manufacturers would simplify.

6.8.1.6 Replicate or Adapt Business Models

The results from the study confirm what the literature debates about the strategy to mitigate institutional voids in emerging markets through the adaption or replication of business models (Khanna & Palepu, 2010). The finding from the study did indicate that firms adapted or upgraded their business model to target new consumer or customer segments with unmet needs at the bottom of the pyramid due to price parity and the cost of reaching these customers (Winterhalter et al, 2017; Harrison et al, 2018; Sharma et al, 2016).

The firms in Uganda replicated the business model used across sub-Saharan Africa to reach the BoP customers (Rodriguez, 2017). However, some business models have been replicated to mirror the institutional problem in Uganda, for example, regional distribution centres used by many manufacturing firms because of the poor infrastructure and traffic congestions in the central business districts. Some of the business model used in Uganda originates from South Africa, where most MNCs has a strong presence. Replicating business models to alleviate voids is a well-known strategy in literature (Khanna & Palepu, 2010).

6.8.1.7 Local Supplier Development

The results showed early supplier development as a strategy to moderate institutional voids in emerging markets to respond to institutional voids. There is a problem with local suppliers in Uganda, and manufacturing firms depend on suppliers in Kenya, South Africa, and China for most of the strategic inputs. Still, nonstrategic inputs like sales and packaging products have developed local suppliers in the last ten years.

Early supplier involvement is an approach used to identify suppliers who can supply raw materials or products for new product launches or innovations. Century Bottling is a franchise bottler for Coca-Cola-developed fruit suppliers before launching a fresh fruit juice plant in Eastern Uganda. This strategy confirms the literature on the debate about supplier development to mitigate institutional voids in emerging markets (Cole & Aitken, 2019).

Furthermore, other strategies consistent with the manufacturing approach in literature to alleviate institutional voids include using long-term contracts for strategic raw materials such as sugar, malt, and barley used in the brewing industry. Other agreements with original equipment manufacturers (OMES) to avoid costly breakdowns and strategic procurement activities implemented by manufacturing firms in Uganda (Van Campenhout et al., 2020).

6.8.1.8 Supplier Relationships & Institutional Voids

The results from the study verified that supplier relationships were an essential strategy for managing institutional voids, and scholars have debated this in the literature. Suppliers play a significant role in the supply chain network, and mutual relationships and trust are paramount in lessening the effects of information voids in the supply chain (Kingsley & Graham, 2017).

Additionally, trust is essential in moderating supplier relationships in emerging markets in alleviating manufacturers' supply chain problems (Sánchez & Lehnert, 2018). The relationships

permit information sharing between supply chain partners to reduce information asymmetry in the supply chain (Manikandan & Ramachandran, 2015).

Proposition: P2: Manufacturing firms use multiple approach to manage Institutional Voids.

6.9.1 Barriers to Supply Chain Innovations

Several barriers and challenges to supply chain innovations impact the performance of supply chains. The study found that a lack of collaboration, cost, culture, information asymmetry, regulatory voids, skills gaps, poor infrastructure, and technology were significant barriers to supply chain innovations in Uganda (Gupta et al, 2020).

The pathway to supply chain innovations requires substantial resource investment in skills, infrastructure, technology, machinery, and equipment, building vital information to produce and disseminate market data, a stable regulatory environment, and others. To moderate the challenges to innovations in Uganda, regulatory, normative, and cognitive pillars must be carefully examined, and long-term solutions must be. Uganda's informal and formal institutional infrastructure cannot address all identified gaps (Ekman et al, 2020).

6.9.1.1 Lack of Collaboration

The study showed a severe lack of collaboration with supply chain partners, a barrier to supply chain innovations in emerging markets. In contrast, the literature shows the importance of alliances in the supply chain to improve firm performance in the manufacturing sector. Supply chain collaboration is critical for supply chain sustainability innovations (Chen et al, 2017). The discourse in the literature shows that collaborations mediate supply chain performance (Panahifar et al., 2018; Ralston et al., 2017).

There is a need for manufacturing firms in Uganda to collaborate and pilot supply chain innovations to create sustained manufacturing performance in Uganda (Chen et al, 2017b).

Furthermore, the literature has shown that collaboration affects green innovations in the supply chain (Yang & Lin, 2020 Amoako et al, 2020). The findings from this study also depart from other scholars that have highlighted that supply chain collaboration has a crucial ingredient of supply chain innovations (Oelze, 2017; Yang & Lin, 2020).

The lack of collaboration is related to resource scarcity. Therefore, manufacturing firms must prioritise how to invest limited resources, but cooperation is vital because accumulating skills and capital and developing multiple solutions to solve supply chain problems can significantly benefit the entire supply chain (Arzu Akyuz & Erman Erkan, 2010; Chittoor et al., 2015a). The stakeholders must collectively address the barriers to supply chain innovations to overcome institutional voids. Manufacturing firms must leverage supply chain collaboration to build sustainable supply chains in emerging markets (Yunus, 2018; Phung et a, 2018).

6.9.1.2 Financial Challenges of Supply Chain Innovations

An enormous cost is attached to supply chain innovations, a critical barrier to delivering chain innovations in emerging markets. The findings from the study reinforced that cost factors present a challenge to innovations and cost drivers that inhibits supply chain innovations, and one of the areas where cost is a barrier is a technology (Indrawati, 2020). The cost of technology is not affordable to most manufacturing firms in Uganda, so most firms cannot implement new technology. The cost of technology is prohibitive to most manufacturers.

Supply chain innovations involve significant investments but given the other institutional voids in the capital markets that prevent firms from accessing the new source of finance, the ability of firms to invest in innovative technologies in their supply chain is limited (Askari et al, 2020; Rodríguez-Pose, & Zhang, 2020). The findings emphasise the need to pilot low-cost innovations that firms must implement in their supply chain to ensure manufacturers can access low-cost technology.

6.9.1.3 Poor Innovation Culture in Uganda

The findings showed that cultural barriers were a pivotal setback to supply chain innovations in Uganda. There is indifference to the uptake of new innovative ideas because of a lack of trust in the market, and consumers' preferences and tastes oppose these new products and brands. Previous studies confirm these findings that some innovations have problems with uptake because of cultural perceptions. For example, there have been reservations about the foot safety of new product launches (Le-Anh, & Nguyen-To, 2020).

The practices and culture of consumers may impact innovations. Some innovations are readily not accepted by the markets because of normative concerns, for example, road construction, the use of technology, and others (Seo et al, 2014). Also, some firms are comfortable conducting business in a specific manner, so new ways of doing things are resisted (Tampa et al., 2019; Hueske & Guenther, 2015).

The results have implications for supply chains in Uganda. Cultural barriers and resistance to new products and methods of doing things present severe challenges in transforming supply chains in Uganda. For example, payment platforms still use a lot of paper money because there needs to be more trust in technology as a payment system. Traditionally people prefer to use paper money. Besides, mobile money as a means of payment still has gaps to be cured. Not all entrepreneurs are tech-savvy to use these new platforms to transact business.

6.9.1.4 Infrastructure Challenges in Uganda

The study showed that infrastructural voids in emerging markets, such as poor roads, were examined in this study in Uganda, and these voids are a barrier to supply chain innovations. The poor infrastructure is a barrier to supply chain innovations in Uganda, and minimal needs to be done to address this phenomenon. The roads are in a bad state. The high logistics cost from

Mombasa to Kampala is high, and there is also a poor infrastructure problem in the downstream supply chain, especially outside Kampala (Mothobi & Grzybowski, 2017). The quantity and quality of infrastructure in Uganda could be more robust to sustain supply chain innovations in Uganda (Chakamera & Alagidede, 2018).

Using drones in the supply chain can transform logistics, but innovation in Uganda is impractical due to poor infrastructure. Implementing drone innovations in Uganda is impossible because of infrastructural problems where issues with postal addresses, poor planning in the country, and street names are not readily visible. This infrastructural problem maybe not be good to have, and several policy papers developed to solve this problem and support debates on this problem (Fernández-Méndez et al., 2015).

The infrastructure in Uganda needs to be better planned and developed compared to Kenya and Tanzania, and the overall cost of infrastructure investment is low in Uganda. The standard gauge railway, for example, is meant to alleviate this void. Still, the implementation needs to catch up and catch up. Nevertheless, Uganda continues to need better infrastructure compared to Kenya and Tanzania, and it presents a barrier to the implementation of supply chain innovations and affects the economy (Ochieng et al., 2020).

6.9.1.5 Regulatory Voids in Uganda

The findings from this study showed that regulation impeded supply chain innovations in Uganda. Regulation in Uganda is weak and acts as a barrier to innovations in the supply chain (Qian, Liu, & Wang, 2018).

Regulatory voids are a barrier to supply chain innovations in Uganda. There is a need for more enforcement of intellectual property rights in Uganda to protect innovation patterns. The judicial systems are fragile to adjudicate on invention, and intellectual property rights capital is adequately

protected. Property rights remain a challenge in Uganda (Enderwick, 2017). The legislative gap and innovations are comprehensive, and appropriate bills are critical to addressing the gaps that create these barriers to innovations.

The protection of intellectual capital is essential to innovation implementation in emerging nations to avoid counterfeit products and goods in the market. The regulatory institutions in Uganda, such as the Uganda Revenue Authority, Bank of Uganda, National Bureau of Standards, and others, must be practical and address the regulatory voids manufacturing firms experience (Kim et al, 2020).

6.9.1.6 Training, Learning and Development

The human capital barrier to supply chain innovations in Uganda is more to do with a need for more skills development in the technological aspect of operations to drive innovations. The study findings showed that most skilled engineers are sent to MNCs in South Africa and other countries to learn skills to operate new machines, such as bottle lines installed in factories and industries. However, the number of such engineers could be higher. These engineers are then poached by other industries and therefore inhibit innovations because there are incomplete projects when a skilled engineer leaves one company for another. More engineers must work in the nascent Ugandan oil and gas industry.

Furthermore, the findings show that the skills gap remains a barrier to supply chain innovation. Managerial and technical people are limited in number. The shop floor workers need more skills to run complex processes using the latest technology in manufacturing and require training and development with support for research and development, which most firms in Uganda still need to have. Machine learning could alleviate some of these problems, but unfortunately, most firms do

not have vital research and development departments and the absorptive capacity to build this knowledge (Jahani et al, 2017).

The budget for research and development needs to be improved. Therefore, addressing these barriers will require substantial sacrifice and government intervention to build R&D capacity to develop long-term human capital to address the skills shortage and industrialise Uganda in the long run (Wang et al, 2020). The competitive advantage in the East Africa region in manufacturing is found in Kenya because the human capital is much more developed (Ochieng et al, 2020). The cost of production is low compared to other countries in East Africa. Therefore, Kenyan products are more competitive in regional trade and export to high-end markets in Europe and other emerging economies such as Brazil and China (Alam et al, 2020).

6.9.1.7 Technological Barriers and Institutional Voids

The technology barrier to supply chain innovations in Uganda is the main setback to how manufacturing firms can reinforce innovations. The results show that the impact of technology in supply chain innovations and blockchain applications in emerging markets, for example, has lagged because of the poor technology infrastructure in many countries (Kouhizadeh et al., 2020). In Uganda, blockchains could benefit many manufacturers and drive innovations. In the food sector, eco-technology is necessary to reduce waste in the industry (Simms et al., 2020).

Technology as a barrier impacts how manufacturing firms can innovate out of institutional voids (Apte & Petrovsky, 2016). The findings showed evidence that one of the cement firms is busy developing new sources of alternative energy, such as using the by-products from beer production, which is a new idea and can significantly reduce electricity usage in industries (Kutan et al., 2018). However, the cost of implementation is high and not attainable by many firms in Uganda (Prud'homme & von Zedtwitz, 2019).

This evidence illustrates that technology is critical, and no innovations in the supply chain can occur with the application of technology. Uganda's supply chain innovation space is still nascent, and the application of technology will drive the sector to maturity before this decade ends. There needs to be more funding, skills, and policy to increase technology acquisition in Uganda (Chen, Cui, Li, and Rolfe, 2017). The manufacturing firm must use new technology instead of the decade-old machines and equipment imported by manufacturing firms and installed in Uganda and training employees to operate these machines (Queiroz et al., 2020; Ahuja et al, 2020).

Proposition: P3a: Institutional norms and culture is a strong barrier to supply chain innovations in emerging markets manufacturing firms.

Proposition: P3b: Partnerships & collaborations between manufacturing firms in Uganda are antecedents to resolve institutional dilemmas in the country.

6.10.1 Supply Chain Innovations in Uganda

The findings discovered many supply chain innovations in Uganda across all the supply chain networks, which can transform Uganda's manufacturing firms. The fourth research question described specific supply chain innovations practiced by manufacturing firms in Uganda.

6.10.1.1 Process and Systems Innovations

The findings showed that most manufacturing firms implemented systems and processes in Uganda to improve the supply chain and resolve institutional voids. These findings are in line with previous research that has highlighted the benefits of these processes, and these innovations are making manufacturing firms across the industries, such as brewing and soft drinks, develop new business processes that are critical to improving performance and competitive advantage (Nuruzzaman, Singh, & Pattnaik, 2019).

The bottleneck in the distribution is a severe challenge in the supply chain, but firms such as Uganda Breweries have executed new business processes to improve the distribution processes. The distributors have an easy ordering process, and therefore the product lead time has significantly reduced because of the modern business process (Nguyen & Harrison, 2019; Paul, 2019).

Other results showed that process improvement was vital over the last five years and reduced information voids in the market. The information asymmetry in the supply chain and the process require data to transact business, but there are disparities in this data. The mobile apps application has assisted in overhauling Route to Market efficiencies to deliver the product to the customers despite poor infrastructure. Customers are using apps to redesign business processes to provide real-time data to manufacturing firms to obtain products faster. These innovations support business transactions and BoP customers (Vieira et al, 2019).

6.10.1.2 New Product Development & Innovations

The findings from this study showed that several new product innovations had taken place in Uganda over the last three to five years, providing consumers with a wide variety of choices to make. The food and beverage manufacturers led the pack with innovations, and the construction industry also developed a new product. However, the product is an essential household commodity that has no significant impact on long-term industrialisation in Uganda.

Although the pattern of supply chain and other innovations witnessed in Uganda follows practices in the ways described in the literature, such as clarification, legitimacy, localisation, and consolidation, these innovations are far from creating a tangible impact on the economic transformation of Uganda (Amankwah-Amoah et al, 2018b). Still, manufacturers must start from somewhere, no doubt. The Buy Uganda Builds Uganda (BUBU) is an excellent start to innovations

at the bottom of the pyramid in Uganda, and Kenya has implemented a similar initiative (Banya, 2018; Mulwa, 2018).

The bottom-of-the-pyramid innovations and the circular innovations in emerging markets can transform the economy over time, and therefore sustainability is critical to making progress in these areas (Lahane et al., 2020). Any supply chain innovation must be meaningful, impactful, and catalyse to generate more innovations. The present innovations significantly build absorptive Capacity in Uganda (Khan et al., 2019).

Disruptive innovation must focus on offering different value propositions in Uganda, like how it took place in China, and this will provide a long-term sustainable pathway to industrialisation (Oelze, 2017; Williamson et al, 2020). Durable products must be part of the innovations strategy and reduce other structural problems in the economy, such as the balance of payment and foreign exchange shortage used to buy durable goods from other countries (Williamson et al., 2002).

According to Vertakova et al., (2016), disruptive innovation is essential and uses new technology to radically change manufacturing output in emerging markets.

6.10.1.2 Regulatory Innovations

The regulatory environment saw some innovations support business, but the rule of the game still needs to be well defined (North, 1990). Law enforcement needs to be stronger in certain areas that require attention. The sale of alcoholic beverages under 18 years is under review through new legislation, but this was long overdue.

MNCs embraced these regulations because of the social pressure in the country of origin where the sale of alcoholic beverages to minors and prohibited. The regulatory voids in emerging markets are a problem and well-articulated in literature, and Uganda has no exception. Some of the critical challenges in Uganda, such as counterfeit products, smuggling, and contractual voids, have

significantly reduced compared to what it was in the last decade. The regulatory environment has attracted outside MNC firms and investors, but apparent gaps warrant action (Lambin et al., 2020). The results are significant because environmental factors are crucial in the supply chain, and innovations to reduce the impact of the supply chain reduce global warming is considerable progress in the supply in emerging markets (Recanati et al., 2018).

6.10.1.3 Renewable Energy Innovations & Climate Change

There is a challenge of energy use in the manufacturing sector, and the category describes the innovation in the renewable energy sector. This category has ten open codes to support. Renewable energy is crucial, but there are challenges for the big four manufacturing firms in implementing renewable energy solutions; some progress is taking place in this direction (Gabriel, 2016).

Innovation in the agriculture sector supplies the brewing industry with locally made products. These are sustainable innovations that will significantly impact global warming in Uganda. For example, fossil fuels and biomass fuels come from natural plantations and waste from agriculture. The trap for carbon dioxide piloted by one firm in the cement industry can protect the environment and transform the supply chain in the longer run (de Vargas Mores et al., 2020).

Overall, there has been significant innovation in energy usage by manufacturing firms, and a substantial reduction in carbon emissions in the manufacturing industry has occurred. All the manufacturing firms in the case study have implemented recycling waste and green energy. These renewable energy initiatives or innovations need more funding to sustain them (Kutan et al, 2018).

6.10.1.4 Social Innovations & Poverty

The social innovations present a new perspective for manufacturing firms in Uganda. The results have shown that most manufacturing firms have embraced social innovations and implemented critical elements of social innovation in the supply chain (Gupta & Gupta, 2019). The findings

showed that manufacturing firms in Uganda had executed social innovations that have benefited the supply chain. Social innovations confront wicked problems in the supply chain, such as poverty and climate change issues seen in most emerging countries (Guerrero & Urbano, 2020; Rao-Nicholson et al, 2017).

The manufacturing firms have implemented various social innovations such as planting trees, employing women groups to recycle packaging products, use of local raw materials from local firms to manufacture products (Rao-Nicholson et al, 2017). These innovations and integration of local people in the supply chain have solved social problems such as poverty and provided income for local people to access education and other services. The farmer groups in Northern Uganda supplying raw materials to brew beer have greatly benefited from this approach and contributed to social transformation.

Social innovations in emerging have the potential to create impact and sustainability in the supply chain (Stephan et al, 2015). An excellent example from this study was how one cement firm was helping local people plant coffee and then use coffee husk as a renewable energy source in production (Rezaee, 2018). In this case, there was a win-win solution for the firm, environment, and population (Mandal, 2020). Social innovations can develop social enterprise and entrepreneurship in emerging markets (Zhukovska & Salimon, 2020; Ebrashi & Darrag, 2017).

6.10.1.5 Technological Innovations & Manufacturing

Technological innovation in emerging markets is pivotal to manufacturing and the supply chain in Uganda. An example drawn from the study showed that technology application in the supply chain had improved interconnectivity between the manufacturing firms and supply chain partners in Kenya, Tanzania, South Africa, and others (Ekman et al, 2020). The benefit has also been seen in technology innovation linkages between the manufacturer and the original equipment

manufacturer (OEM), scaled-up plant maintenance activities, and improved production capacities. Blockchains are the next significant innovations in the supply chain, and this research found little evidence of application in Uganda. Still, firms must build absorptive capacity to invest in this technology (Kouhizadeh et al, 2020).

The role of technology in the supply chain will continue to be significant. Building scalable capacity to integrate technology in all processes and systems in the supply chain is critical. Technology will allow for the greening of products and improving quality, which is still problematic in Uganda, as seen in the recent ban on exporting fish products from Uganda to the European Union (EU) market. Uganda firms must build mobile-based traceability capabilities in their supply chain and eliminate some severe problems in the supply chain (Lin et al, 2020).

Proposition: P4a: Social Innovations are valuable assets in managing the wicked problems (Poverty, Disease & Climate change) in Emerging Markets.

Proposition: P4b: Robust Regulatory Environment is critical to manage Institutional Voids in the Manufacturing Sector in Emerging Markets.

Proposition: P4c: Supply Chain Innovations and Additive Manufacturing encourages inclusiveness and participation in local value chain development in Emerging Markets.

6.11.1 Why Supply Chain Innovations Matters in Uganda

The findings revealed the benefits of supply chain innovations to manufacturers, customers, and consumers in Uganda. The supply chain benefits of innovations are well documented and found in the following areas: energy and infrastructural, firm, social and technological performance. The final research question discussed these supply chain advantages in emerging markets and showed the assailable benefits debated in the literature.

6.11.1.1 Energy and Infrastructure

Globally, there are concerns about energy and energy consumption. The problem is more pronounced in the manufacturing sector because the demand for energy in the industry continues to grow hence the competition from humans and nature. The effects of manufacturing on global carbon emissions and global warming are acutely known (Grant & Hicks, 2020). To solve manufacturing problems to the environment, scale-up innovations and findings from Uganda show that manufacturing firms have started to innovate to solve some of the issues in their industry.

The results from the study emphasise the value of renewable energy innovations in the manufacturing sector in Uganda and offer valuable practical lessons manufacturing firms can use to improve their energy consumption and protect the environment. Two manufacturing firms in Uganda have been at the forefront of piloting renewable energy in their manufacturing processes. These firms have used solar power, biogas and biomass fuel, recycled water and packaging materials, and implemented processes to reduce water consumption and build water treatment plants to ensure that industrial discharge them into Lake Victoria (Matsuo, 2019). These innovations contributed to ameliorating the energy stress in the supply chain and reducing energy consumption and the cost of manufacturing in a resource constraint environment, directly addressing the institutional voids (Elia et al, 2020).

6.11.1.2 Firm Performance in Uganda

Supply chain innovations in an antecedent of firm performance. Compared with the quantitative study, the results revealed a relationship between supply chain innovations and organisational performance (Alam et al, 2020).

The most thought-provoking results were using a new and innovative RTM (route to market) developed by Coca-Cola franchise bottlers to access the bottom of the pyramid customers through

last-mile strategies and mega distribution points Coca-Cola products closer to the consumers (El Ebrashi & Aziz, 2017; Boojihawon et al, 2020). The system has been successful other manufacturers have adopted it in Uganda. The revenue of most firms has gone up in the last three years, and there has been significant growth in revenue and market share for both Century Bottling Company and Uganda Breweries (Wang et al., 2020; Agarwal et al., 2020).

6.11.1.3 Social Performance in Manufacturing Sector

The social performance of the supply chain is significant in assuaging poverty in emerging markets, especially in Uganda, where the poverty level is still high at 28% (UBOS, 2020). The study showed how the manufacturing supply chain had a social impact in Uganda. The social impact of supply chains in emerging markets is well articulated, and most manufacturing firms attempt to integrate socially disadvantageous consumers into their supply chains (Tang, 2018).

The supply chain has uplifted thousands from poverty because of participation in the value chain. For example, local people grow sorghum and maize and supply to the brewing factors, and local farmers also supply mangoes and oranges to bottle juices. Women are using products such as straws to weave baskets and other art products. Coca-Cola built a new plant for recycling plastic bottles, and the local people collect bottles and exchange them for money; women mostly do this work (Saeed et al., 2022).

The social transformation in the supply chain is coming to fruition because of the supply chain innovation practices adopted by the top manufacturing firms in Uganda. Finding from the cement industry showed the value of these innovations. Hima Cement has invested in the community by building schools and hospitals, and these investments have significantly improved the lives of the local communities. These transformations are alluded to in other research (Yeoman & Santos, 2019).

6.11.1.4 Technological Performance

Supply chain innovation has shown how technology usage has increased the scalability of technology in the manufacturing supply chain in Uganda. This dataset indicates that this uptake has been prodigious, meaning that technology uptake has increased in the manufacturing sector over the last three to five years (Hazen et al., 2016). One aspect of this technology is 3D printing and its potential to significantly reduce the cost of original equipment manufacturer (OEM) parts because of the Internet of Things (IoT). Manufacturers can print their spare parts using 3D printing so long as they have the technical specifications from the OEMs. 3D printing is the next significant innovation for supply chain emerging markets. It is a disruptive innovation that will disrupt manufacturing in emerging markets and provide access to technology at a relatively low cost (Sasson & Johnson, 2016; Mohr & Khan, 2015).

The scalability of technology in emerging markets will improve manufacturing in Uganda and increase the competitive advantage that has been lacking for a long. Also, it will address quality voids through supply chain traceability technology and position Uganda as an agro food processing hub in East and Central Africa, given its rich agricultural climate and low labour cost. There is a need for firms to adopt new technology in their manufacturing processes.

6.11.1.4 New Product Development

This study documents several new product developments launch through interview with key executives in the manufacturing firms. The outcome of these product innovations has been increased availability of products in the supply chain, although there was no research on how these innovations impact the product cost (Awwad & Akroush, 2016).

Dispensing products via keg technology for beer and making draft beer available to millions of people alleviate the problem of illicit alcohol in Uganda. The availability of new products in the

market boosts consumption and directly impacts Uganda's gross domestic products. Uganda currently produces surplus sugar and milk, and an aggressive market is required to find countries where these products are needed. Besides, these products have created opportunities in the downstream supply chain for retailers and other distributors (Başar et al., 2018). It has significantly increased the entrepreneurship potential of Ugandans and widespread involvement in the value chain. The product void for essential household commodities eased through innovations and increased capacity. However, one of Uganda's critical challenges is the low population level in the middle class. The second problem is that most innovations have targeted essential consumer goods, not capital goods.

Proposition: P5a: Social Innovations are critical to the birthing new Industries in Emerging Markets using Circular Economy principles.

Proposition: P5b: Technological innovations such as 3D printing are a critical driver of supply chain innovations in the emerging markets manufacturing sector and significantly lead to cheaper manufacturing processes and lower prices for consumers.

6.12 Comparison of Results and Findings

Comparing and contrasting the results and findings from this mixed-methods research on institutional voids in emerging markets involves how the scholar used quantitative and qualitative methods to understand this complex phenomenon better. Mixed-methods research combines the strengths of both approaches, offering a more comprehensive view of institutional voids. The results from the quantitative and qualitative datasets provided a comprehensive understanding of the phenomenon. In addition, their research methodology provided an opportunity to validate and triangulate the datasets to strengthen the credibility of the research. Moreover, the study has provided a holistic perspective of institutional voids in emerging markets, combining numerical

data with narratives and stories that help understand these voids' lived experiences and practical implications. The results and findings have policy and business implications for actors in emerging markets. In contrast, data collection, analysis, generalizability, and interpretation of theory. The mixed-methods study provided an opportunity to use institutional theory to explain how institutional voids impact the manufacturing sector in Uganda and how firms respond to these voids.

CHAPTER SEVEN: CONCLUSION & RECOMMENDATIONS

“The hour of departure has arrived, and we go our separate ways; I to die and you to live. Which is better? Only God knows.” — Socrates, The Apology.

7.1 Research Purpose & Planned Contribution

Institutional voids are socially constructed and although prevalent in emerging markets are transitory in nature and firms can address them through the execution of firm strategy and supply chain innovations. This scholarship examined how domestic and MNCs navigate institutional voids in emerging markets.

The argues that manufacturing sector in Uganda is overwhelmed with institutional voids and both domestics and MNCs face severe institutional constraints while operating in Uganda and there are high institutional voids such as bribery and corruption, a lack of property rights, property rights protection, political instability, contractual enforcement, infrastructure constraints and a lack of market intermediaries (Armanios et al, 2017).

The research attempts to close the gap in the literature about how firms respond to institutional voids in emerging markets especially emerging countries in Sub Sharan Africa, which is still an emerging area of scholarship. The study sought to meaningfully contribute to the emerging markets literature in international business and management strategy.

This study makes a significant original contribution to knowledge and to fill the research gap identified by previous scholars in international business and strategic management. Firstly, it advances knowledge strategies firms use to address institutional voids in international business and strategic management research from a Sub Sharan Africa perspective and context, which is underrepresented in global scholarship. The study contributes towards the decolonization debate in international business and strategic management scholarship (Hamann et al., 2020).

Secondly, this study makes a noteworthy contribution to research methodologies in international business. It uses mixed methods, rarely used by international business and strategic management scholars, to examine how firms respond to institutional voids in transition economies. Mixed methods are important because it offers different perspective for scholars to triangulate the datasets to develop new theories about the phenomenon (Morris et al., 2023). In addition, the study used primary dataset to investigate the problem which is important because IB scholars have signaled a decline in the use of primary dataset in international business research (Cerar et al., 2021; Aguinis et al., 2023).

Thirdly, this research contributes towards Institutional theory and institutional voids literature in emerging markets and highlights the current deficiencies in construct measurements and theorizes that institutional voids offers both opportunities and constraints for manufacturing firms in emerging markets and therefore there is a need to build knowledge base and propose scalable innovations to assist firms respond to institutional voids in countries with severely weaker informal and formal institutions (Alam, 2022).

Fourthly, the study provides insight into policy considerations and managerial practices in emerging markets. It highlights how policy makers and managers can build informal and formal institutions, design policies to improve corporate governance, manage political risk in international business, enhance property rights and strengthen weak legal and regulatory frameworks to ameliorate institutional voids in emerging markets such as Uganda.

7.2 Key Summaries: Findings & Results

This scholarship demonstrate that supply chain and firm strategy can respond to institutional voids in Uganda if implemented by manufacturing firms. Both empirical studies i.e., qualitative, and quantitative primary datasets indicates that there are substantial institutional voids in Uganda,

classified under product, labour, capital, regulatory and macro spheres across the supply chain. In addition, the results show that manufacturing firms in Uganda respond to these voids by deploying strategies such as accepting or changing the landscape through advocacy, political ties, and trust. The findings shows that manufacturing firms use supply chain innovations to momentarily lessen then the impact of institutional voids. Other avenues to reduce the impact of institutional voids includes, partnerships, developing robust business models, including last-mile strategies to ensure product availability despite the poor infrastructure in remote areas, and local supplier development.

The newly enacted anti homosexuality act presents a serious challenge to mainly MNC operating in Uganda who might have employees falling into the LBQT category and the threats to harm this section of the labour force can significantly impact on the FDI and firms may respond to these regulations by shutting down their plants and relocating to countries with friendly regulations towards LGBTQ.

The key barriers to innovations identified during the study include lack access to technology, cultural, high cost of capital to purchase new equipment, skills gap, the energy crisis in the manufacturing sector, political upheavals that threaten capital formation of the sector—besides, cost barriers, low absorptive capacity in the formal and informal sector of the economy. Therefore, manufacturing firms can exploit these voids as opportunities and make significant profits in filling these voids.

The study shows that manufacturing firms in Uganda have implemented specific supply chain innovations to combat institutional voids, including energy reduction initiatives across the supply chain and redesigned manufacturing systems and processes to reduce raw material wastage, energy consumption, and pollution. In addition, the Internet of Things has been implemented to coordinate

the supply chain to deliver value. Other specific innovations adopted include social innovations to address societal challenges in these firms' markets.

In addition, the key benefits achieved from these endeavours by supply chain actors resulted in a more sustainable supply chain than two decades ago. In Uganda, the research found that manufacturing firms have significantly reduced energy and water consumption in the manufacturing process using alternative energy and water recycling plants. In addition, through supply chain innovations, new products have been developed and brought to the markets to alleviate the shortages of products and improve Uganda's balance of payment problems—the scale-up of technologies such as 3D printing to improve production processes. Also, route market processes have significantly improved, and last-mile strategies have improved the distribution of products in remote locations across Uganda (Brhlikova et al., 2020).

The social impact of the supply chain has resulted in improved living conditions for consumers and climate change initiatives through planting trees to provide alternative energy sources. CSR initiatives have brought clinics and primary schools near to the consumers and job creation through recycling projects. The multinational cooperations have been supportive of the government and has significantly improved the life the population especially in the rural areas where poverty still abounds.

Manufacturing firms are still impacted by inbound and outbound logistics issues, mainly during cross-border trade and long delays in clearing and forwarding goods. It is cumbersome to move goods from one place to another in the region. There is retaliation among several countries in the region—for example, milk supply to Kenya from Uganda.

The quantitative results confirms that manufacturing industries in Uganda respond to institutional voids according to the ownership structure, size, age, experience. For example, family-owned

firms rely primarily on informal institutions and political ties to respond to institutional voids. At the same time, MNCs use formal institutions, institutional entrepreneurship, localisation, and vertical and horizontal integrations, among others, to respond to institutional voids. Because of the experience and capital advantages, MNCs possess key competencies required to respond to institutions voids compared to family-owned firms and business groups in Uganda.

An important finding from the quantitative dataset shows that supply chain innovations and firm strategy mediate and moderate the relationships between institutional voids and firms' performance among manufacturing firms in Uganda and present a U-shaped relationship between institutional voids and firm performance. These results verified and validated the theoretical and conceptual model developed a priori and supports the relationships between the primary variables: supply chain innovations, institutional gaps, firm strategy, and firm performance.

7.3 Implications from the study:

The positive implication from the study shows that manufacturing firms in Uganda are attempting to address the pressing issues of institutional voids as shown from the results which is commendable.

First, the findings of this study confirm that domestic firms, family-owned firms, business groups and MNCs' responses to institutional voids are varied, and there is no one size fits all or approach to overcoming institutional voids. Secondly, due to the informal nature of business in Uganda, there is a need to deploy more informal strategies to combat institutional voids. More significantly, civil society, cultural institutions, and informal intermediaries are used to resolve the bottleneck in doing business in Uganda (Anheier, 2014; Armanios et al, 2017). In addition, manufacturing firms must engage in institutional entrepreneurship to develop robust institutions that can be used to overcome problems in the markets place.

Thirdly, there are profound areas for improvement in the institutional arrangements which politicians and policy maker must address. The liberalisation policies developed earlier in the transition period of the 1990s have run their course. There is a need for a new institutional arrangement to deal with the problem of corruption and bribery in Uganda, which severely impacts business operations in Uganda. In addition, infrastructural and regulatory voids must be addressed to synchronise Uganda's institutional framework with other jurisdictions in Sub Sharan Africa.

Lastly, the study shows the valuable import of supply chain innovations in attending to institutional voids and other strategies discussed by IB scholars in addressing the institution voids in emerging markets, such as corporate social responsibility, internationalisation, networking, liberalisation, use of non-market strategies, organisational structure among others (Behuria, 2021).

In addition, formal and informal institutions complement each other in emerging markets. Some firms in emerging markets are structured s business groups which help them significantly reduce costs because of institutional voids, for example, by sharing resources such as human capital, production capacity and distribution synergy.

The finding shows that doing business in Uganda is arduous because of institutional voids, i.e., corruption, poor logistics, banking service, high-interest rates, and poor infrastructures. Strategic intervention in government policies must address these issues to promote value chain addition and industrialisation.

7.4 Limitations of the Study

Like all international business and strategic management scholarships, this study has potential limitations. Firstly, the core assumption of institutional void literature is the negative impact in emerging markets. However, there are positive attributes of institutional voids which should be discussed in the literature. Secondly, it is not easy to generalize the finding across boundaries

because institutional voids vary from context to context and are not permanent but transitory. Thirdly, institutional theory as a theoretical lens has a potential weakness; other theories, such as RBV or TCE, can better explain the institutional voids phenomenon. Fourthly, mixed methods research, although it offers opportunities for dataset triangulation and theory building, challenges novice academics because the copious amount of dataset generated and the lack of experience in handling and engaging with such a large amount of data can impact the results.

Fifthly, a sizeable qualitative dataset was collected for grounded theory building, and all of them would not be used, so there can be some bias. Because of the abovementioned limitations, some of the results must be interpreted cautiously, especially the ones where the hypotheses were not supported.

The dataset analysis techniques may have potential weaknesses, especially the statistical model selected, i.e., structural equation modelling for quantitative datasets, due to some variables failing to meet discriminant validity and average variance extracted. Both constraints and unconstrained models were used. In addition, these potential weaknesses were addressed in the qualitative multiple case studies to alleviate the problems.

Seven, a sequential research design was desirable and developing and validating research instruments through a Delphi approach to enrich the study. Moreover, the correctional dataset can sometimes be unreliable and therefore, longitudinal dataset offers would be appropriate because of the time required to observe the phenomenon and develop appropriate responses.

7.5 Recommendation & Future Research

The results and finding for this research provide avenues for future research to contribute to IB and Management research. There is a need to study multiple countries in East Africa to ascertain

how firms respond to institutional voids. This is imperative because the market setting and institutions are similar across the region, and these findings would provide insights and nuances into how these firms circumnavigate institutional voids. Robust policies are required to reduce the impact of institutional patronage, corruption, and bribery in Uganda.

Moreover, future studies would shed more light on the institutional voids in sub-Saharan Africa by examining both formal and informal institutions of entrepreneurship to determine how different types of firms use this institution setting to overcome institutional voids. Moreover, the assumption of weak institutions should be examined further to understand whether the problem is institutions or enforcement problems. This research developed some propositions that require testing to ascertain whether these proposition holds in Sub Sharan Africa further to enrich the literature on institutional voids in underdeveloped markets. The African continental free trade agreement must be conscious of institutional voids and how to address them to increase trade among African countries and outside the content.

7.6 Practical & Management Implications

There are several practical, policy and managerial implications from this study; Firstly, manufacturing firms in Uganda must implement additive manufacturing practices and managers must develop and implement scalable innovations along their value chain and use these supply chain innovations to alleviate the wicked problems in developing markets: poverty, disease, and unemployment, a problem in Uganda.

Secondly, manufacturing firms must ensure value chain upgrades and inclusive participation by all stakeholders can eliminate the problems highlighted in this research. More especially, the managers must support the “Buy Uganda Build Uganda” and promote local contents which requires the development of local suppliers to support the industrialisation policy in Uganda.

In addition, the government should prioritise the development of robust policies to promote industrialisation and reduce the impact on institutional voids in Uganda's manufacturing sector in collaboration with all the key stakeholders. The government must review current industrial hubs that are being implemented across the country to ensure the infrastructure are adequate and standardize to meet the requirements of the stakeholders.

In addition, manufacturing firms must advocate for robust policies to address institutional gaps which impact firm performance and economic development in developing countries in Sub-Saharan Africa (Brites Pereira, & Luiz, 2020). There is a need for a stimulus package to develop absorptive capacity and increase manufacturing research capabilities and capacity.

Managerial practices are important in influencing supply chain innovations in manufacturing firms. Managers must find scalable solutions besides other strategies to manage institutional voids. In addition, to navigate institutional voids, managerial practices should develop robust strategies across the supply chain to develop operational capabilities that can be used to reduce the impact of institutional voids on firms' performance.

Lastly, government and policy makers must play a significant role in addressing institutional voids in subsistence markets to spur the development of the economy. Firms must operate with institutional voids in mind and develop a holistic approach to strategy and management whilst doing business in emerging markets.

7.7 Research Conclusion

In summary, this research shows that institutional voids persist in emerging markets, especially in Sub-Saharan Africa, and manufacturing firms need help to operate in such chaotic environments. IB literature indicates several methods used by firms to address these institutional voids. This research advances supply chain innovations to overcome institutional voids besides other

approaches. Moreover, the role of supply chains has been amplified due to the recent coronavirus pandemic, which resulted in a worldwide supply chain crisis and shortages in products and services. The value of the supply chain was therefore underscored because of these problems.

Institutional voids trammels operations of firms in emerging markets which has ripple effects on performance and profitability. The need for formal and informal institutions is important.

Therefore, robust social, political, and economic institutions to respond to the pressing problems in the country i.e., limited opportunities and poverty. The independence of market and nonmarket institutions can be used as an anchor of economic growth.

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Appendix i: Ethics Clearance



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23rd February 2021

Mr Ronnie Abwang
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Dear Ronnie Abwang,

REF: REC 2018/012/161

SUPPLY CHAIN INNOVATIONS & FIRM STRATEGY: A PATHWAY TO MANAGING INSTITUTIONAL VOIDS IN EMERGING MARKETS; CASE STUDY OF MANUFACTURING FIRMS IN UGANDA

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid for 1 year and may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

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Appendix ii: Questionnaire

Supply Chain Innovations (SCI): Strategy to Manage Institutional Voids in Emerging Markets.
[Case Study of Manufacturing Supply Chains in Uganda]. FINALV AUGUST- 2019

Dear Respondents,

Thank you for taking part in this survey.

In this study, we are seeking the views of managers who are working in the manufacturing industry in Uganda on how supply chain innovations can be used as a strategy to manage institutional voids in emerging markets.

Your valuable feedback will be used as inputs in the study to answer the research question and find viable solutions to the challenges facing the manufacturing industry/ sector in Uganda.

There are no known risks in participating in this study. We will share a summary of results with you individually at the end of the study. Please note that personal information such as (names, job titles, organization, and email addresses) will be kept confidential. We shall not share this information with any third party during the course of this research.

You have been randomly selected to participate in this scholarship and your participation in this research is voluntary.

This survey will take you approximately 8-10 minutes to complete and your valuable time and honest opinion is very much appreciated.

To complete this survey, please kindly mark with an X in the boxes and circles provided.

Your responses will contribute to improving the current understanding of institutional voids in emerging markets and confirm if supply chain innovation is one of the strategy to respond to the impacts of institutional voids in the manufacturing sector.

For more information about this research please contact the principal researcher Ronnie Abwang email. ronnie.w.abwang@gmail.com or Professor Richard Chivaka email. richard.chivaka@uct.ac.za.

Supply Chain Innovations (SCI): Strategy to Manage Institutional Voids in Emerging Markets.
[Case Study of Manufacturing Supply Chains in Uganda]. FINALV AUGUST- 2019

1. Please kindly indicate your highest level of education.

- | | |
|---|--|
| <input type="checkbox"/> Doctor of Philosophy | <input type="checkbox"/> Bachelor's Degree |
| <input type="checkbox"/> Master's Degree | <input type="checkbox"/> National Diploma |
| <input type="checkbox"/> Honor's Degree | <input type="checkbox"/> Advance Level |

2. Please kindly indicate your position in the company you currently work for.

- Executive Management Senior Management Middle Management Junior Management

3. Please kindly indicate how many people are employed in your company.

- | | | |
|--|--|---|
| <input type="checkbox"/> <50 employees | <input type="checkbox"/> 201-300 employees | <input type="checkbox"/> Over 500 employees |
| <input type="checkbox"/> 50-100 employees | <input type="checkbox"/> 301-400 employees | |
| <input type="checkbox"/> 101-200 employees | <input type="checkbox"/> 401-500 employees | |

4. Please kindly indicate how many years you have served your current capacity

- | | | |
|---|--------------------------------------|--|
| <input type="checkbox"/> less than four years | <input type="checkbox"/> 10-14 years | <input type="checkbox"/> over 20 years |
| <input type="checkbox"/> 5-9 years | <input type="checkbox"/> 15-19 years | |

5. Please kindly indicate how long your company has been in operation.

- Less than 4 years
- 5-10 years
- 11-20 years
- over 20 years

6. Please kindly indicate the ownership structure of your company.

- | | | |
|--|--|--|
| <input type="checkbox"/> Family business | <input type="checkbox"/> Limited Liability Company | <input type="checkbox"/> Business Groups |
| <input type="checkbox"/> Multinational Cooperation | <input type="checkbox"/> Government Entity | <input type="checkbox"/> Others |

7. Please kindly indicate the average turnover of your company in the last three years.

- | | | |
|---|--|--|
| <input type="checkbox"/> <100 million Uganda shillings | <input type="checkbox"/> 501-1billion Uganda shillings | <input type="checkbox"/> Over 5 billion Uganda shillings |
| <input type="checkbox"/> 101-500 million Uganda shillings | <input type="checkbox"/> 1-5 Billion Uganda shillings | |

8. Please kindly rate to what extent you agree or disagree with the statements below regarding social improvements made by your firm to address supply chain challenges in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our supply chain has empowered local communities especially women in areas of our operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain is moving toward sourcing all raw materials locally (buy uganda build uganda initiatives)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain promotes social responsibilities in communities we do business in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Please kindly rate to what extent you agree or disagree with the statements below regarding the key drivers of innovation in your firm to address supply chain challenges in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Consumer pressure is a key driver for supply chain innovation in our firm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental pressure is a key driver for supply chain innovations in our firm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social pressure is a key driver for supply chain innovations in our firm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Please kindly rate to what extent you agree or disagree with the statements below regarding strategies your firm has used to address supply chain challenges in the last three years.

	Strongly Disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Partnerships with key suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic alliance with key suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Joint Venture with key suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Please kindly rate to what extent you agree or disagree with the statement below regarding how business models have been used to address the challenges in your supply in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our firm has implemented new technologies in the last last three years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has implemented new business processes in the last three years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has acquired new customers/markets in the last the last three years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please kindly rate to what extent you agree or disagree with the statements below regarding customer innovation strategies used to address the supply chain challenges by your firm in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Increase supply chain delivery reliability to customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase supply chain responsiveness to customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase supply chain flexibility to customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Please kindly rate to what extent you agree or disagree with the statements below regarding internal approach to address supply chain challenges by your firm in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	somewhat agree	Agree	Strongly disagree
Ensure delivery of quality raw materials from suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduce delivery lead-times to customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inventory optimisations to reduce cost in the supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Please kindly rate to what extent you agree or disagree with the following statements below regarding supplier innovations to address supply chain challenges by firm in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Backward integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vendor managed inventory (VMI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Early supplier involvement (ESI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Please kindly rate to what extent you agree or disagree with the statements below regarding green innovations adopted by your firm to address supply chain challenges in the three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Use of renewable energy in the supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of reverse logistics the supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recycling of solid waste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Please kindly rate to what extent you agree or disagree with the statements below regarding the sustainability of your supply chain in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our supply chain offers employment equity to all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain offers employee satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain practices energy sustainability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Please kindly rate to what extent you agree or disagree with the statements below regarding institutional gaps/ challenges in your supply chain in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Most manufacturing firms in Uganda are faced with poor transportation infrastructure making it difficult to reach customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most manufacturing firms in Uganda are faced with Information gaps in the markets making it difficult to service customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most manufacturing firms in Uganda lack credible large retail network to distribute products countrywide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most manufacturing firms in Uganda often use imported raw materials in their production processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most manufacturing firms in Uganda do not collaborate much with educational institutions to foster innovation culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Most manufacturing firm in Uganda lack a strong Learning and Development budgets to support supply chain innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing firms in Uganda are faced with high interest rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing firms in Uganda are faced with poor regulation which leaves them vulnerable to competition from counterfeit products in the market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Please kindly rate to what extent you agree or disagree with the statements below regarding absorptive capacity (organisational capabilities-internal and external) of your firm in the last three years.							
	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our firm has knowledge base to implement supply chain innovations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has invested in research and development to implement supply chain innovations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm collaborate with academic institutions (universities) and other industry stakeholders to foster knowledge creation and application in our supply chain.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has commitments to acquire new knowledge to support supply chain innovations in our supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our firm has commitments to share new supply chain knowledge with all stakeholders in our supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has capacity to create new supply chain knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has the capabilities to convert supply chain knowledge into usable knowledge resource base	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has the capabilities to internalise supply chain information to benefit the organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has the capabilities to use supply chain knowledge to improve our supply chain performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has the capabilities to implement supply chain innovations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Please kindly rate to what extent you agree or disagree with the statements below regarding the performance of your supply chain based on the innovations described above in last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
The revenues of our firm have improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The net profit of our firm has improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The operating profit of our firm improved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Please kindly rate to what extent you agree or disagree with the statements below regarding regulatory improvements adopted to address supply chain challenges by your firm in the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly agree
Our supply chain has adopted regulation regarding product/green labelling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain has adopted regulation regarding carbon emissions/global warming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our supply chain has adopted regulation regarding product quality(elimination of counterfeit products)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Please kindly rate to what extent you agree or disagree with statements below regarding environmental improvements made to address supply chain challenges by your firm the last three years.

	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly Agree
Our firm use new and less polluting fleets in the distribution system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has reduced energy consumption in our supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm is actively involved in recycling of waste (packaging materials and other waste materials) to protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix iii: Structured Interview Guide

Introduction (Lead Investigator)

Company Profile (Ownerships, Size, how long in business, location, number of employees, type of markets and products, etc.)

Overarching Research Question: Overarching Research Question: How Supply Chain Innovations can be used to Manage Institutional Voids in Emerging Markets (Case of Manufacturing Firms in Uganda).

Main Research Question

RQ1: What new Business model Innovations have you implemented in your supply chain in the last three years (new processes, new technology, and new customers).

RQ2: What new technology have you introduced in your supply chain in the last three years (Barcoding, WMS, ERPs, Block Chains, EDI, IoT, Drones, UUVs, etc.).

RQ3: Describe the Absorptive Capacity you have built in your company during the last three years (acquisition, assimilation, transformation, and exploitation of internal and external knowledge sources).

RQ4: Describe the social Innovations implemented in your supply chain in the last three years (local empowerment & local content). Buy Uganda build Uganda initiatives.

RQ5: Describe the performance of your supply chain in the last three years (revenue and profitability).

RQ5: Describe the sustainability of your supply chain in the last three years (employment equity, employee satisfaction, and energy).

RQ6: Describe the Green innovations in your supply chain in the last three years (reverse logistics, pollution, and energy consumption).

RQ7: Describe any product Innovations in your supply chain in the last three years (new product functionality, new markets, and new eco-friendly products).

RQ8: Describe Internal Innovations in your supply chain in the last three years (inventory optimization lead time and quality from suppliers).

RQ9: Describe Process Innovations in your supply chain in the last three years (SRM, CRM, and NPD).

RQ10: Describe the supplier Innovations in your supply chain (backward integration, Vendor managed inventory, and Early supplier involvement).

RQ11: Describe the strategies you have used to combat institutional voids in your supply chain in the last three years (Partnerships, Strategic Alliances, and JV).

RQ12: Describe customer innovations in your supply chain in the last three years (flexibility, reliability, and responsiveness).

RQ13: Describe regulatory innovations in your supply chain in the last three years (product labeling/green labels, carbon emission, and product quality/counterfeit products).

RQ14: Please propose any recommendations to address supply chain challenges in the Uganda manufacturing sector?

Any additional comments

End: Thanks very much for direct participation in this research:

Appendix iv: Nodes\\Themes from Nodes\\Code Book

Name	Description	Files	References
ABC Innovations	Absorptive capacity in emerging markets	1	16
ABC	Absorptive capacity in supply chain	1	24
Business Model Innovations		1	31
New customer segments	Segments in the supply chain	1	25
New Process	Supply chain innovations in Uganda	1	25
New Technology	Supply chain innovations	1	25
downstream customer Innovation	downstream customers innovations in emerging markets	1	22
Flexibility	how flexible is the supply chain in Uganda manufacturing sector	1	25
Reliability	The reliability of supply chain in Uganda	1	25
Responsiveness	responsiveness in the supply chain	1	24
Firm Strategy to combat voids	firm strategy to combat institutional voids	1	21
JV	how JV works in Uganda supply chain	1	17
Partnerships	how partnerships work in the supply chain	1	16
Strategic alliance	strategic alliance practices	1	14
Green Innovations	Green Innovations in emerging markets	0	0
Energy consumption	energy usage in Uganda supply chain	1	3
Pollution	how pollution is controlled in the supply chain	1	25
Reverse logistics	RL practices in the supply chain	1	25
Internal Innovations	Internal innovations	1	14
Inventory optimisation	The inventory optimisation in the supply chain in Uganda	1	25

Name	Description	Files	References
Lead Time	impact of lead time in Uganda	1	25
QC Upstream	quality control in upstream supply chain	1	26
Process Innovations	Process innovations adopted by firms in Uganda	1	13
CRM	customer relationship management in the supply chain	1	25
NPD	New Product development in the supply chain in Uganda	1	25
SRM	supplier relationship management in supply chain in Uganda	1	24
Product Innovations	Product Innovations in Uganda	1	30
new markets	new markets firms entered into	1	25
new product functionality	new product in the supply chain	1	25
products ecofriendly	product safety in the supply chain	1	25
Recommendations	Regulations innovations	1	4
Recommendations	recommendations to solve problem in the supply chain	1	25
Regulations Innovations	Regulations in the emerging markets	1	7
Carbon emission	carbon emission in the supply chain	1	29
Counterfeit	problem of counterfeit products in Uganda	1	21
Social Innovations	Social innovations in Uganda manufacturing	1	13
local content innovations	local content practices in the supply chain	1	25
local empowerment	local empowerment practices	1	25
Supplier Innovations	Upstream supplier innovations	1	29
Backward integration	how this practice is used in Uganda's supply chain	1	24

Name	Description	Files	References
ESI	Early supplier involvements in the supply chain	1	15
VMI	Vendor managed inventory in the supply chain	1	23
Supply chain performance	supply performance in emerging markets	1	19
revenue & profitability	performance in the supply chain	1	25
Sustainability Innovations	Sustainability innovations in emerging markets	1	16
EC	Energy consumption in Uganda's supply chain	1	25
employee equity	employee equity practices in the supply chain	1	25
Employee satisfaction	employee satisfaction practices	1	22
Energy consumption	energy usage in Uganda supply chain	1	3
Technology Innovations	Tech innovations in emerging markets	1	30
Barcode	Barcode innovations in the supply chain	1	27
Block chains	supply chain innovation application in manufacturing	1	25
Drones	Drones' applications in the supply chain	1	23
ERP	ERP innovations in Uganda's supply chain	1	25
IoT	Internet of things in supply chain innovations	1	27
Unmanned Vehicles	can this innovations work	1	25
WMS	WMS innovations in Uganda	1	24

Appendix v: Definition of Constructs

Construct	Indicator	No of Items	Scale Reliability	Source
Institutional voids	Objective Measure: Level of institutional deficiencies and impact on transaction	4	.712	Webb, Khoury, & Hitt, (2020). (Khanna & Palepu, 1997)
Supply chain innovations	Measure of supply chain innovativeness in terms of new processes and products and technology implemented	3	.809	Gao, Xu, Ruan, & Lu, (2017). Arlbjørn, de Haas, & Munksgaard, (2011).
Firm Strategy	Collective methods used to ameliorate instructional voids	3	.776	Ji, Tang, Wang, Yan, & Liu, (2012).
Firm Performance	Financial performance of manufacturing firms	3	.707	Taouab & Issaor, (2019); Harris & Yan (2019)

Appendices vii: Comparison Coding

Research Question 5 Benefits of Supply Chain Innovations in Ugan...					Research Question 2 Response to Institutional Voids			Research Questions 4...			
Logistics		New products		Social benefits		Accept or attempt to ...	Supplier R...	Enter, ...	Technology		
Carbon emission		Technol...	supplier...	Produ...	Inven...	Compete alone or CoL...	Innovations	Par...	Products	Process...	
Renewable energy		Collaboration	Fin...	Cus...	Job ...	Strategy	Replicate or Ad...		Rene...	Regul...	
Systems and Process...		Technology In...				Macro Voids	Products m...		Cost	Infrastr...	Cul...
		Information a...	Skills...	Cost...			Capital ...		Regulations	Tech...	Coll...
					Research Questions 1 Institutional V...			Research Question 3 Barriers and C...			

