

# Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for the Sustainable Competitive Advantage of Smallholder Furniture Manufacturers in Glenview, Zimbabwe.

Wellington Ramwi, Thembani Gaswa, Patson Chawuruka

**Abstract:** SMEs constitute a significant part of the global value and supply chain systems. They play a fundamental role in socio-economic growth and development of both developed and developing nations as they make goods and services available in the wider market, enhance competition and create employment. This study was done to measure the impact of supply chain management practices, logistics capabilities, supply chain innovation and the mediating effect of SME owners/managers traits on sustainable competitive advantage of SMEs at Glenview Furniture Market. The study was done on 164 smallholder furniture manufacturers who were selected randomly from various market manufacturing stalls. Data was collected using a questionnaire which was collected after some minutes to enable data analysis. Descriptive research design methodology was adopted. The study established that Owner/Manager traits and Supply chain management had insignificant effect on sustainable competitive advantage. However, Logistics capabilities and Innovations had significant impacts on sustainable competitive advantage of smallholder SMEs at the Glenview furniture market.

## I. Introduction

Small and Medium Enterprises (SMEs) are categorized variously in different economies based on capital investment, number of employees and sales turnover (Tukamuhabwa, Mutebi and Kyomuhendo, 2021). They constitute a significant part of the global value and supply chain systems and play a critical role in the socio-economic growth and development of both developed and developing nations (Rohana et al, 2015 and Tukamuhabwa et al., 2021). They are also critical as they make goods and services available in the wider market, enhance competition and create employment. In countries such as USA, India, Indonesia, China, Malaysia, Japan, South Korea and the EU, SMEs contribute between 40 to 60% to their Gross Domestic Product (GDP) and 70 to 90 % in employment (Samudzimu and Munkumba, 2022).

SMEs in Zimbabwe comprise approximately 94% of businesses and significantly contribute to employment creation, manufacturing of goods and services and entrepreneurship (Makate et al., 2019). The government, Non-governmental (NGOs) organisations and the private sector support SMEs in Zimbabwe in ways such as training, infrastructure provision, financial assistance and marketing arrangements with the objective of developing and growing them (Chipangura and Kaseke, 2012). What is worrisome is that besides their more than 94% concentration in the market and coupled by the effort by the government and other stakeholders to grow and develop SMEs in Zimbabwe, they still contribute less than 50% to the country's GDP (National R and D survey Report, 2019, Samudzimu and Munkumba, 2022). Many of the SMEs (about 85%) collapse within the first 5 years of conception (Mudavanhu et al., 2011 and Chundu, et al., 2020). This failure rate and the absence of growth is a cause for concern.

It is important for SMEs in Zimbabwe to be supported so that they contribute effectively to industrial and economic development. Logistics and supply chain management practices play a critical role in the competitiveness and sustainability of SMEs (Arsawan et al., 2020). Literature shows that logistics capabilities, supply chain management practices and innovations in terms of customer relationships, information sharing, postponement and strategic supplier partnerships are critical for creating competitive advantage for the firm (Aziz et al., 2020; Keskin et al., 2021; Huo et al., 2021; and Migdadi, 2021). A firm that develops unique logistics practices and capabilities achieves competitive

## *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

advantage (Gligor and Holcomb, 2014 and Day et al., 2015). Langley and Capegmini (2017) highlight that the efficiency and effectiveness of logistics positively affect costs, customer expectations, availability and movement of goods. These factors are competitive advantage priorities in which SMEs in Zimbabwe have registered unsatisfactory performance (World Bank, 2017).

Logistics capabilities that create and enhance competitive advantage include demand management capabilities, supply management capabilities, information management capabilities, innovative capabilities and supply chain risk management capabilities (Gligor and Holcomb, 2014; and Kwak et al., 2018). Chang et al., (2021) notes that integrating these logistics capabilities creates competitive advantage for the firm.

Supply Chain Innovation (SCI) generally means improvements in the way their products, processes, information, work, and funds flow throughout the supply chains (Seyham et al., 2021). Such innovation ensures that smallholder furniture manufacturers have greater cost efficiency, productivity and effective distribution of their wares much to the expectation of their customers (Makate et al., 2019). Smallholder furniture manufacturers at the Glenview furniture market must continue to work towards optimising their supply chains in search for sustainable competitive advantage as the industry is ripe for innovation. SCI can be a key internal resource that these smallholder furniture manufacturers can leverage on for their sustainable competitive advantage (Arsawan et al., 2020 and Ngah et al., 2015).

However, managing supply chain practices has been a neglected business activity in SMEs in many parts of the world (Chen and Krajbich, 2018, Yuan et al., 2018). Likewise, smallholder furniture manufacturers at Glenview do not seem to be mindful of competitive advantages arising from supply chain management, innovation and logistics capabilities, hence they have not given adequate need to investing in these resources and as such they continue flubbing (Chundu, et al., 2020). This lack of improvement in supply chain management practices cause deficiencies which negatively affect their operations and productivity levels (Thun et al., 2011). Such deficiencies include; vulnerability to supply chain disruptions resource scarcity, delivery failures, poor quality products and service (Ali and Golgeci, 2019, Arsawan et al., 2020, Eyaa and Ntayi, 2010). Supply chains must be innovative to enable SMEs to remain competitive in the market and respond to customer demands quickly (Tarafdar and Qrunfleh, 2017).

Research on SCM practices and logistics capabilities has been concentrated in large organisations that are mainly in the United States (Yuan et al., 2018) while little knowledge on supply chain management constructs and sustainable competitive advantage in SMEs is available elsewhere (Cassia and Minola, 2012; Rasmussen, 2014; Chen, 2018). In Zimbabwe, literature examining the influence of supply chain constructs including logistics and innovation as sources of competitive advantage in SMEs is scarce (Makate et al., 2019), although a fair share of emerging literature focusing on assessing the impact of innovation on firm performance, determinants of innovation and knowledge sharing, technological innovations and existence of innovation is available (Makate, et al., 2019; Mujeyi et al., 2015; Manyati, 2014). However, these studies have observed the need for more empirical research on other enhancers of competitive advantage inherent in SMEs.

The problem of this study is that SMEs in Zimbabwe continue to exhibit insignificant growth and high failure rate. Hence the study seeks to present the findings of a survey which will be conducted with SMEs managers and owners at the furniture manufacturing site in Glenview in Zimbabwe regarding their perceptions towards enhancing their competitive advantage. The study therefore, seeks to determine the extent to which Supply Chain Management, Logistics Capabilities and Supply Chain Innovation enhance sustainable competitive advantage of smallholder furniture manufacturers in Zimbabwe. Answering the question informs the potential benefits of empowering smallholder furniture manufacturers through investing in SCM, LC and SCI hence enhancing their competitive advantage in the market. It also promotes policy development within the sector which will contribute to the growth of the economy. The ability of small businesses to effectively and efficiently manage their supply chains is an essential component for their long-run sustainability (Kwak et al., 2018) as it helps them to build-up their competencies so that they become capable of dealing with market pressures much easier. Firms need sustainable competitive advantage in order to survive competition (Afraz et al., 2021). Thus this will assist SMEs to solve the many logistical problems that they are faced with consequently stabilising their firms.

### **1.1 SMEs at Glenview furniture manufacturing complex**

SMEs in Zimbabwe are businesses with not more than 100 permanent employees (SEDCO, 2011). The Small Enterprises Development Cooperation (SEDCO) dropped the use of capital and turnover after the adoption of the multi-currency regime. However, Chundu et al., (2020) affirm that SMEs in Zimbabwe employ 5-40 people with annual turnover and assets from \$50,000 to \$2 million. The introduction of the Economic Structural Adjustment Programme (ESAP) saw the

## *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

rapid growth of the SMEs sector in Zimbabwe (Bhalla, et al., 1999). This was due to the shrinking formal market and the country's economic downturn which resulted in massive job losses (CZI Business Intelligence Report, 2010). The collapse of the formal sector in Zimbabwe due to many years of economic distress provided opportunities for SMEs to fill in the gap of producing and supplying different commodities. The Reserve Bank of Zimbabwe Monetary Policy Statement (2005) announced that SMEs in the manufacturing sector contributed 10.1% to gross output, 10.9% to net output, 13% to employment and 11% to wages and salaries.

ESAP transformed the Zimbabwean economy to a free and competitive market in which SMEs would benefit through accessing once restricted markets, reduced labour costs and tariffs. The government promotes the growth and development of SMEs in Zimbabwe through SEDCO and other agencies such as NGOs and financial institutions (SEDCO, 2003).

The government constructed four hundred and eighty (480) business units at the Glenview furniture manufacturing complex to house SMEs in 2005 after the so called 'Operation Murambatsvina' (Glenview Furniture Complex Association Report, 2010). The units are infrastructures meant for SMEs into furniture manufacturing and distribution only. Employees range between two (2) and Thirty (30) per unit. They manufacture all sorts of furniture including wardrobes, beds, kitchen units, kitchen chairs, lounge suits, bedroom suits and competition for customers is stiff due to the homogenous nature of their activities (Glenview Furniture Complex Association report 2005). Timber which is one of the main raw material is supplied mainly from merchants in Nyanga and the cotton staff mostly used in lounge suites, dining room suites and beds comes from various suppliers in and out of Zimbabwe. They produce furniture with ready market in and out of Harare distributing directly to individual customers and furniture retailers such as Modern Furnitures, Downtown Furnitures and Station Furnitures (SEDCO, 2011). Factors constraining the growth of SMEs at Glenview furniture market include limited access to finance, competition, limited access to markets and lack of innovation and appropriate technology (Chipangura and Kaseke, 2012). Chinembiri (2007) attest to the fact that SMEs in the furniture manufacturing sector face logistics related deficiencies which include supply chain inefficiencies and other constraints. Poor supply chain performance is manifested in poor quality products and delivery failures. These logistical and supply chain deficiencies affect competitive advantage (Eyaa and Ntayi, 2010).

This write-up has been organised in the following sections; Theory and Hypotheses which describe the theory and hypotheses development, the Conceptual framework –providing the research scope, the Methodology section –which provides the method of research, the Results section – which then analyses the results of the research, the Discussion section discusses the results and Summary and Conclusions of the research.

## **II. Literature Review**

### **2.1 Concepts Used**

#### **2.1.1 Supply chain management (SCM) practices**

Contemporary businesses are faced with ever growing competition. This prompts the need for modern organisations to have strong supply chains. Customers are always wary of the transit times of products (Taghipour et al., 2022). A supply chain involves a network of suppliers, producers, distributors, and retailers working to procure materials, execute production and coordinate delivery of finished goods to customers effectively and efficiently (Ivanova-Gongne et al., 2022). This points to the fact that the growth of independent organisations depends significantly on the performance of their supply chains (Tseng et al., 2022). According to Sun et al., (2022) a company can gain its competitive advantage by improving its performance through its supply chain management. Zhu et al., (2022) also noted that supply chains of modern organisations have a significant influence on their sustainability. This therefore should prompt modern businesses to improve their supply chain management. Supply chain management indicators include supplier partnership strategy, buyer relations, information sharing and degree of data distribution (Li et al, 2006). These factors are applied to measure the performance of SCM in this study.

#### **2.1.2 Supply chain innovation (SCI)**

Businesses can resort to agile and resilient strategies such as SCI to deal with market complexity and turbulence (Lee, Lee and Schniederjans, 2011). SCI can benefit businesses from transformation and rebirth by gaining a competitive edge (Carayannis, Sindakis, and Walter, 2015). SCI encompasses new corporate structures, novel approaches to customer service and strategy modifications from concepts to products or services (Wilajanti, Nugroho and Riyadi 2022). It is conceptualised as a collection of enterprise-wide initiatives consisting of R&D and technological investments, process optimisation, introduction of new products and services, building new models, knowledge acquisition and management (education and training), cross-functional engagement, global and cross-sector partnerships, market intelligence, and

## *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

other activities (Sunil, 2019; Moreira, Ferreira and Zimmermann, 2018; Hines, 2012; Arlbjorn et al., 2011; Mandal, 2016). These initiatives aim to improve firm performance. The introduction of new products and services to the market is changing business trends hence modern firms should prioritise innovation (Ajmal, Jabeen and Vihari, 2021; Baric, 2017 and Latifah et al., 2020). Technologies and improved processes make supply chains stronger, become more agile and resilient, and effectively may result in improved profitability, faster cycle times, and customer satisfaction among other crucial benefits (Sukati et al., 2011; Arlbjorn et al. and Evangelista et al. 2012). Alghanmi (2020) note that innovations can be done in products, processes and marketing strategies. Thus offering products that are different from the market, superior to competitors and novel for customer happiness improve firm performance. Effectiveness of processes, delivery precision, are indicators of process innovation. Marketing innovation can be measured through packaging innovations, products design changes, price and promotion price updates.

### **2.1.3 Logistics capabilities (LC)**

Literature shows that logistics has a strategic role in companies such as Wal-Mart, Dell and Hewlett Packard (O' Marah and Hofman, 2009). These companies utilise their superior logistics systems as weapons for competitive advantage to drive profitability and growth (Sandberg and Abrahamsson, 2011). Researchers acknowledge logistics capabilities as sources of competitive advantage (Gligor and Holcomb, 2014, and Karagoz and Akgun, 2014). Barney and Clark, (2007) note that the competitive advantage of a company is based on its operational capabilities which are resources bundled into valuable, rare and difficult to imitate capabilities. Logistics capabilities can be categorised in three dimensions as demand management, supply management and information management capabilities (Gligor and Holcomb, 2012). These enable firms to differentiate their logistics activities from competition. Thus if managed well, these capabilities can become core competences for a firm.

### **2.1.4 Sustainable competitive advantage (SCA)**

The theory of sustainable competitive advantage is a strategic management theory which was introduced by Porter (1985) and Barney (1991) to help organisations make profits. According to Porter (1985) an organisation can achieve competitive advantage through adopting the following generic strategies; differentiation, cost leadership and focus. These strategies can position a company within an industry based on its profitability. SCA can be assessed through cost leadership, differentiation, flexibility (Alghanim, 2020). However, Quare and Mensah (2018) noted that all companies aim to achieve long term success hence they try to come up all sorts of strategies to gain competitive advantage. In that regard it becomes a nightmare to sustain competitive advantage unless an unduplicatable value chain strategy has been implemented. Hence there is need to invest in knowledge, capabilities and internal resources (Popula and Volna, 2013). These are opportune sources within organisations that can be used to exploit the external environment.

## **2.2 Theoretical Framework and hypotheses development**

### **2.2.1 The Resource Based View (RBV) Theory**

This study is grounded on the Resource Based View (RBV) and the related dynamic capabilities perspective which considers companies as bundles of resources that can be managed and controlled to achieve competitive advantage. The RBV theorises that firms compete through controlling resources (Schumpeter, 1934; Penrose, 1959 and Scherer (1980). It is rooted in some work by Porter (1985) which proposed that the strategy of the firm centres on market power, assuming that firms have access to different resources which may be difficult to imitate hence the resources give them competitive advantage (Barney and Clark, 2007; Barney, 1991 and Porter, 1985). Barney (1991) noted that firms that successfully use their resources to develop capabilities potentially build more sustainable competitive advantage. Resources are linked to capabilities and capabilities to firm performance (Gligor and Holcomb, 2012). These resources include; assets, capabilities, information, knowledge, attributes and organisational processes (Ismail et al., 2012). Literature suggests that capabilities can be organised in different levels, thus dynamic and operational capabilities (Helfat et al., 2007). Dynamic capabilities create, extend and modify operational capabilities with attributes that are valuable, rare, inimitable and organised (Esper et al., 2007), enhancing competitive advantage.

Competitive advantage results from the economic net value gained in terms of enhancing greater benefits with the same costs or same benefits with rivals produced at lower cost compared to rivals (Sanders et al., 2007; Barley, 1991). Contemporary literature has extended RBV towards a dynamic view on how resources have been created, extended and modified over time (Helfat et al., 2007). However, the scope of time operational capabilities constitute a competitive advantage may be more or less stressed out but always temporal in a dynamic environment.

The RBV idea shows how important resources are and how businesses cannot compete in the market without them. This perspective gives entrepreneurial owners and managers opportunity to put innovative strategies in place in order to win competition in the market. SMEs need to uniquely develop their Owner/Manager traits, SCM practices, SCI and LC as

resources that they can use to generate sustainable competitive advantage. Resources that are available to the organisation determine how well the organisation performs as these resources are essential for its performance (Ivanova-Gongne et al., 2022 and Sukaatmadja et al., 2021). In this regard RBV is applied to assess the impact of supply chain management practices on sustainable competitive advantage (Mellat-Parast and Spillan, 2014).

### 2.3 Conceptual framework

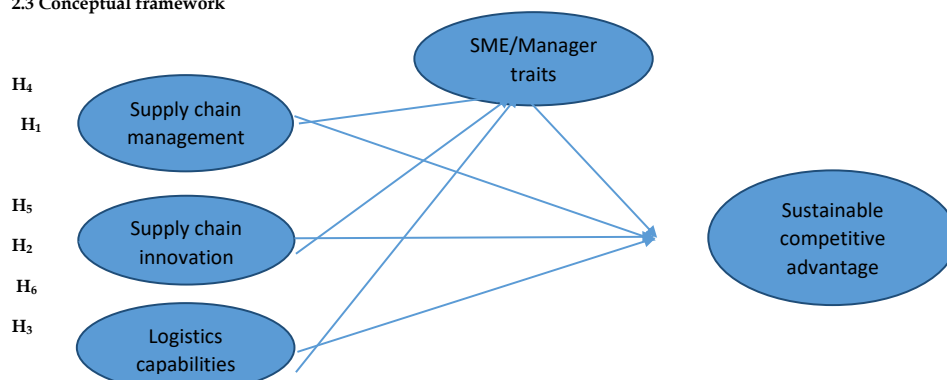


Figure1: Conceptual framework

#### 2.3.1 Hypotheses development

##### 2.3.1.1 Supply chain management practices and sustainable competitive advantage

Most firms have increased focus on delivering value to the customers in today's business. Focusing attention of businesses provides products and services that are more valuable compared to competition, forcing supply chain to be more responsive and create competitive advantage. As such supply chain performance is crucial for gaining competitive for the firm (Sukati et al, 2012), hence performance is positively associated with sustainable competitive advantage. Lee et al, (2022) also suggest a strong correlation between supply chain performance and competitive advantage of firms.

H<sub>1</sub>: Supply chain management has a positive effect on sustainable competitive advantage of smallholder furnisher manufacturers in Zimbabwe.

##### 2.3.1.2 Supply chain innovation and sustainable competitive advantage

Albassami et al., (2019) noted that Chinese firms focus on SCI to gain competitive advantage in their target markets. This assertion was confirmed by a study by Afraz, et al., (2021) on the relationship between supply chain innovation (SCI) and competitive advantage which showed a positive impact of supply chain innovation on competitive advantage. The study addressed the contribution of supply chain innovation to robustness and resilience capabilities and its impact on the competitive advantage of firms in the construction sector. Hence in the contemporary business environment supply chain innovation and sustainable competitive advantage are closely related.

H<sub>2</sub>: Supply chain innovation has a positive effect on the sustainable competitive advantage of smallholder furnisher manufacturers in Zimbabwe.

##### 2.3.1.3 Logistics capabilities and sustainable competitive advantage

Chao et al., (2008) note that a firm with sufficient logistics capabilities can efficiently handle frequent orders by delivering full orders on time, communicating shipments, handling distribution and returns. These capabilities have become core competences for firms. Recent literature thus, Bag, et al., (2020), Aziz et al., (2020) and Keskin et al., (2021) confirm that logistics capabilities positively relate to sustainable competitive advantage. Hence the following hypothesis can be stated:

H<sub>3</sub>: Logistics capabilities have a positive effect on sustainable competitive advantage of smallholder furniture manufacturers in Zimbabwe.

##### 2.3.1.4 The mediating effect SMEs/Manager traits

The characteristics and values of entrepreneurs and their managers decide the policies that they adopt for their enterprises. There is a relationship between the SME/Manager characteristics and the firm's successful outcome (Aniola, 2018). Indicators such as experience, educational level, training and business ideas can be immediate capabilities for

## Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....

owner/manager in determining the policies they apply to their enterprises (Ang, et al., 2010). According to Penrose (1995) human capital which includes educational level, experience and other characteristics is the antecedent of key resource endowments. They assert that degreed owner/managers generally have competitive advantage and greater mental ability to innovate and make decisions that bring successful outcomes. Leadership traits are critical for the success of organisations since it is the mandate of owners and managers to develop, manage and modify the operations of their organisations hence. In that regard, managers' traits are closely related to firm operations since they directly impact on how well the business functions (Porcu, et al., 2020). Knowledge, experience and expertise of managers directly impact on outcomes of organisations as the outcomes are a function of the choices they make (Hambrick, 2015). These variables can be applied to predict the actions of an entrepreneur in strategic decision making, hence they have an impact on the performance of the organisation.

H<sub>4</sub>: SMEs/Manager traits have a positive effect on sustainable competitive advantage of smallholder furniture manufacturers in Zimbabwe.

### III. Methodology

A survey method was adopted since the study sought to determine the perceptions of SMEs owners/managers' on the effect of supply chain management, supply chain innovation and logistics capabilities on giving them sustainable competitive advantage. The method enabled researchers to study more variables at the same time concurrently obtaining the views of a large number of participants. A self-administered questionnaire was used as a research instrument due to its advantages. The population consisted of 480 SMEs at the Glenview Furniture manufacturing market in Harare, Zimbabwe. Krejcie and Morgan (1970) matrix was used to determine the sample size which turned out to be 214 SMEs. Simple random sampling was used to select the SMEs since they are homogenous. A 5-point Likert scale was used to measure the respondents' responses (1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4-Agree and 5-Strongly Agree). Valid and useful data was obtained from 164 SMEs hence the response rate was 76.6% and considered representative and ideal for analysis to proceed (Saunders, Lewis and Thornhill, 2003; Kothari, 2009). The Statistical Package for Social Sciences (SPSS) version 21.0 was used to analyse survey data.

Commented [L1]: Paradigm and design missing

### IV. Data analysis and results

The objective of this study was to determine the effect of leveraging SCM practices on sustainable competitive advantage of smallholder furniture manufacturers at Glenview market in Harare, Zimbabwe. Statistics show that the research instrument had high levels of internal inconsistency as the results of multi-collinearity test for both individual and collective internal consistency of the five elements in the questionnaire revealed the following Tolerance statistics and Variance Inflation Factor (VIF) results; Owner/Manager traits (0.715 and 1.399), Supply Chain Management (0.915 and 1.093), Innovation (0.721 and 1.387), Logistics Capabilities (0.715 and 1.101) respectively. All Tolerance Statistics were above 0.2 while VIF values were all below 10, leading to a safe conclusion that there was no collinearity within the data provided.

#### 4.1 Effect of SCM practices on SCA

The study reflected on the effect of supplier relationship strategy, buyer relationships, degree of data distribution and information sharing as SCM variables that influence sustainable competitive advantage of smallholder furniture manufacturers. Research results showed that smallholder furniture manufacturers at the Glenview market have effective supplier relationship strategies that assist supply chain systems to build sustainable competitive advantage (mean=3.73; SD=0.76). SMEs also have good relations with their buyers (Mean=4.09; SD=0.52). There is considerable degree of data and information sharing with stakeholders (Mean=3.51; SD=0.56 and Mean=3.52; SD=0.6) respectively.

**Table 4.1:** Statics on supplier relationship strategy, buyer relationships, degree of data distribution and information sharing

	Supplier partnership strategy	Relationship with buyers	Degree of data distribution	Quality of information sharing
N	Valid	164	164	164
	Missing	3	3	3

Mean	3.73	4.09	3.51	3.52
Median	4.00	4.00	4.00	4.00
Std. Deviation	.762	.517	.559	.601

#### 4.2 Effect of SCI on SCA

The study also reflected on the effect of SCI on sustainable competitive advantage considering product innovation, process innovation and marketing innovation influencing constructs. The research results show that the all constructs positively affect sustainable competitive advantage with means and standard deviations as follows; Product innovation (Mean=4.31; SD=0.464), Process innovation (Mean=4.32; SD=0.467) and Marketing innovation (Mean=4.0; SD=0.00) respectively.

**Table 4.2:** Statistics on product innovation, process innovation and marketing innovation

	Product innovation	Process Innovation	Marketing innovation
N Valid	164	164	164
Missing	3	3	3
Mean	4.31	4.32	4.00
Median	4.00	4.00	4.00
Std. Deviation	.464	.467	.000

#### 4.3 Effect of LC on SCA

The study also sought to find out the effect of Logistics Capabilities (LC) on sustainable competitive advantage basing of demand management, supply management and information management. Results were as follows; Demand management (Mean=4.13; SD=0.34), Supply Management (Mean=4.13; SD=0.6) and Information Management (Mean=4.04; SD=0.398). These results show that LC contributed positively to sustainable competitive advantage of SMEs at the Glenview market.

**Table 4.3:** Statistics on demand management, supply management and information management

	Demand Management	Supply Management	Information management
N Valid	164	164	164
Missing	3	3	3
Mean	4.13	4.13	4.04
Median	4.00	4.00	4.00
Std. Deviation	.342	.602	.398

#### 4.4 Measurement of SCA

The study also sought to find out the extent to which SCA could be measured through cost leadership, differentiation and flexibility. The results were as follows; Cost leadership (Mean=3.4; SD=0.854), Differentiation (Mean=4.02; SD=0.865) and Flexibility (Mean=4.49; SD=0.50) respectively. These results show that these variables are good measure of SCA of SMEs at Glenview Furniture Market.

**Table 4.4:** Statistics on cost leadership, differentiation and flexibility

Statistics		Cost leadership	Differentiation	Flexibility
N	Valid	164	164	164
	Missing	3	3	3
Mean		3.40	4.02	4.49
Median		4.00	4.00	4.00
Std. Deviation		.856	.865	.501

#### 4.5 Mediating effect of SME Owners/Managers traits

The study categorised respondents in terms of Gender, Level of education and Experience. These demographic profiles depict the Owner/Manager traits which have an effect on the successful outcome of the firm (Eniola, 2018, Porcu et al., 2020). The gender profile shows that 150 respondents were males while 14 were females, thus 91.4% and 8.5% respectively. This shows that Glenview furniture market was male dominated at the ratio of about 92% men to 8% women. This distribution could be a result of the manual nature of the furniture manufacturing jobs which requires physique. This however, calls for more gender sensitisation to increase the number of women participation in male dominated sectors to support the call by the government for gender parity in all sectors of the economy (National Gender Policy, 2018). The level of education affects the management of SMEs and decision making (Bates, 2014). The gender and level of education cross tabulation revealed that 27 (23 male and 4 female) had secondary education, 107 (99 male and 8 female) were NCC/Diploma holders, and 30 (28 male and 2 female) were either HND or degree holders. There were no primary and masters level holders among the sampled respondents. This implied that all respondents were adequately knowledgeable to conceptualise and understand the concepts of supply chain management, logistics capabilities, supply chain innovation, and sustainable competitive advantage that form the basis of this study and hence, provided intelligent and credible information. The result also dispels the notion that women are educationally disadvantaged. In terms of the experience of SMEs/Managers, which according to Hambrick (2015) directly impacts the performance of the enterprise, the results were as follows; 27 (16.5%) had 1-5 years of experience, 81 (49.4) had 6-10 years of experience, 45 (27.4) had 11-15 years of experience while 11 (6.75) had 16-20 years of experience respectively. This wealth of experience increased the validity of the data provided as respondents were well versed with furniture manufacturing at the Glenview market.

#### 4.6 Regression

Regression analysis assists us to understand how the elements of supply chain change in relation to sustainable competitive advantage when they are varied.

##### 4.6.1 Regression model coefficients

The regression model coefficient is used to measure contributions of individual independent research elements towards the dependent variable. Multicollinearity was conducted to understand how the independent variables were correlated. The table shows regression model coefficients and the collinearity statistics where the Tolerance statistics and Variance Inflation Factor (VIF) values are well above 0.2 and well below 10. This clearly indicates that there was no collinearity within the data provided.

**Table 4.6: Research Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.678	0.722		4.003	0.349		
	Manager traits	-0.405	0.104	-.0322	-0.3893	0.000	0.715	1.399
	Supply chain management	-0.73	0.071	-.0765	0.940	0.302	0.915	1.093

#### *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

Supply chain innovation	0.566	0.111	0.422	-1.036	0.000	0.721	1.387
Logistics capabilities	0.498	0.117	0.313	4.260	0.000	0.715	1.101

a. Dependent Variable: Sustainable competitive advantage

Based on the standardised coefficients, the table shows that supply chain innovation contributes most towards the sustainable competitive advantage of smallholder furnisher manufacturers with beta value of (0.422), followed by logistics capabilities (0.313). Supply chain management and manager/owner traits had both a negative effects on sustainable competitive advantage with (-0.765) and (-0.322) respectively.

#### **4.6.2 ANALYSIS OF VARIANCE (ANOVA)**

**Table 4.6: ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.623	1	.623	3.800	.053 <sup>b</sup>
	Residual	26.577	162	.164		
	Total	27.201	163			
2	Regression	2.569	2	1.284	8.395	.000 <sup>c</sup>
	Residual	24.632	161	.153		
	Total	27.201	163			
3	Regression	3.965	3	1.322	9.102	.000 <sup>d</sup>
	Residual	23.235	160	.145		
	Total	27.201	163			
4	Regression	5.987	4	1.497	11.219	.000 <sup>e</sup>
	Residual	21.213	159	.133		
	Total	27.201	163			

a. Dependent Variable: Sustainable Competitive Advantage

b. Predictors: (Constant), Supply Chain Management

c. Predictors: (Constant), Supply Chain Management, Supply Chain Innovation

d. Predictors: (Constant), Supply Chain Management, Supply Chain Innovation, Leverage Capability

e. Predictors: (Constant), Supply Chain Management, Supply Chain Innovation, Leverage Capability, Manager Traits

Source: Study Results (2023)

Analysis of Variance (ANOVA) shows the significance of the model. The regression model becomes statistically significant when the F-value is above 1 and the sig-value is less than the critical value at 0.05. The following ANOVA table shows F-values of 3.800, 8.395, 9.102, 11.219 and Sig-values are illustrated as 0.053, 0.000, 0.000 and 0.000

### *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

respectively. Since F-values 3.800, 3.395, 9.102 and 11.219 > 1; and Sig-values 0.000 < 0.05, the regression model was significant.

#### 4.5.3 Regression model summary

**Table 4.7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.151 <sup>a</sup>	.023	.017	.405	.023	3.800	1
2	.307 <sup>b</sup>	.094	.083	.391	.072	12.716	1
3	.382 <sup>c</sup>	.146	.130	.381	.051	9.617	1
4	.469 <sup>d</sup>	.220	.200	.365	.074	15.154	1

Source: Research Data (2023)

The research model was less significant since predictors could not strongly influence the dependent variable given the R values of 0.151, 0.307, 0.382 and 0.469. R Square of 0.023, 0.094, 0.146 and 0.22 indicate a weak relationship of 2.3%, 9.4%, 14.6% and 22 % between the predictors and sustainable competitive advantage. Adjusted R Square shows the goodness of fit of the model and was statistically significant at 0.017, 0.083, 0.013 and 0.20. A poor fit is indicated by a significant value of less than 0.05 (Pallant, 2013).

#### 4.6.3 Hypotheses testing

**Table 4.6: Hypotheses**

Independent variable	Sig value	Hypothesis testing	Interpretation
Owner/Manager traits	.452	Null hypothesis accepted (.452 > 0.05)	There is no significant change in sustainable competitive advantage due to owner/manager traits given that the sig value (.452) is greater than the critical value (0.05)
Supply chain management	.445	Null hypothesis accepted (.445 > 0.005)	There is also no significant change in sustainable competitive advantage of smallholder furniture manufacturers due to supply chain management given that the sig value (0.445) is greater than the critical value (0.05)
Supply chain innovation	.028	Null hypothesis rejected (0.028 < 0.05)	There is significant change in sustainable competitive advantage of smallholder furnisher manufacturers at Glenview market due to supply chain innovation given that the sig value (0.028) is less than the critical value (0.05)
Logistics capabilities	.043	Null hypothesis rejected (0.043 < 0.05)	There is also a significant change in competitive advantage of smallholder furniture manufacturers at Glenview market due to logistics capabilities given that the sig value (0.043) is less than the critical value (0.05)

#### 4.7 Discussion

The results of this research established that Owner/Manager traits do not have a significant effect on sustainable competitive advantage of SMEs at the Glenview furniture market. This is contrary to the assertion by Eniola, (2018) who opined that there is a positive relationship between the SME/Manager characteristics and the firm's successful outcome.

## *Liveraging Supply Chain Management Practices, Logistics Capability and Innovation for.....*

In the same vein Hambrick (2015) asserted that knowledge, experience and expertise of managers directly impact on outcomes of organisations as the outcomes are a function of the choices they make. The study also observed that supply chain management plays an insignificant role for smallholder furniture manufacturers at the Glenview market although contemporary literature points to the fact that the growth of independent organisations depends significantly on the performance of their supply chains (Tseng et al., 2022). This notion was supported by Sun et al., (2022) and Zhu et al., (2022) who pointed out that companies can gain competitive advantage by improving their performance through their supply chain management which significantly influence their sustainability.

The study also established that innovation has a significant effect on sustainable competitive advantage of SMEs at the furniture market. This result support the notion that in the contemporary business environment sustainable competitive advantage and SCI are closely related hence modern firms should prioritise innovation Ajmal, Jabeen and Vihari, 2021; Baric, 2017 and Latifah et al., 2020). Innovations results in improved profitability, faster cycle times, and customer satisfaction among other crucial benefits (Sukati et al., 2011, Arlbjorn et al and Evangelista et al 2012). Albassami et al., (2019) supported the notion when they noted that Chinese firms focus on SCI to gain competitive advantage in the target market.

The study also observed that logistical capabilities play a significant role in sustainable competitive advantage of SMEs. Many researchers acknowledge logistics capabilities as sources of competitive advantage including (Gligor and Holcomb, 2014, and Karagoz and Akgun, 2014). Contemporary literature also confirm that logistics capabilities have a positive effect on sustainable competitive advantage (Bag, et al., 2020, Aziz et al., 2020 and Keskin et al., 2021).

### **V. Conclusion**

The study used to regression analysis the results of the hypotheses. H<sub>1</sub> and H<sub>4</sub> were insignificant while H<sub>2</sub> and H<sub>3</sub> were significant and the conclusions were in synch with contemporary literature. Thus the results established that Owner/Manager traits and Supply chain management had insignificant effect on sustainable competitive advantage. However, Logistics capabilities and Innovations had significant impacts on sustainable competitive advantage of smallholder SMEs at the Glenview furniture market. There is need for SMEs Owners/Managers to realise the criticality of effective supply chain management practices on the sustainability of their enterprises since supply chains have become important due to cut throat completion (Ali and Alsondos, 2020). According to Ferrer et al., (2022) supply chains in modern businesses have a direct relationship with sustainability hence it needs to be enhanced or without it, consumers will find products less desirable. It should also be noted that Owner/Manager traits are also critical in forging the enterprise ahead as these attributes contribute to the enterprise sustainability since the outcomes are functions of their decisions. These attributes are appropriate for the performance of their enterprises.

The research has updated the framework for sustainable competitive advantage by including new variables – owner/Manager traits which was never looked at in past researches. This study stressed on the effect of owner/manager traits on the sustainable competitive advantage of their enterprises. In this way the research has improved the sustainable competitive advantage model.

The study findings are helpful to smallholder furniture manufacturers at Glenview furniture market and beyond. There need for SMEs to have logistics capabilities and innovative skills in order to be able to achieve sustainable competitive advantage. SMEs Owners/Managers must innovate their products, processes and markets. Future researches must concentrate on supply chain efficacy as it is a critical area that needs further interrogation.

### **References**

- [1] Porter, M., (1985). Competitive advantage: Creating and sustaining superior performance. New York: Free Press.
- [2] A Ali, B. J., & AlSondos, I. A. A. (2020). Operational Efficiency and the Adoption of Accounting Information System (Ais): A Comprehensive Review of the Banking Sectors. International Journal of Management, 11(6).
- [3] Ang, J. S., Cole, R. A., and Lawson, D. (2010). The role of owner in capital structure decisions: An analysis of single –owner corporations. Journal of Entrepreneurial Finance, 14, 1-36.
- [4] Arlbjorn JS, de Haas H, Munksgaard KB (2011). Exploring supply chain innovation. Logistics Research. 3: 3-18.
- [5] Aziz, A., Memon, A. and Ali, S. (2020), “Logistics capability, logistics outsourcing and firm performance in manufacturing companies in Pakistan”, Journal of Asian Finance, Economics and Business, Vol. 7 No. 8, pp. 435-444.
- [6] Bhalla, A. Davies, R. Mabugu, M. and Mabugu, R. (1999). Globalization and Sustainable Human Development: Progress and Challenges for Zimbabwe. United Nations Conference on Trade and Development. Occasional Paper. Unctad/Edm/Misc.128

**Commented [L2]:** Recommendations and implications

- [7] Barney, J. and Clark D., (2007). Resource-Based Theory: Creating and Sustaining Competitive Advantage, Oxford, Oxford University Press.
- [8] Carayannis, E. G., Sindakis, S., & Walter, C. (2015). Business model innovation as lever of organizational sustainability. The Journal of Technology Transfer, 40(1), 85-104. <https://doi.org/10.1007/s10961-013-9330-y>
- [9] Cho, J.K.J., Ozment, J. and Sink, H. (2008), "Logistics capability, logistics Outsourcing and Firm Performance in an e-commerce market", International Journal of Physical Distribution and Logistics Management, Vol. 38 No. 5, pp. 336-359.
- [10] Chipangura, A and Kaseke, N (2012). Growth constraints of small and medium enterprises (SMEs) at Glenview Furniture Complex (GFC) in Harare, Zimbabwe, International Journal of Marketing and Technology, Vol 2 (6), pp 40-83.
- [11] Chinembiri, T. (2007), Exploring the role of Small and Medium Enterprises in economic development, Some policy consideration for Zimbabwe, Zimbabwe Economic Policy Analysis Research Unit (ZEPARU), Vol 7(11) pp 1-34.
- [12] Evangelista P, McKinnon A, Sweeney E, (2012). Supply Chain Innovation for Competing in Highly Dynamic Markets: Challenges and Solutions. Business Science Reference, IGI Global, Hershey PA, USA.
- [13] Helfat C., Finkelstein S., Mitchell W., Peteraf M.A., Singh H., Teece D., and Winter S., (2007). Dynamic Capabilities: Understanding Strategic Change in Organizations. Blackwell Publishing, New York.
- [14] Porter, M.E. Competitive Advantage (1985). Creating and Sustaining Superior Performance; Free Press: New York, NY, USA, ISBN 978-0-02-925090-7.
- [15] Porcu, L., del Barrio-García, S., Kitchen, P. J., & Tourky, M. (2020). The antecedent role of a collaborative vs. a controlling corporate culture on firm-wide integrated marketing communication and brand performance. Journal of Business Research, 119, 435-443. <https://doi.org/10.1016/j.jbusres.2019.10.049>
- [16] Papula, J.; Volna, J. (2013). Core Competence for Sustainable Competitive Advantage. 2013.
- [17] Quaye, D.; Mensah, I. (2018) Marketing innovation and sustainable competitive advantage of manufacturing SMEs in Ghana. Manag. Decis. 57, 1535-1553.
- [18] Barney, J. (1991). Firm resources and sustained competitive advantage. 17, 99-120.
- [19] Afraz, M. F., Bhatti, S.H., Ferraris, A. and Couturier, J. (2021). The impact of supply chain innovation on competitive advantage in the construction industry: Evidence from a moderated multi-mediation model, Technological forecasting and Social change, Vol. 162.
- [20] Ali, I. and Gölgeci, I. (2019), "Where is supply chain resilience research heading? A systematic and co-occurrence analysis", International Journal of Physical Distribution and Logistics Management, Vol. 49 No. 8, pp. 793-815.
- [21] Arsawan, E., Koval, V., Rajiani, I., Rustiarni, W., Supartha, W. and Suryantini, S. (2020), "Leveraging knowledge sharing and innovation culture into SMEs sustainable competitive advantage", International Journal of Productivity and Performance Management. doi: 10.1108/IJPPM-04-2020-0192.
- [22] Bag, S., Gupta, S. and Luo, Z. (2020), "Examining the role of logistics 4.0 enabled dynamic capabilities on firm performance", The International Journal of Logistics Management, Vol. 31 No. 3, pp. 607-628.
- [23] Chen, F., & Krajbich, I. (2018). Biased sequential sampling underlies the effects of time pressure and delay in social decision making. Nature communications, 9(1), 3557.
- [24] Chang, C., Lu, C. and Lai, P. (2021), "Examining the drivers of competitive advantage of the international logistics industry", International Journal of Logistics Research and Applications. doi: 10.1080/13675567.2021.1915263
- [25] Chundu, M., Pindiriri, C and Kaseke, N. (2020). Does size matter in determining the growth of Micro, Small and Medium Enterprises (MSMEs) in Zimbabwe. Open Journal of Business and Management, 8(4).
- [26] Day, M., Lichtenstein, S. and Samouel, P. (2015), "Supply management capabilities, routine bundles and their impact on firm performance", International Journal of Production Economics, Vol. 164, pp. 1-13.
- [27] Eyaa, S. and Ntayi, J. (2010), "Procurement practices and supply chain performance of SMEs in Kampala", Asian Journal of Business Management, Vol. 2 No. 4, pp. 82-88.
- [28] Gligor, D.M. and Holcomb, M.C. (2012), "Understanding the role of logistics capabilities in achieving supply chain agility: a systematic literature review", Supply Chain Management: An International Journal, Vol. 17 No. 4, pp. 438-453.
- [29] Hanbrick, D. C. (2015). Upper echelons theory. In The Palgrave encycloedia of strategic management (p.4). Basingstoke: PalgraveMacmillan.
- [30] Hines T. Supply chain strategies: Customer driven and customer focused. Routledge. 2012.
- [31] Ivanova-Gongne, M., Torkkeli, L., Hannibal, M., Uzhegova, M., Barner-Rasmussen, W., Dziubaniuk, O., & Kulkov, I. (2022). Cultural sensemaking of corporate social responsibility: A dyadic view of Russian-Finnish business relationships. Industrial Marketing Management, 101, 153-164.

- [32] Langley, J. and Capegemini (2017), *"Third-Part Logistics study; the state of logistics outsourcing"*, The 21st Annual Third-Party Logistics Study, Capgemini Consulting, Pennstate.
- [33] Keskin, H., AyarŞentürk, H., Tatoglu, E., Gölgeci, I., Kalaycioglu, O. and Etioglu, H.T. (2021), *"The simultaneous effect of firm capabilities and competitive strategies on export performance: the role of competitive advantages and competitive intensity"*, International Marketing Review. doi: 10.1108/IMR-09-2019-0227.
- [34] Mandal S.(2016). An empirical competence-capability model of supply chaininnovation. BusTheory Practice.17: 138-149.
- [35] O'Marah K. and Hofman, D., (2009). Top 25 supply chains. Supply Chain Management Review, 13 (10), 12-19.
- [36] Lee SM, Lee D, Schniederjans MJ. Supply chain innovation andorganizational performance in the healthcare industry. Int J OpernProd Manage.31: 1193-1214.
- [37] Li, S., Ragu-Nathan, B., Ragu-Nathan, T.S. and Rao, S.S. (2006), *"The impact of supply chain management practices on competitive advantage and organizational performance"*, International Journal of Management Science, Omega, Vol. 34 No. 2, pp. 107-124.
- [38] Makate, C., Makate, M., Siziba, S and Sadomba, Z. W. (2019). The impact of innovation on the performance of the small -to-medium informal metal trade enterprices in Zimbabwe. Cogent Business Management, 6(1), 16-18.
- [39] Mandal S (2016). An empirical competence-capability model of supply chaininnovation. BusTheory Practice.17: 138-149.
- [40] Manyati, T. (2014). Innovation through knowledge sharing: Evidence from the informal sector in Harare,Zimbabwe. African Journal of Science, Technology,Innovation and Development,6(4), 281-288
- [41] Migdadi, M. (2021), *"Knowledge management, customer relationship management and innovation capabilities"*, Journal of Business and Industrial Marketing, Vol. 36 No. 1, pp. 111-124.
- [42] Moreira AC, Ferreira LD, Zimmermann RA (2018). Innovation and Supply Chain Management: Relationship, Collaboration and Strategies. and Springer.
- [43] Mudavanhu, V., Bindu. S., Chigusiwa, L. and Muchabaiwa, L.. (2011), *"Determinants of small and medium enterprises failure in Zimbabwe: A case study of Bindura"*, International Journal of Economic Research, Vol. 2, No. 5, pp. 82-89.
- [44] Mujeyi, K., Mutambara, J., Siziba, S., Sadomba, W. Z., &Manyati, T. K. (2015). Entrepreneurial innovations foragricultural mechanisation in Zimbabwe: Evidencefrom an informal metal industry survey. AfricanJournal of Science, Technology, Innovation andDevelopment,7(4), 276-285.
- [45] Karagöz, B. and Akgün, E.A. (2015), *"The roles of IT capability and organizational culture on logistics capability and firm performance"*, Journal of Business Studies Quarterly, Vol. 7 No. 2, pp. 1-23.
- [46] Kwak, D.-W., Seo, Y.-J. Mason, R. (2018), *"Investigating the relationship between supply chain innovation, risk management capabilities and competitive advantage in global supply chains"*, International Journal of Operations & Production Management, Vol. 38 No. 1, pp. 2-21
- [47] National R and D Survey Report (2019), *"Report on the National and Development Survey of SMES and Cooperatives"*, Research council of Zimbabwe, Harare, Zimbabwe.
- [48] Samudzimu, B. P. H. and Munkumba, M.D.B. (2022). *"Small to medium enterprises government - aided financing in Zimbabwe: A theoretical perspective"*, International Journal of Economics and management Sciences, Vol. 11, Issue.4.
- [49] Sandberg, E.and Abrahamsson, M, (2011). Logistics capabilities for sustainable competitive advantage, International Journal of Logistics, (14), 1, 61-75. International Journal of Logistics is available online at informaworldTM: <http://dx.doi.org/10.1080/13675567.2010.551110>
- [50] Sayham, M., Cigdem, S., Yildiz., B and Meidute-Kavaliauskiene, L. (2021). Supply chain -Innovation: Past, Present and Future, Independent Journal of Management and Production, Vol 12(8), 2094-2116.
- [51] Saunders, M., Lewis, P. and Thornhill, A. (2003). Research Methods for Business Students. 3 rd Edition. England and Pearson Education Limited.
- [52] Small Enterprise Development Corporation (SEDCO). 2011. Annual Report.
- [53] Sukati I, Hamid ABA, Baharun R, Tat HH, Said F. (2011). A study of supplychain management practices: An empirical investigation on consumerngoods industry in Malaysia. IJBSS.2: 166-176.
- [54] Sunil, K (2019). Supply chain innovation: Core capabilities required and expected outcomes, Journal of information technology and software engineering, vol. 9 (1).
- [55] Sun, Y., Wang, Z., Yan, S., & Han, X. (2022). Digital showroom strategies for dual-channel supply chains in the presence of consumer webrooming behavior. Annals of Operations Research, 1-40. <https://doi.org/10.1007/s10479-021-04475-5>

- [56] Taghipour, A., Khazaei, M., Azar, A., Rajabzadeh Ghatari, A., Hajiaghahi-Keshteli, M., & Ramezani, M. (2022). Creating Shared Value and Strategic Corporate Social Responsibility through Outsourcing within Supply Chain Management. *Sustainability*, 14(4), 1940. <https://doi.org/10.3390/su14041940>
- [57] Thun, J., Drüke, M.M. and Hoenig, D. (2011), "*Managing uncertainty – an empirical analysis of supply chain risk management in small and medium sized enterprises*", *International Journal of Production Research*, Vol. 49 No. 18, pp. 5511-5525.
- [58] Tarafdar, M., & Qrunfleh, S. (2017). Agile supply chain strategy and supply chain performance: complementary roles of supply chain practices and information systems capability for agility. *International Journal of Production Research*, 55(4), 925-938.
- [59] Tseng, M.-L., Ha, H. M., Tran, T. P. T., Bui, T.-D., Lim, M. K., Lin, C.-W., & Helmi Ali, M. (2022). Data-driven on sustainable food supply chain: a comparison on Halal and non-Halal food system. *Journal of Industrial and Production Engineering*, 1-28. <https://doi.org/10.1080/21681015.2022.2040622>
- [60] Tukamuhabwa, B., Mutebi, H. and Kyomuhendo, R. (2021), "Competitive advantages in SMEs: Effect of supply chain management practices, logistics capabilities and logistics integration in a developing country", *Journal of Business and Socio-Economic Development*, Vol. <http://doi.org/10.1108/JBSED-04-2021-0051>
- [61] Widajanti, E., Nugroho, M. and Riyadi, S. (2022), Sustainability of Competitive advantage based on supply chain management, Information Technology Capability, Innovation and Culture of Managers of Small and Medium Culinary Businesses I Surakarta, *Journal Modern PM.com*, 30(10), 83-93.
- [62] World Bank report (2017), Skills to Support the Transport and Logistics Sector; Toward Productive, Efficient and Competitive Transport and Logistics Sector in Uganda, Washington, DC, available at: <https://openknowledge.worldbank.org/handle/10986/28945>.
- [63] Yuan, B., Gu, B., Guo, J., Xia, L., & Xu, C. (2018). The optimal decisions for a sustainable supply chain with carbon information asymmetry under cap-and-trade. *Sustainability*, 10(4), 1002.
- [64] Zhu, C., Du, J., Shahzad, F., & Wattou, M. U. (2022). Environment Sustainability Is a Corporate Social Responsibility: Measuring the Nexus between Sustainable Supply Chain Management, Big Data Analytics Capabilities, and Organizational Performance. *Sustainability*, 14(6), 3379. <https://doi.org/10.3390/su1406337>