

The Mediating Role of Training and Development on the Relationship Between Supply Chain Management and Operational Performance of Selected Manufacturing Firms in Mogadishu, Somalia.

Mohamed Hamud Warsame

Al-Madinah International University Malaysia
mr.xaamud100@gmail.com

Abdoulrahman Aljounaidi

Al-Madinah International University Malaysia
abdulrahman.ramez@mediu.edu.my

Mukhtar Idris Abu Baker Adam

Al-Madinah International University Malaysia
mukhtar.adam@mediu.edu.my

Alharath Ateik

Al-Madinah International University Malaysia
alharath.ateik@mediu.edu.my

Abstract

This study examines the mediating role of training and development in the relationship between supply chain management (SCM) practices and operational performance (OP) among selected manufacturing firms in Mogadishu, Somalia. A quantitative study of 367 workers from 10 prominent industrial companies in Mogadishu was carried out. The study investigated the associations between operational performance and five supply chain management practices: information sharing, lean manufacturing, delay strategy, strategic supplier partnerships, and customer connections. Additionally, it evaluated how training and growth mediated these associations. The direct and indirect connectivity patterns were analyzed using structural equation modeling. The findings demonstrate that lean manufacturing and customer interactions significantly improve operational performance. Information exchange and strategic supplier partnerships, however, do not appear to have a direct impact on performance. With the exception of lean production's direct impact, training and development was shown to somewhat mediate the relationships between the majority of supply chain strategies and performance. Significant performance levels are also increased by experience applying lean manufacturing, delay strategy, and customer relationship management techniques. The results provide Somali manufacturers with useful suggestions for improving supply chain strategies and investing in training. Employee learning has a mediating function, which emphasizes how crucial it is to leveraging other strategic initiatives. The study also emphasizes how management practices and performance in demanding contexts are shaped by context-specific elements.

Keywords: Supply Chain Management, Operational Performance, Training and Development, Manufacturing Firms, Somalia

1. Introduction

Supply chain management has entered growing attention in academics and business also has become a key strategic tool for enhancing efficiency and competitiveness in the manufacturing sector. In developing economies like Somalia, effective SCM practices are critical for sustaining production, reducing costs, and increase functional effectiveness and meeting customer expectations. However, the implementation of SCM strategies alone does not guarantee improved operational performance. The

management of the activities that are involved in the production and distribution of goods and services from suppliers to customers is what SCM entails. In the present rigorous business landscape, well-organized SCM practices are essential for businesses to maintain their success and remain competitive. (Yalcin et al., 2020).

Supply Chain Management (SCM) has become a key strategic tool for enhancing efficiency and competitiveness in the manufacturing sector. In

developing economies like Somalia, effective SCM practices are critical for sustaining production, reducing costs, and meeting customer expectations. However, the implementation of SCM strategies alone does not guarantee improved operational performance. Training and Development (T&D) play a vital role in ensuring that employees possess the necessary skills and knowledge to effectively execute supply chain strategies. This paper examines how T&D mediates the relationship between SCM practices and operational performance among selected manufacturing firms in Mogadishu, Somalia.

Numerous studies have explored the relationship between SCM and operational performance (OP), highlighting the significance of the effective of SCM techniques in achieving performance goals. The effectiveness of a company's operations is crucial to its expansion. Several studies have examined the factors influencing operational success in industries. Findings indicate a strong link between SCM integration, quality management, and lean manufacturing in terms of operational performance. It has been shown that SCM techniques including quality control, lean manufacturing, and supply chain integration increases operational efficiency. The critical role of effective SCM practices in optimizing performance has been consistently emphasized in research (Rizwan et al., 2022).

2. Literature Review

2.1 Supply Chain Management Practices

A supply chain, as stated by Mohamud and Mwangi (2021), refers to building of a value chain network involving several active organizations aimed at providing information and resources necessary for achieving the objectives of efficient component flow and supplier management.

A network of distributors, retailers, carriers, warehouses, and suppliers who take part in the marketing, production, and delivery of a certain good is called the supply chain (SC) (Christopher, 2010). Suppliers and customers are part of this business network. Lambert (2010). "Supply chain management" is a word that has several meanings. However, to enhance the SC's overall competitiveness, SCM has been described for this study as incorporating organizational departments throughout the SC and managing flows to fit client needs (Adebayo, 2012).

The goal of SCM is to foster the long-term success of companies including the SC in general. It serves as an integrative function, linking companies and

key business processes both within and across organizations to create a cohesive and highly effective business model. Today's world of competition has become more fierce due to perfect competition and ideal marketplaces (Pujawan, 2010). Increasing internal corporate efficiency is insufficient these days. The competition now exists not only between businesses but also between supplier networks, thus the efficiency of the entire SC is required. There are upstream and downstream supply levels in the Supply Chain.

The four dimensions of the SC are addressed by these four strategies: information flow via the SC (sharing information), internal SC operations (lean manufacturing and postponement strategy), and the upstream (strategic supplier partnership) and downstream (customer relationship) sides of the SC (Tan, 2002; Jabbour et al., 2011).

2.2 Strategic Vendor Partnership

Supply chain management is a crucial idea that enables a company to interact with its supply partner efficiently and adapt to the problems in a competitive environment so that long-term beneficial relations can be built (Sambasivan et al, 2013). The relationship between suppliers and manufacturing organizations becomes challenging when the number of suppliers rises along with the supply base's stark difference. Because there is a larger chance of disruptions due to challenges getting key components, the upstream side of the supply chain bears the brunt of the operational stress caused by complex interconnections. The pharmaceutical industries are anticipated to gain more from strategic partnerships in supply chain management. A supplier partnership is an agreement between two or more companies to support one another in crucial areas including product production, marketing, distribution, and research. Khan et al. (2015) claim that information integration and working with such a provider have an impact on the supply chain's efficacy.

2.3 Information Sharing

Information sharing is essential to the operation of good supply networks. Information sharing, according to Lee & Whang (2000), is the exchange of product-related data, including performance, order status, delivery dates, and inventory levels. The information offered to pharmaceutical enterprises with more visibility, improved production and manufacturing performance. The degree of ambiguity and misunderstanding is reduced by regular and open communication actions carried out among supply chain parties (Agrawal & Pak, 2001).

2.4 Customer Relationship

Customer relationship is a significant concern while competing on a global scale. Its main aim is to enhance organizational performance thus assisting firms to improve business quality outcomes is linked to customer pleasure (Guerola-Navarro et al., 2020). Assessing customer satisfaction helps measure a company's effectiveness in meeting consumer expectations. Customer satisfaction is defined as an individual's evaluation of actual productivity and efficiency compared to their expectations of a company (Dehmonde, Shahraki, & Lakzae, 2010).

2.5 Lean Manufacturing

One of the most widely used manufacturing systems is Lean Manufacturing (LM). Several academic studies show a correlation between is Lean Manufacturing implementation and better operational success (Marodin and Saurin, 2013; Rezende et al., 2016). According to Shah and Ward (2003), the basic objective of lean manufacturing methods and principles is to improve operational performance while minimising waste and unpredictability in the processes.

2.6 Postponement Strategy

Alderson (1950) was the first to introduce the concept of postponement from a marketing management perspective. Although the idea has existed for decades, significant research interest in postponement has only surged in recent years. These tactics are frequently characterized as being mass customisation and agility. According to Bucklin (1965), the channel inventory should be carried by either a supplier or a customer, depending on whether it should be upstream waiting for customer orders or downstream anticipating future customer orders are received, aiming to customise products rather than performing these tasks in advance. In supply chain, postponement involves deferring certain operations until orders are received, aiming to customise products rather than performing these tasks in advance (Van Hoek 2001). Boone et al. (2007) and Yeung et al. (2007) The core idea behind this approach is that waiting enables access to better information, which helps mitigate risks and uncertainties associated with early action (Yang B. et al., 2004). While the literature on postponement strategies is extensive, there is still limited research addressing their impact on supply chain risk. Choi Kanghwa et al. (2012).

2.7 Concept of Training and Development

According to (Mayiams, 2002) defined Training is a learning activity aimed at acquiring specific knowledge or skills needed for current duties, allowing employees to contribute to the company in their existing roles. This is how training differs from development. Training should result in a change in attitude, behavior, as well as the new abilities and

knowledge on the execution of the work in order for you to be successful.

Development is a continual process that broadens and dynamically expands the employee's knowledge base, giving them the skills and information base, they will need in the future. Because learning entails developing general skills rather than knowing how to perform particular activities, any learning that is transferred is thus non-specific, and learning environments are never the same as working environments. To guarantee the company's longevity, career development's primary goal is to equip the employees with skills necessary to address current challenges and future demands. Research indicates that training was primarily used to give workers the knowledge, skills, and experience related to their jobs so they could carry out their responsibilities or improve their performance. The breadth and overall influence of training on an organization are more restricted. Long-term theoretical knowledge gain for broad purposes is called development. Previous discussions on the definitions of Organizational Development (OD) (Egan, 2002) and Career Development (CD) (Upton, Egan, & Lynham, 2003) have contributed significantly to our understanding of these key components of Human Resource Development (HRD). Building on these earlier insights, we recognized the need to further explore the concepts of training and/or training and development as well.

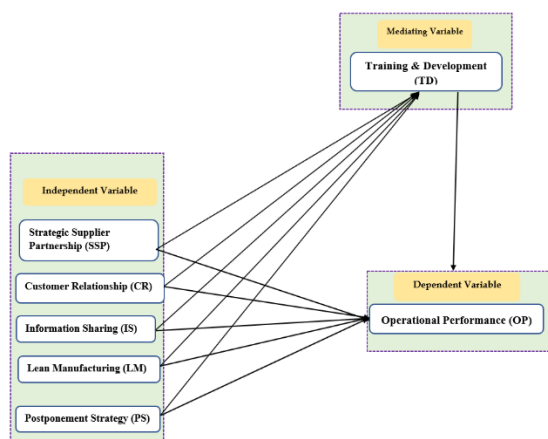
2.8 Operational Performance

The concept evaluates an organization's performance against standards, accounting for factors such as cycle time, environmental responsibility, efficiency, rule compliance, waste reduction, and cycle time (Vencataya, 2011). Operational performance indicates that the main goals of a company's internal operating capacity are to improve delivery capacity, increase productivity, improve product quality and create new goods, and minimize costs and waste. (Riyadi & Munizu, 2013). Production cycle time, reliability, and stock rotations are measurable components of a system that are included in operational performance. Voss, Hlstrom, and Blackmon (1997) argue that it also represents factors like customer satisfaction and market share, which are crucial to a company's success. A company's operational performance is often evaluated against established standards of effectiveness, efficiency, and accountability, including metrics like productivity, waste reduction, and legal compliance (Slack et al., 2004).

Quality, cost, speed, flexibility, and dependability are the five performance criteria, as noted by Vencataya et al. (2015). Businesses value operational performance because it increases production efficiency, produces items of superior

quality, and has satisfied customers, all of which led to increased profits and sales (Kaynak & Harley, 2008). The operational performance of the business is determined by how successfully and efficiently it generates goods and services, as well as by how well those goods and services satisfy the needs and expectations of customers (Vencataya, 2011). According to Hwang, Han, Jun, and Park (2014), operational performance is crucial for managing an organization's procedures and for building a basis for long-term competitiveness. Additionally, it facilitates the business's ability to fulfill its core objectives, which include productivity, quality, and service delivery (Bayo-Moriones & De Cerio, 2002).

This study seeks to address a gap in the literature by investigating how training and development mediate the relationship between supply chain management techniques and operational performance in selected industrial firms in Mogadishu, Somalia. This study will enrich the body of knowledge by investigating the factors that could enhance operational performance in Mogadishu, Somalia. It will also provide insight into how companies operating in this area can improve their supply chain management procedures and training and development initiatives to improve operational performance. Overall, scholars and practitioners focused on supply chain management and firm performance in Africa stand to gain valuable insights from this study's findings (Wieland, 2021).



Conceptual Framework of this Study.

3. Research Methodology

This study was adopted a quantitative approach structured a set of questionnaires was distributed a sample size of 240 management and senior workers from all supply chain managers and top supply chain officers of Coco- Cola Company, Shaakir Foam Factory and Somali Plastic Factory in Mogadishu. Purposively, 70% of the sample size (168 people)

represents supply chain managers, while the remaining 30% (72 people) represents supply chain officers. Following that, the sample size for each section was calculated using proportional stratified sampling manner.

The questionnaire utilised a 5-point Likert scale, ranging from strongly disagree to strongly agree, scored from 1 to 5. 5-point Likert scale, ranging from strongly disagree to strongly agree, scored from 1 to 5. The data obtained from the scores were analysed using the Structural Equation Modelling (SEM) statistical tool to test both direct and indirect (mediating) relationships between variables. Five SCM practices served as independent variables: Strategic Supplier Partnership (SSP), Customer Relationship (CR), Information Sharing (IS), Lean Manufacturing (LM), and Postponement Strategy (PS). Training and Development (TD) acted as a mediating variable, and Operational Performance (OP) served as the dependent variable. The population for this study consisted of all employees working in manufacturing firms in mogadishu. Below is the sampling technique using the formula from Slovin (Riduan, 2011) as follows:

$$n = N / [1 + N (e)^2]$$

Where:

N = Target population

n = sample size

e = level of precision=0.05, given confidence level 95%

$$\text{Thus, } n = 600 / [1 + 600(0.05)^2] = 240$$

4. Findings and Data Analysis

The results of the study demonstrated that Lean Manufacturing (LM), Information Sharing (IS), Customer Relationships (CR), and Strategic Supplier Partnerships (SSP) all significantly improved Operational Performance. Additionally, the effects of and Training and Development (TD) on Operational Performance were positive. The following hypotheses were confirmed: H2, H4, H5, H6, H7, H8, and H9. According to the results, the greatest predictor of operational performance (OP) was training and development (TD), whereas information sharing (IS) was the best predictor of OP.

The mediator analysis revealed that Training and Development (TD) completely mediated the impacts of Strategic Supplier Partnership (SSP), and Information Sharing (IS), on Operational Performance (OP). Training and Development (TD) also helped to moderate the impacts of Customer Relationship (CR), and Lean Manufacturing (LM)

on Operational Performance. Thus, the hypotheses H10, H11, H12, and H13 were supported.

Finally, the final phase of the research used an Independent Sample T-test to investigate the mean difference in Operational Performance (OP) across gender groups (H14). The study also employed an ANOVA test to compare the mean difference in Operational Performance (OP) among age groups, experience levels, job positions, and educational levels (H15, H16, H17, H18). The results showed that the mean value of Operational Performance (OP) differed considerably across educational levels. The Tukey HSD test, often known as the post-hoc test, revealed that respondents with a Bachelor's and Master's degree had considerably greater views of Operational Performance (OP) than those with a Doctoral degree.

List of Constructs and Measurement

Construct	Number of Items (36)
Strategic Supplier Partnership (SSP)	5
Customer Relationship (CR)	5
Information sharing (IS)	5
Lean manufacturing (LM)	5
Postponement Strategy (PS)	5
Training and development (TD)	6
Operational Performance (OP)	5

5. Profile of Respondents

The frequencies and percentages of the demographic variables are shown in Table 4.4.

Sample Profile

Group	Frequency	Percentage
Gender		
Male	145	39.5
Female	222	60.5
Age		
Under 30 years old	132	36.0
30 to 40 years old	183	38.1
Above 40 years old	52	10.8
Experience		
Under 2 years	32	8.7
3 to 5 years	57	15.5
6 to 10 years	161	43.9
Over 10 years	117	31.9
Job Position		
Supply Chain Manager	170	46.3
Supply Chain Officer	116	31.6
Procurement Officer	81	22.1
Education		
Bachelor degree	234	63.8
Master degree	67	18.3
Doctoral degree	66	18.0

In conclusion, the sample profile presents an image of a youthful to middle-aged, skilled, and educated set of supply chain specialists employed in managerial capacities throughout Somali manufacturing companies. This raises the acquired data's legitimacy and applicability.

Examining Results of Hypothesized Direct Effects of the Constructs

Path	Unstandardized Estimate	Standardized Estimate	critical ratio	n P-value	Result
SSP → OP	-0.052	0.038	-0.057	-1.361	0.174 Rejected
CR → OP	0.171	0.050	0.167	3.439	.001 Supported
IS → OP	-0.017	0.047	-0.020	-0.367	.714 Rejected
LM → OP	0.186	0.046	0.193	4.060	.000 Supported
PS → OP	.134	.059	.113	2.261	.024 Rejected
SSP →	.490	.040	.539	12.211	.000 Supported

TD

CR → TD	.125	.046	.122	2.718	.007	Rejected
IS → TD	.172	.043	.197	4.023	.000	Supported
LM → TD	-.050	.043	-.052	-1.159	.247	Rejected
PS → TD	.305	.053	.258	5.761	.000	Supported
TD → OP	.414	.044	.417	9.487	.000	Supported

Implications, Recommendations and Conclusions

6. Implications Of the Study

The study found that supply chain management approaches such as SSP, CR, IS, LM, and PS had a substantial impact on OP. The study stresses the importance of staff development in improving operational performance and the mediating function that training and development play in the linkages between SCM strategies and OP. The results show that OP varies significantly depending on years of experience, job title, and educational attainment, highlighting the necessity of taking demographic variables into account when putting supply chain management procedures and training programs into place. To sum up, the research findings highlight the significance of staff development, SCM techniques, and demographic aspects in improving the operational performance of manufacturing companies in Mogadishu, Somalia. These insights are relevant for both researchers and practitioners. this research study offers important theoretical implications by highlighting the impact of demographic factors on operational outcomes, validating the effects of SCM practices on operational performance, and demonstrating the mediating role of training and development. The findings provide a deeper understanding of the connection SCM, employee development, and personal differences in the manufacturing companies located in Mogadishu, Somalia. (Ibrahim, 2020).

7. Recommendation Of the Study

The researcher recommends conducting more future research should address the shortcomings of the current study and explore new paths in order to further our understanding of SCM, human development, and OP in manufacturing firms. Researchers may help develop more successful techniques for improving operational results in a

variety of industrial situations by broadening the scope of their studies, using more rigorous methodology, and taking into account more variables. The following sections outline potential directions for future investigation:

Expanding the Sample Size and Scope: Subsequent studies may increase the sample size by include additional manufacturing companies from other sectors and geographical areas. This would improve the findings' generalizability and offer a more thorough comprehension of the interactions between the variables in various circumstances. (Henseler, 2020)

Longitudinal Research Designs: Further study may use several time-point evaluations or longitudinal research methodologies to further understand the dynamic nature of operational performance, training and development programs, and supply chain management strategies. This strategy would aid in capturing the variations in these factors over time and offer perceptions on their long-term consequences. (Smid et al., 2020)

Mixed-Methods Approaches: Future research could incorporate both quantitative and qualitative data collection methods to triangulate the findings and enhance their validity. For example, focus groups or in-depth interviews could be conducted to gain deeper insights into employees' perspectives and experiences regarding supply chain management practices and training programs (Collier, 2020).

Expanding the Scope of Supply Chain Management Practices: There are five SCM practices that are the subject of this study. Subsequent studies may examine the impacts of additional strategies on Operational Performance, including inventory management, transportation management, and demand management. This would offer a more thorough comprehension of supply chain management's contribution to performance improvement.

Incorporating External Factors: Subsequent investigations may integrate exogenous variables, such as market dynamics, regulatory frameworks, and technology developments, into the study framework to furnish a more comprehensive perspective on the elements influencing Operational Performance. By doing this, firms would be better able to identify external variables that may affect their performance and create plans to deal with them. (Baraldi & Enders, 2010).

Moderating Effects of Demographic Factors: The direct impact of demographic demographics on operational performance is investigated in this study. Subsequent investigations may examine the plausible moderating impacts of these variables on the correlations among supply chain management

methodologies, employee training and development, and operational performance. This would give light on the possible interactions between individual differences and these variables to affect performance. (J. Hair et al., 2023).

8. Conclusion

In conclusion, future research should address the shortcomings of the current study and explore new paths in order to further our understanding of SCM, human development, and OP in manufacturing firms. Researchers may help develop more successful techniques for improving operational results in a variety of industrial situations by broadening the scope of their studies, using more rigorous methodology, and taking into account more variables.

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