Journal of Supply Chain Management Systems
13 (1) 2024, 28-40
http://publishingindia.com/jscms/

The Effects of Lean Supply Chain Management on Organisational Performance in Case of FAFFA Food S.C.

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Abstract

Lean supply chain management enables firms to tailor their processes and organisational roles to support lean supply chain principles. The study aimed to investigate the effect of lean supply chain management on organisational performance in the FAFFA Food S.C. The study employed descriptive and explanatory research design. Out of the study population of 151 enterprise employees, a sample size of 110 was taken using a stratified sampling technique. Questionnaires were used with a response rate of 85%. Data was analysed using descriptive statistics, correlation and regression analysis with the help of SPSS software. The study indicated that lean supply chain management is practised in FAFFA Food S.C. occasionally. The study revealed that lean supply chain management practice contributed to FAFFA Food S.C. organisational performance to a moderate extent, and there is a significant relationship between lean supply chain management practices and FAFFA Food S.C.'s organisational performance. The study further revealed that lean procurement, lean supplier, and lean warehousing practices had a powerful influence on the organisational performance of FAFFA Food S.C. The study also showed that FAFFA Food S.C. faced challenges, misunderstanding of lean, and resistance to broad change. The study recommended giving priority and enhancing the lean supply chain management practices to improve its organisational performance from the current position significantly.

Keywords: Lean Supply Chain Management, Lean Procurement, Lean Production, Lean Transportation, Lean Warehousing, Lean Supplier, Lean Customer

Introduction

According to Lewis (2000), implementing lean supply chain management allows companies to adapt supply chain processes and organisational roles to support lean supply chain principles. A lean supply chain is an excellent solution for any business that wants to become simpler and more efficient. Companies within a lean supply chain can more easily leverage their off take strategy and provide better customer value by meeting their needs more efficiently, quickly and predictably. This, in turn, facilitates the operation of a lean supply chain and creates a virtuous cycle that ultimately leads to better financial performance for these companies. Therefore, companies pursuing lean would benefit from a systematic approach to building and managing their supply chain. Lean Supply Chain requires companies to examine their business processes to identify areas where resources are being wasted, which can be measured in monetary terms. This provides an opportunity to minimise waste and improve task execution. According to Hines, Holweg and Rich (2004), Belgian service companies found that lean management aims to create value from a different perspective of the customer than that of the manufacturer by rethinking the organisation's value streams and adopting practices that create added value. Lean supply chain management has resulted in improved business performance. Therefore, Lehtinen (2005) clearly states that the lean concept suits food companies. Lean manufacturing gives food companies the tools to review and eliminate unnecessary inventory and other forms of waste in the supply chain. By applying Lean, a food company can increase customer value by reducing costs or offering additional value-added services, such as shorter delivery times.

In the manufacturing industry, especially in the food industry, the supply chain is the most expensive activity requiring attention, effective strategy and management. These industries must have a clear supply chain strategy and direction that supports the companies' business strategy. In addition, supply chain management includes Production planning, inventory control, sales, and logistics processes must be well integrated and coordinated to reduce costs and increase profit margins (Heizer, 2011). In most Ethiopian food industries, including FAFFA, supply chain strategies and activities have not been clearly described and articulated. Supply chain decisions in this industry are primarily aimed at achieving short-term profits. Furthermore, the performance characteristics of the customer-centric and internally focused supply chain system were not diagnosed and evaluated for improvement and comparison (FAFFA Foods SC – Business Plan, 2013-15 GC). Furthermore, the study by Daniel (2015) indicates that poor lean practices characterize the supply chain in Ethiopia. Azman (2010) and Wasonga (2014) therefore recommend that companies focus on the issues encountered when implementing a lean supply chain and the impact of supply chain practices and outcomes. Although lean supply chain practices are well integrated into business strategy, the results are neither quantified nor described (FAFFA et al. – Business Plan, 2013-15 GC). Ultimately, the researcher identified a gap that indicates the need for further research in this area. It is clear that there is no known local research on this phenomenon, and in this context, the researcher aims to identify the impact of lean supply chain practices on company performance, particularly concerning FAFFA Food Share Company. The intended goal of conducting this study is to clarify the following questions.

- What are the effects of lean procurement on organisational performance at FAFA Food S.C.?
- What are the effects of lean production on organisational performance at FAFA Food S.C.?
- What are the effects of lean transportation on organisational performance at FAFA Food S.C.?
- What are the effects of lean warehousing on organisational performance at FAFA Food S.C.?
- How does lean suppliers' practice affect organisational performance at FAFA Food S.C.?
- What are the effects of lean customer practice on organisational performance at FAFA Food S.C.?
- What challenges affect the implementation of lean supply chain management at FAFA Food S.C.?

The rest of the paper is organised as follows. In section 2, we provide a literature review which includes theoretical review, empirical review and conceptual framework. Section 3 presents research methodology and description of study which includes instrument of measurements and reliability test. Section 4 presents results and interpretations on aggregate mean value and standard deviation of constructs, descriptive statistics of challenges faced during the implementation of lean supply chain management, correlation, model summary, ANOVA model fit and regression analysis. A summary of findings, conclusion, recommendation are presented in section 5, 6, and 7 respectively. Finally, suggestion for future studies presented in section 8.

Literature Review

Theoretical Foundation

To be effective, companies worldwide must leverage their comparative advantage, which comes in many forms, including low production costs and differentiated product selection at higher prices. According to Porter (1990), companies must provide high-quality products and deliver services more efficiently to maintain a competitive advantage.

The Concept of Lean

There are many definitions to define "Lean". For example, the National Institute of Science and Technology (NIST/MEP, 1998) explains Lean as "a systematic approach to identifying and eliminating waste (non-value-added activities) through continuous improvement through the pursuit of excellence by the customer" (Buzby et al., 2002). Put simply, lean means creating more customer value with fewer resources. In other words, the main idea is to maximize customer value while minimizing waste. In fact, the word "lean" was used for the first time in the "Future Car Investigation" study conducted by MIT professors to interpret the new Japanese production system that eliminates mass production (Womack et al., 1991; Macduffie & Helper, 1997; Conti et al., 2006) which produces a lot of waste. By "waste" we mean anything that impairs the smooth running of production (Macduffie & Helper, 1997). The eight wastes highlighted in the TPS are overproduction, waiting, transportation, over-processing, excess inventory, movement, defects, and unused employee creativity, of which overproduction

is the most important (Monden, 1998; Liker, 2004). Wu and Wee (2009) stated that the term lean refers to a set of activities or solutions aimed at eliminating waste, reducing non-value-added operations (NVA), and improving value creation (VA). The idea of VA and NVA mainly comes from TPS. A lean organisation understands customer value and focuses its key processes on continuously increasing this. The ultimate goal is to deliver outstanding customer value through a zero-waste, superior value-added process. For Lean to be successful, the level of thinking must shift from optimizing individual technologies, resources and vertical departments to optimizing the flow of products and services across entire workflows, with value flowing horizontally across technologies, resources and departments (Lean Enterprise Institute, 2009). Eliminating waste along value streams rather than at isolated points creates processes that require less human effort, less space, less capital and less time to produce products and services at significantly lower costs and with far fewer errors than traditional commercial systems. Companies can meet changing customer expectations by offering wide variety, high quality, low costs and short delivery times. According to Anand and Kodala (2008), researchers have only recently paid attention to the possibility of extending Lean theory and principles, as well as associated tools, techniques, practices and procedures, across borders to organisational aspects in supply chains. However, the concept of lean supply chain was proposed in 1994 when lean manufacturing advocates Womack and Jones (1994) proposed the concept of "lean enterprise."

Empirical Review on Lean Supply Chain Management

Numerous studies have been carried out in the area of lean supply chain management. Azman (2010) conducted a study on the implementation of lean supply chain in the Malaysian electrical and electronics industry: practices and performance. The study found that lean performance is an indicator of lean supply chain practices in the Malaysian context and demonstrated the influence of lean performance factors on lean supply chain practices.

Wasonga (2014) conducted a study on lean supply chain management practices in the service sector in Kenya, using Kenyatta National Hospital as a case study, and found that lean sourcing practices in the supply chain and improved Supply chain performance are positively related to each other. The study recommends integrating lean supply chain processes, creating awareness and motivating employees about the benefits of lean practices, and increasing organisational awareness and commitment to efficient and effective hospital operations. In addition, the study also suggests further research in the areas of lean supply chain management and its impact on business performance.

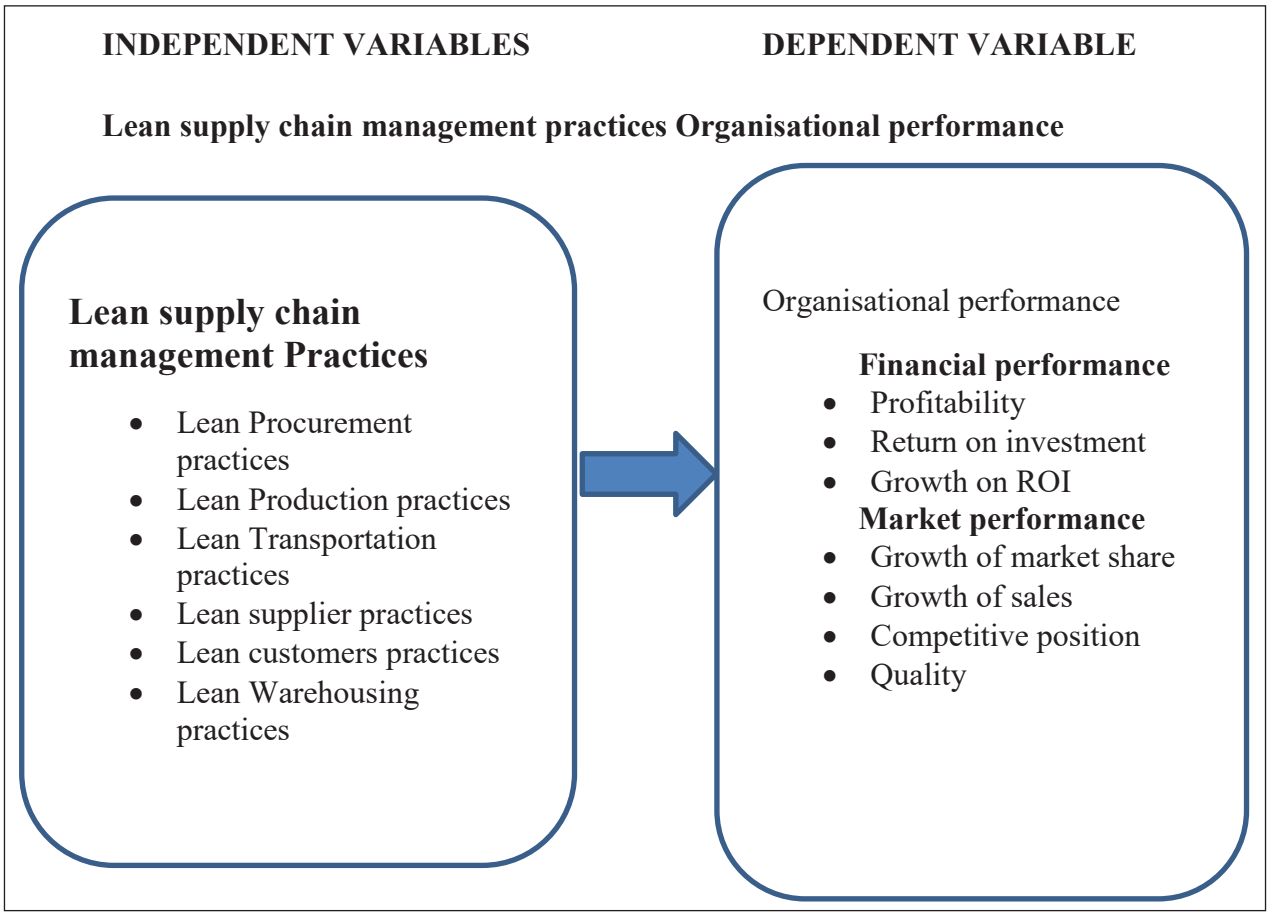
Hejna and Hosking (2003) conducted a study on operational efficiency and recommended various strategies that were considered important to achieve operational efficiency. Their study found that expected improvements in operational efficiency occur through asset ++ replacement, but these improvements do not apply in all cases and are often due to increased service volumes and fundamental changes in service delivery systems.

Wanjiku (2013) conducted a study on LSCM in manufacturing companies in Kenya. He emphasised that the implementation of LSCM has a positive relationship with the operational performance of manufacturing companies. Additionally, the study found that for LSCM success in the manufacturing sector, managers needed to engage suppliers and acquire more skills and knowledge about LSC management.

Rono (2013) conducted a study on lean manufacturing practices in the continuous manufacturing industry at Bamburi Cement Limited. He pointed out that few researchers have studied the use of lean manufacturing tools and techniques in continuous process industries. His study found that lean manufacturing is not being implemented well.

Little research has been conducted on lean and lean management in the supply chain in Ethiopia. Daniel (2015) conducted a study on the lean philosophy for global competitiveness in the chemical industry. It shows that the lean practice in Ethiopia is very poor and that the lean philosophy can ensure the competitiveness of the chemical industry. The main reason for this study is the lack of empirical evidence on the effects of lean supply chain management on organisational performance (Fig. 1).

Conceptual Framework



Source: Adapted from: - Patric m.muchiri (2014) and Mutua Muskyoka (2014).

Fig. 1: Conceptual Framework

Research Methodology and Description of Study Area

Description of the Study Area

FAFFA Food S.C. is the pioneer of the food industry in Ethiopia. It is located in Addis Ababa, on Debrezeyit Road, between Saris and Kality roundabouts. The company was founded in 1962 as a Swedish joint venture whose aim was to reduce the risk of malnutrition among Ethiopian children by producing affordable, protein-rich baby food. The company was privatised after moving to Petram Private Limited Company in August 2009. Under the new ownership, FAFFA Food Share Company increased its production capacity, diversified and introduced new products. Currently, the company produces over 21.6 tons of nutritious food per year. The Company produces various products namely FAFFA, Cerifam, Famix, Edget Milk, Dube Duket, Favena and Corn Flakes and supplies breakfast cereals to the market. Looking forward, the company plans to produce new products while remaining competitive and placing a strong focus on consumer satisfaction to provide society with the healthiest and most nutritious food products.

Research Methodology

This research was descriptive and explanatory and used a mixed research approach. The entire study population

consisted of FAFFA S. C. employees, and 110 samples, which were collected using a stratified sampling technique (the formula of Yamanes 1967). Finally, the data was collected via a questionnaire and analysed using SPSS.

Table 1

	Departments	Population	Sample
Valid	Management	10	7
	Procurement	12	9
	Production	68	49
	Warehouse	16	12
	Marketing	18	13
	Transportation	27	20
	Total	151	110

Sources: FAFFA, 2020 and own computation using Yamane's (1967) formula.

Instruments and Measurements

To conduct the research, the questionnaires were organised using a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree." Of the 110 questionnaires distributed, only 94 (85.5%) were considered valid and used for analysis. SPSS v. 23 was used as a tool to analyse the collected data.

Table 2: Reliability Test

	Variable Name	Cronbach's Alpha	No. of Item
1	Lean procurement	0.762	6
2	Lean production	0.705	6
3	Lean transport	0.733	5
4	Lean customer	0.741	5
5	Lean supplier	0.730	5
6	Lean warehouse	0.747	6
7	Organisational performance	0.800	7
8	Overall	0.929	40

Source: Respondents survey result test, 2020.

According to Sekaran (2005), the most commonly used technique in the literature to assess the reliability and stability of a scale is the use of Chronbach's alpha statistics. To ensure a reliable scale, the Chronbach alpha value should be greater than 0.70 and any scale with a Chronbach alpha below this standard should be discarded. Cronbach's alpha for Lean Purchasing, Lean Manufacturing, Lean Transportation, Lean Customers, Lean Supplier, Lean Warehouses and Lean Organisational Performance was 0.763, 0.705, 0.733, 0.741, 0.730, 0.747 and 0.800, respectively, meaning that the items of the construct indicate the same basic arrangement.

Results and Interpretations

Table 3: Aggregate Mean Value and Standard Deviation of Constructs

Constructs	N	Agg. Mean	Std. Dev
Lean procurement	94	3.588	0.9395
Lean production	94	3.612	0.9596
Lean Transport	94	3.643	0.9585
Lean customer	94	3.664	0.9491
Lean supplier	94	3.536	0.9659
Lean warehouse	94	3.715	0.9667
Organisational performance	94	3.501	0.9274
Valid N	94		

Source: SPSS output survey, 2020.

The results of the study are presented based on the analysis of six variables attributed to lean supply chain management practices' effect on the organisational performance of FAFFA S.C. Based on the Table 3, all variables (Lean procurement M = 3.588 SD = 0.9395, Lean production M = 3.612 SD=0.9596, Lean Transport M = 3.643 SD = 0.9585, Lean customer M = 3.6640. SD = 0.9491, Lean supplier M = 3.5360. SD = 0.9659, Lean warehouse M = 3.7150. SD = 0.9667) have a mean value greater than 3.5, which means respondents agree that lean supply chain practices are exercised to a great extent in their company. Mesfin (2016) stated that a mean value between 3.41 and 4.2 represented respondents' perceptions of somewhat agreeableness.

Table 4: Challenges Faced During the Implementation of Lean Supply Chain Management

Descriptive Statistics			
Challenges Faced During the Implementation of Lean Supply Chain Management	**N**	**Mean**	**Std. Deviation**
Lack of employee training and motivation	94	2.7447	1.06696
Limited resources	94	2.4574	.94658
Lack of top management commitment	94	2.5745	.99989
Negative attitude from employees	94	2.5745	1.04201
Lack of clear benefits from lean supply chain management	94	2.6383	.97110
Resistance to change	94	3.0532	1.11072
Cost and resource allocation	94	2.6170	1.06868
Misunderstanding of lean	94	3.5532	1.24103
Conflict with other initiatives of the company	94	2.5000	1.10473
Lack of broad organisational involvement	94	2.6383	1.00377
Lack of supply chain integration	94	2.8404	1.04009
Limited control in monitoring suppliers' delivery time	94	2.5957	.99805
Valid N (listwise)	94		

Source: SPSS output survey, 2020.

The Table 4 shows that misunderstanding of lean concepts (M = 3.5532, SD = 1.24103) and resistance to change (M = 3.0532, SD = 1.11072) had the highest mean. The remaining challenges were below the average score of 2.8. This means that when implementing Lean Supply Chain Management, a lack of understanding of Lean concepts and resistance to change are the biggest challenges of Lean Supply Chain Management.

Table 5: Correlation

Correlations								
		Proc	**Prod**	**Tarn**	**Cu**	**Sup**	**War**	**Op**
Proc	Spearman Correlation	1	.543**	.466**	.558**	.377**	.508**	**.572****
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	94	94	94	94	94	94	94
Prod	Spearman Correlation		1	.472**	.509**	.469**	.636**	**.556****
	Sig. (2-tailed)			.000	.000	.000	.000	.000
	N			94	94	94	94	94
Tran	Spearman Correlation			1	.497**	.466**	.552**	**.466****
	Sig. (2-tailed)				.000	.000	.000	.000
	N				94	94	94	94
Cu	Spearman Correlation				1	.427**	.636**	**.614****
	Sig. (2-tailed)					.000	.000	.000
	N					94	94	94
Sup	Spearman Correlation					1	.467**	**.511****
	Sig. (2-tailed)						.000	.000
	N						94	94
War	Spearman Correlation						1	**.673****
	Sig. (2-tailed)							.000
	N							94
Op	Spearman Correlation							1
	Sig. (2-tailed)							
	N							94

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS output survey, 2020.

To achieve the study's specific objectives, a correlation analysis was carried out, which consisted of identifying the effects of lean purchasing, lean manufacturing and lean transportation; Optimized customer, supplier and inventory management in terms of organisational results at FAFFA Food S.C. The strength of the correlation can be described using the guide to the absolute value of r proposed by Evans (1996), cited in (Beldjazia & Alatou, 2016). If "r = 0.00-0.19 - very low, r = 0.20-0.39 - low, r = 0.40-0.59 - moderate, r = 0.60-0.79 - strong and r = 0.80-1.0 – very strong." The result shows that Customer Lean (r = 0.614) and Warehouse Lean (r = 0.673) have a solid and positive relationship with FAFFA organisational performance and Lean Purchasing (r = 0.572), Lean Manufacturing (r = 0.556) and Lean Transportation (r = 0.466) and Lean Supplier (r = 0.511) have a positive and significant influence on FAFFA organisational performance.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.759[a]**	**.576**	**.546**	.35488
a. Predictors: (Constant), war, sup, proc, tran, prod, cu				
b. Dependent Variable: op.				

In the model summary Table 6, the R indicates a robust correlation of .759 between lean supply chain practices and Organisational performance. The R2 (also called the coefficient of determination), Value of .576 (57.6%), implies the relative contribution of lean supply chain practices in interpreting organisational performance. The remaining 42.4% of variation change could be attributed to other factors.

ANOVA Model Fit

Table 7: ANOVA Result between Lean Supply Chain Management and Organisational Performance

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.860	6	2.477	19.665	.000[b]
	Residual	10.957	87	.126		
	Total	25.817	93			
a. Dependent Variable: op.						
b. Predictors: (Constant), war, sup, proc, tran, prod, cu.						

Source: SPSS output survey, 2020.

The regression model's overall fit can be examined with the help of ANOVA. The F-ratio in the ANOVA table tests whether the overall regression model fits the data well.

Accordingly, the table shows that the value of R and R2 found from the model summary is statistically Significant at (F = 19.665), (P<0.001), and it can be said that there is a relationship between Lean supply chain management and Organisational performance.

Table 8: Regression Coefficients

Coefficients						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.562	.298		1.885	.063
	Proc	.195	.087	.206	2.238	.028
	Prod	.051	.085	.059	.596	.553
	Tran	-.018	.079	-.021	-.230	.819
	Cu	.169	.088	.189	1.918	.058
	Sup	.158	.076	.176	2.070	.041
	War	.279	.087	.341	3.199	.002
a. Dependent Variable: op.						

Source: SPSS output survey, 2020.

Standardised Coefficients

The standardised coefficients help identify which independent variable is more important. They are used to compare the impact of any independent variable on the dependent variable. As the regression coefficients table indicated, lean warehouse had the highest standardised coefficient (.341), followed by lean procurement (.206). This revealed that lean warehouse practices had a higher relative effect on organisational performance. Lean customer, lean supplier lean production and lean transportation are ranked from three to six, respectively, in their relative importance on organisational performance.

As indicated in the Table 8 from regression coefficient table, the predictor variables of lean warehouse, lean supplier, and lean procurement practices are statistically significant in predicting organisational performance because all their p-values are less than the alpha level of 0.05. However, the p-value for the lean customer(0.058), lean transportation (0.819) and lean production (0.553) is greater than the alpha level of 0.05, which indicates that they are not statistically significant, which shows that changes in both variables are not associated with changes in the dependent variable (organisational performance). This may be due to the inappropriate implementation of those lean practices, as a misunderstanding of lean and resistance to change were major challenges found in the deceptive analysis. Rono (2013) studied lean manufacturing practices in a continuous process industry at Bamburi Cement Limited. He pointed out that few scholars have examined the application of lean manufacturing tools and techniques to a continuous process industry. His study found that lean manufacturing is not well implemented. Daniel (2015) also studied lean philosophy for global competitiveness in chemical manufacturing industries. He reveals that lean practice in Ethiopia is inferior and that lean philosophy can bring for chemical industries competitiveness. However, the literature reviewed in the second chapter of the study that lean customer, lean transportation and lean production practices were essential factors of lean supply chain management practices in determining organisational performance.

Unstandardised Beta Coefficient (β)

The estimated regression model's coefficients are the unstandardised coefficients (x1 up to x6), as indicated in chapter three. Hence, by including the error term (ε), the model for organisational performance can be written as,

$$\beta 0 + \beta 1x1 + \beta 2x2 + \beta 3x3 + \beta 4x4 + \beta 5x5 + \beta 6x6 + \varepsilon,.$$

Where; Y= Organisational performance

= Lean Procurement, X2 = Lean Production, X3 = Lean Transportation, X4 = Lean Warehousing, X5 = Lean suppliers, X6 = Lean customers, ε= Error term

= Constant factor, β1 = Coefficient of lean procurement, β2 = Coefficient of lean production, β3 = Coefficient of lean Transportation, β4 = Coefficient of lean warehousing, β5 = Coefficient of lean suppliers, β6 = Coefficient of lean customer

= .562+ .195X1 + .051X 2 -.018X3 + .169X 4 + .158X5 + .279X6 + ε

The constant value (β0 = .562) implies that the organisational performance of FAFFA would be .562 if other variables of the model were zero. In addition, a beta coefficient of .195 indicates that a unit change in lean procurement leads to a change in the organisational performance of FAFFA Food S.C by .195. On the other hand, the Error term (ε) estimate was assumed to be zero.

Regression coefficient results show that three out of the six variables are statistically significant in predicting the organisational performance of FAFFA Food S.C. The statistically significant variables are lean customer, lean supplier, and lean procurement as evidenced by their P-values (P <0.05). This indicates that an increase in these variables increases in the organisational performance.

Summary of Findings

Effects of Lean Procurement on Organizational Performance

The first research objective of the study was to analyse the effects of lean procurement on organisational performance. From the descriptive analysis, it can be concluded that their mean score is more significant than 3.5, meaning that the respondents agree with the statements about lean procurement. Under correlation analysis, the study's result shows a significantly moderate correlation between lean procurement and organisational Performance, with a correlation coefficient of 0.572 (r = 0.572) and a significance value less than 0.01. The output from regression analysis shows that it is one of the strong predictors of the dependent variable organisational performance, with a beta coefficient of 0.195 at a significance level of .000.

Effects of Lean Production on Organizational Performance

The second objective is to explore the effects of lean production on organisational performance. From the descriptive analysis, it can be concluded that their mean score is more significant than 3.5, meaning that the respondents agree with the statements of lean production. Under correlation analysis, the study's result shows a positive and significantly moderate relationship between lean production and organisational performance, with a correlation coefficient of 0.556 (r =.556) and a significance value of less than 0.01. It is a statistically insignificant predictor of organisational performance with a beta coefficient of .051 at a significance level of .0.553. This is because its p-value of 0.553 is greater than the alpha level of 0.05, which shows that lean production is not addressed adequately in FAFFA Food S.C.

Effects of Lean Transportation on Organisational Performance

The third objective of the research is to examine the effects of lean transportation on organisational performance. Based on the descriptive analysis, the mean score of lean transportation is more significant than 3.5, which means that the respondents agree with the statements about lean transportation. Based on the correlation analysis, the study's result shows a positive and significantly moderate relationship between lean transportation and organisational performance, with a correlation coefficient of 0.446 (r =.446) and a significance value of less than 0.01. In addition, the regression analysis shows that lean transportation is a statistically insignificant predictor of organisational performance, with a beta coefficient of -0.018 at a significance level of 0.819. This is because its p-value of 0.553 is more significant than the alpha level of 0.05, which shows that lean transportation is not adequately addressed in FAFFA Food S.C.

Effects of Lean Warehousing on Organisational Performance

The fourth objective is to assess the effects of lean warehousing on organisational performance. According to the descriptive analysis, the mean score of lean warehouse is more excellent 3.5 which implies the respondents agreed that lean warehousing affects organisational performance. Considering the correlation, the study's result shows a positive and significantly strong correlation between lean warehousing and organisational performance, with a correlation coefficient of 0.673 (r = .673) and a significance value of less than 0.01. The regression analysis indicates that lean warehousing is a statistically significant predictor of organisational performance with a beta coefficient of 0.278 at a significance level of .0002.

Effects of Lean Supplier Practice's On Organisational Performance

The fifth objective is to examine the effects of lean supplier practice's effects on organisational performance. As indicated in the descriptive, the mean score for suppliers' involvement in the new product development is 2.75. This shows that supplier involvement in the new product development must be improved. For the remaining questions, the mean score is above 3.5, implying that the respondents agreed that lean supplier affects organisational performance. In addition, the correlation analysis shows that there is a positive and significantly moderate correlation between lean warehousing and organisational performance, with a correlation coefficient of 0.511 (r = .511) with a significance value less than 0.01 and the regression analysis indicates that lean supplier is a statistically significant predictor of organisational performance with a beta coefficient of 0.158 at a significance level of .041.

Effect of Lean Customers on Organisational Performance

The sixth objective is to explore the effect of lean customers on organisational performance. As indicated in the descriptive analysis, with scores a mean greater than 3.5, the respondents agreed that lean customers are exercised in their organisation. The correlation analysis shows a positive and significantly strong correlation between lean customer and organisational performance, with a coefficient of .614 (r =.614) and a significance value of less than 0.01. The regression analysis indicates that lean customers are a statistically insignificant predictor of organisational performance, with a beta coefficient of 0.169 at a significance level of .058. Its p-value of 0.058 is more significant than the alpha level of 0.05, it shows that lean transportation is not adequately addressed in FAFFA Food S.C.

Challenges That Affect Implementing Lean Supply Chain Management

The seventh objective of the study is to assess the challenges that affect the implementation lean supply chain management. Based on the descriptive analysis, Misunderstanding of lean (M = 3.5532, S.D = 1.24103) and Resistance to change (M = 3.0532, SD = 1.11072), their mean score above three are the significant challenges of lean supply chain management.

In addition the descriptive analysis indicates that quality (M = 4.O851, SD = .903535), Profitability (M = 3.62767, SD = .97998), growth on return on investment (M = 3.6063, SD = .90483), sales growth (M = 3.4681, SD = .88842), and competitive position (M = 3.5404, SD = .8908) contributes to the performance of the organisation a great extent and in terms of return on investment (M = 3.356, SD = .901515) and market share (M = 3.31385, SD = .843965) the performance of the organisation is moderate.

As indicated in the regression analysis output, only three lean supply chain management practices (lean procurement, lean supplier, and lean warehousing) are relevant to organisational performance. The p-value for the lean customer (0.058), lean transportation (0.819) and lean production (0.553) practices are insignificant. Although the literature has outlined them as critical lean supply chain management practices, this shows that they are not adequately addressed in FAFFA Food S.C. Additionally, adjusted R^2 = .546, which revealed that the model accounts for 54.6% of the variation in organisational performance is explained by the linear combination of all the independent variables of lean supply chain management practice. The ANOVA test result showed that R and R2 from the model summary were statistically significant at (F = 19.665), P<0.001).

Conclusions

Based on the findings presented in previous sections, the study drew the following conclusions.

From the descriptive statistical analysis regarding the state of lean supply chain management practice in FAFFA, the study concluded that;

All the lean supply chain management practices (lean production, procurement, transportation, warehouse, customer and supplier management practices) were practised occasionally.

In addition, the study concluded that lean supply chain management practices contributed to FAFFA Food S.C.'s performance to a great extent.

Regarding the relationship between lean supply chain management practices and organisational performance, the study concluded that:

There is a positive and significant relationship between lean supply chain management practices and the organisational performance of FAFFA Food S.C.

Furthermore, lean supply chain management practices, namely lean production, lean procurement, lean transportation, and lean supplier management practices, have a moderate relationship with the organizational performance of FAFFA Food S.C., and lean warehouse and lean customer practices have a strong relationship with the organizational performance of FAFFA Food S.C.

Regarding the predicting power of independent variables, the study concluded that:

The independent variables of lean procurement, lean supplier, and lean warehousing practices had predicting power on the organisational performance of FAFFA Food S.C. Lean transportation, lean production, and lean customer practices did not affect the organisational performance of FAFFA Food S.C. Although the literature has outlined them as essential lean supply chain management practices, it shows that they are not adequately addressed in FAFFA Food S.C.

Regarding the lean supply chain management challenges faced by FAFFA Food S.C. Misunderstanding of lean and Resistance to change affect FAFFA Food S.C. to a great extent.

Recommendations

Based on the above findings, the study recommends the following:

The study findings showed that FAFFA Food S.C. occasionally adopted lean supply chain management practices. Moreover, the study confirmed that lean supply chain management practices had a strong positive relationship with the organisational performance of FAFFA Food S.C. Therefore, the study recommends that FAFFA Food S.C. give priority to and enhance the lean supply chain management practices because if FAFFA Food S.C. practises at its maximum effort, it could significantly improve its organisational performance from the current position.

In addition, the study confirmed that lean supply chain management practices, namely lean procurement, lean supplier and lean warehousing practices, significantly influence the organisational performance of FAFFA Food S.C. The study therefore recommends FAFFA Food S.C.

The company might have to include strategic sourcing in its procurement planning process, eliminated the lead times for critical materials, create real-time visibility into inventory in motion, integrate suppliers in the entire supply chain to improve customer service.

To work closely in collaboration with suppliers, give feedback on quality and delivery to suppliers, involve suppliers in the development of new products, improve the supplier base to avoid risks and evaluate the performance of the suppliers.

Working on Minimizing the order lead time, carrying costs, decreasing the rate of return and efficiently utilising its space and machines.

Further, the study established that the critical lean supply chain management challenges faced by FAFFA Food S.C. are a misunderstanding of lean supply chain management and resistance to change, which shows the inappropriate implementation of lean supply chain management practices. Consequently, lean production, lean customer, and transportation became insignificant even if the literature and previous studies prove them to be crucial lean supply chain management practices, which show that they are not adequately addressed in FAFFA Food S.C.

The study recommends that recommends FAFFA Food S.C. to Forming a lean supply chain management team, training employees about the concept and practice of lean supply chain management and collecting feedback.

Assessing change risks, accepting the change, developing a culture of trust, transparent communication, and positive interpersonal relationships.

Management should involve the employees and acquire more skills and knowledge about lean practices. They should review the implementation of lean practices and measure the outcomes.

Suggestion for Future Studies

Despite the research being able to address research questions, a few areas are yet to be addressed. Lean supply chain management encompasses vast managerial practices, including demand management, standardisation, waste management, cross-enterprise collaboration and organisational behaviour. This study encompasses only Lean supply chain management practices, a composition of the following six activities: Lean Procurement, Lean Production, Lean Transportation, Lean Customers Practice, Lean Suppliers Practice and Lean Warehousing and challenges faced during the implementation of Lean Supply Chain Management. So, further study is needed on the above elements. Even if those lean practices are studied on FAFFA Food S.C., the study suggests further studies be undertaken on other firms for comparison. Additionally, the study found that there are challenges facing lean supply chain management and further studies should be undertaken on how to address those challenges.

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