Scientific Research Publishing

Open Journal of Business and Management, 2022, 10, 1647-1675
https://www.scirp.org/journal/ojbm
ISSN Online: 2329-3292
ISSN Print: 2329-3284

Supply Chain Management: Empirical Case Study of a Small-Scale Manufacturing Company in Nigeria

Samuel Dayo Odusina

ABMS University, Zurich, Switzerland
Email: dayo_odusina@hotmail.com

How to cite this paper: Odusina, S. D. (2022). Supply Chain Management: Empirical Case Study of a Small-Scale Manufacturing Company in Nigeria. *Open Journal of Business and Management, 10,* 1647-1675.
https://doi.org/10.4236/ojbm.2022.104085

Received: January 30, 2022
Accepted: June 6, 2022
Published: June 9, 2022

Abstract

The supply chain of a manufacturing company can be classified into three categories namely: 1) supplier chain; these are a network of suppliers of raw materials, machinery, and other requirements for daily operations for the company; 2) internal chain; these are departmental or functional relationships within the organization like production, finance, marketing, logistic and quality control departments all interacting together to achieve the goals and objective of the company; and 3) customer chain; these are networks used for products distribution to the final consumer which includes the product distributors and retailers in the marketplace as may be applicable. In a developing country like Nigeria where government infrastructures are poor or in some cases none in existence, the survival of a small-scale manufacturing company often depends on how effectively its supply chain is managed. In Nigeria, suppliers of machinery and raw materials to most manufacturing companies are from low-cost but high-tech countries like China or India. The problem with the supply chain from these countries apart from the language barrier between these countries and Nigeria is also that of product quality and after-sales support services. The internal chain also requires funding to employ an experienced and trained workforce to deliver the company's goals and objectives effectively and efficiently which is always a challenge for small scale manufacturers including product marketing. In Nigeria, the management of the supply chain by small scale manufacturers is further complicated by unfavourable government policies. This empirical research is a review and analysis of the supply chain management of a small-scale manufacturing company located in Lagos Nigeria. The company performance for the past five years has been on the decline and company management thinks there is a need for a review of its supply chain management for business survival. The company's supply chain is analysed and compared with best global practices

in this research and recommendations made to the company management. The research outcome justifies the company's need for a strategic change in its supply chain management for business sustainability and provides a learning point to small-scale manufacturing companies from developing countries of Africa.

Keywords

Supply Chain Management, Internal Chain, Customer Chain, Supply Chain Development Drivers

1. Introduction

In today's business, supply chain management has become an important success factor in achieving a competitive advantage in the marketplace (Prasad et al., 2020). Qrunfleh and Tarafdar (2014) suggest that to achieve a competitive advantage position and better performance as a company, there must be synergy between supply chain management strategy and the business strategy of the company. Supply chain management can also be seen as the maximization of the overall value of an enterprise by adding values of each activity connecting the enterprise's suppliers and its customers. (Jack Van der Vorst, 2004)

The purpose of this study is to review Deets company's supply chain management by identifying its supply chain management practices pitfalls and recommend a strategic change for business sustainability.

Deets Company is a polypropylene (PP) woven sack producing factory located in Lagos Nigeria. The major use of PP woven sacks is for the packaging of fertilizer, sugar, agricultural products like rice, beans, maize, animal feeds. Deets company business sustainability has been under threat over the past five years. It is only when the business objective of a company is achieved, and profit is made that each supply chain member makes a profit. By carrying out analysis of Deets supply chains namely: the suppliers' chain, the internal chains within the company and the customer's network threat to business sustainability will be identified and when action is taken to correct the treats, it will result in performance increase and profit margin improvement to the company.

Organizations are frequently confronted with rapidly changing environments, and it is the leaderships' responsibility to find a creative technique or implement a strategic choice that can confront ambiguous and difficult business challenges. A logical technique designed to reduce uncertainty is to first collect information about the organization's environment both internally and externally analyse the data and identify the difficulties to fulfilment of its business strategy (David A. Garvin, 1998).

Careful evaluation of Deets supply chain network will result in strategic options and eventually a strategic choice to its supply chain management practices

that are required for business sustainability. The research paper started with an introduction section followed by a background information section, the research methodology used and the analysis of research outcome and recommendations.

2. Background

Deets business strategy is to produce customised PP woven sacks of different sizes and colours according to customers request and general-purpose pp shopping bags to 20 per cent of Nigeria market share. Deets supply chain network is made up of suppliers and customers as the external supply chain and functional departments within the organization as the internal supply chain. Research has shown there exist a relationship between the supply chain management practices of an organization and its supply chain responsiveness and competitive advantage. When the supply chain is managed effectively, all the participants in the supply chain become more active, information flows through the chains and order fulfilment is achieved (Inda Sukati, 2011).

What then is supply chain management? It is about maximizing the overall value of an organization by adding the values from individual activities of each player connected with the fulfilment of the organizational objectives. As shown in Figure 1 supply chain network, a company for example producing a product will have functional departments where different activities are taking place

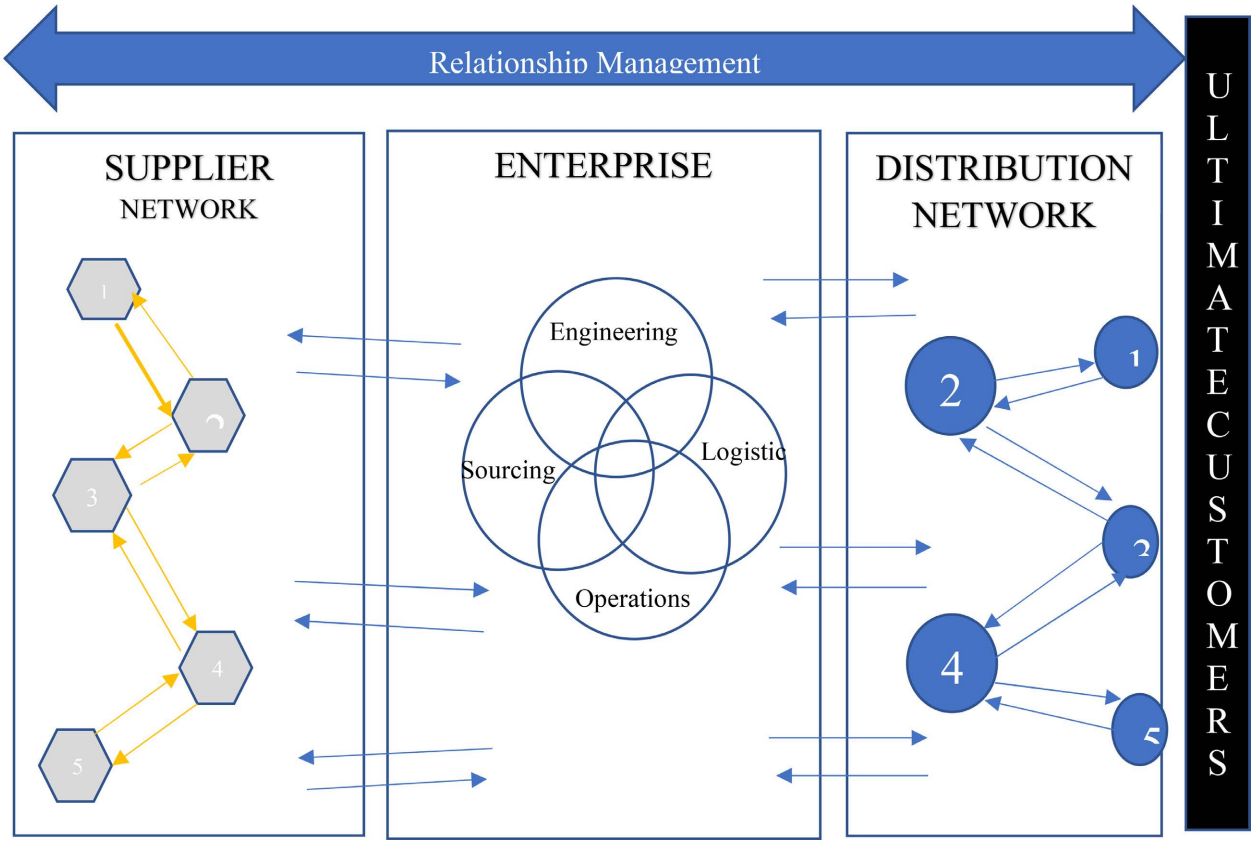


Figure 1. Supply chain network.

simultaneously within its organization. The functional departments at the same time interact with suppliers' organizations outside its organization. It is this network of activities that contribute to the manufacturing process of the product and each activity in the supply chain have an impact on the fulfilment of the company's objective.

In a supply chain network, the desired company objective can be achieved by making sure that adequate and accurate activities required as input from one player to the other are provided promptly. Unfortunately, small-scale manufacturers from a developing country like Nigeria pay little attention to supply chain relationships. The reason for this is because of lack of choices and unfriendly manufacturing environment due to government policies (Simbo A. Banjoko, 2012). In developing countries of Africa, unfriendly environmental factors make individuals opt for trading business as against manufacturing. According to Shamil and Shaikh (2012), individuals and their environmental factors do have a relationship with the level of involvement in business practice. As a result of this, values creation potentials in supply chain management are lost. This is one of the reasons for the lack of competitiveness of many small-scale manufacturers in developing countries of Africa.

According to Kosmas Njanike (2019) from Zimbabwe, the following forces affects the supply chain of small-medium enterprises (SME) in Zimbabwe, these forces are also like SMEs in Nigeria and can be said to be common to develop countries in Africa.

1) The supplier and partners relationship is very week.

2) The supply chain is not made visible, recognised by given the attention it requires.

3) There is little or not much effort made to keep pace with technology.

4) Targeting global markets is difficult to implement.

5) Access to cash is a challenge.

6) Human resource challenges.

7) The increasingly high customer-service expectation is a challenge.

8) Keeping control of costs, especially cost related to transportation as most SMEs may not be able to own vehicles to meet the logistic required for product distribution.

According to Georgise et al. (2014), Balda (2020) supply chain integration can be viewed in two directions: upstream to suppliers and downstream to customers. To manage the supply chains to the benefit of a company, the integration of both upstream and downstream supply chain levels is required. This is the integration of internal company activities to the external activities of the suppliers or the customers. The integration capability of company leadership to link external and internal determinants is a key success factor for the business (Shaikh Junaid, 2012).

In this research work, the focus is on how Deets company has managed the integration of the following three supply chain levels, benchmark with standard

global practices and recommendation of strategic options for business sustainability.

1) Supplier's chain (Supplier Relationship Management);

2) Internal chains (Manufacturing Flow Management);

3) Customer's chain (Customer Relationship Management).

The supply chain management levels cut across an organization's departmental silos. Effective management of these supply chain levels sometimes requires a transition from a functional organization to one focused on business processes, first internally within a company and to all other companies in the supply chain.

2.1. Defining the Research Problem

Deets company is a small-scale polypropylene (PP) woven sack producing factory located in Lagos Nigeria. The woven sacks industry is the single largest PP granules consuming sector in Nigeria. Other raw materials used in the production of PP woven sacks are calcium carbonate, masterbatch, yarn and ink. PP sacks are immune to the effect of corrosion, decay, moisture, atmosphere, rats, rodents, moths, and insects, which is what makes it preferable to other sacks that could be used for the preservation of agricultural products (Foraminifera, 2014).

The major use of PP woven sacks is for the packaging of fertilizer, sugar, agricultural products like rice, beans, maize, animal feeds. Other users are cement manufacturers, starches, pesticides, detergents, and many other industrial bulk items are also packed using PP woven sacks. Being superior in quality and economical compared to the traditional jute material, these modern sacks have gradually captured a large market for packaging in Nigeria and other African countries.

Eleme Petrochemicals Company (EPCL) located in the eastern part of Nigeria is the sole producer of polypropylene (PP), the raw material used for making (PP) sacks in Nigeria. The effect of the global economic meltdown of 2009 saw a sharp and massive fall in the price of commodities, especially crude oil which is the near single foreign exchange earner for Nigeria which eventually resulted in the depreciation of the Nigerian currency (naira) against the United State dollar and other major currencies of the world. As a result, coupled with the unfriendly production terrain in Nigeria, many production companies operating in Nigeria moved out of Nigeria to neighbouring countries because production cost was unsustainable (Proshore, 2020).

However, post-global meltdown, the opportunity to restart production activities in Nigeria in partnership with overseas companies emerges; starting with the option of importing intermediate products from overseas companies and setting up a finishing line for the product in Nigeria became very attractive. Deets company is one of the small-scale companies that make use of this opportunity. Although the company was incorporated in 2002 as a producer of polyethene (PE) films and bags, the post-global meltdown in 2012, the company changed from producing PE films and bags to producing PP woven sacks sourcing PP fabric

from China and India.

Over the last 5 years, however, competition in the PP woven bags industry in Nigeria has increased significantly mainly because of the re-entrant of big players like Dangote sacks company, Bagco bags company, and many other foreigners that have come to establish PP woven sack making factories in Nigeria. These large-scale companies can produce PP woven fabric from start to finish of the manufacturing process in comparison to small-scale companies. Emergent of big players in the country has put small-scale companies' dependent on the importation of intermediate products from suppliers overseas less competitive.

Accessing foreign exchange by small-scale manufacturers has become increasingly challenging due to unfavourable government policies; no easy access to foreign exchange by small-scale companies and availability of electricity for production is also a problem. The situation in Nigeria is such that only a company with a foreign payment inflow to its account from overseas can make equivalent transfers offshore at this moment. This policy is put in place by Nigeria's government to prevent money laundering, but this makes it very difficult for a small-scale manufacturing company selling their products in local currency to have access to foreign currency to pay overseas suppliers. The only available option for them is the "black market" which is a parallel market to access foreign currency in the country, which attracts a much higher exchange rate. Backward integration in the PP sack industry requires high capital, high power supply and required specialist support which is a challenge for small-scale companies in Nigeria; as a result, many have folded up in the recent past and Deets company business sustainability is under threat.

Figure 2 shows Deets company's financial position for 2014 and 2018. The financial performance graph shows that over the years even though the turnover is increasing, the profit margin is not increasing significantly, and the net asset is

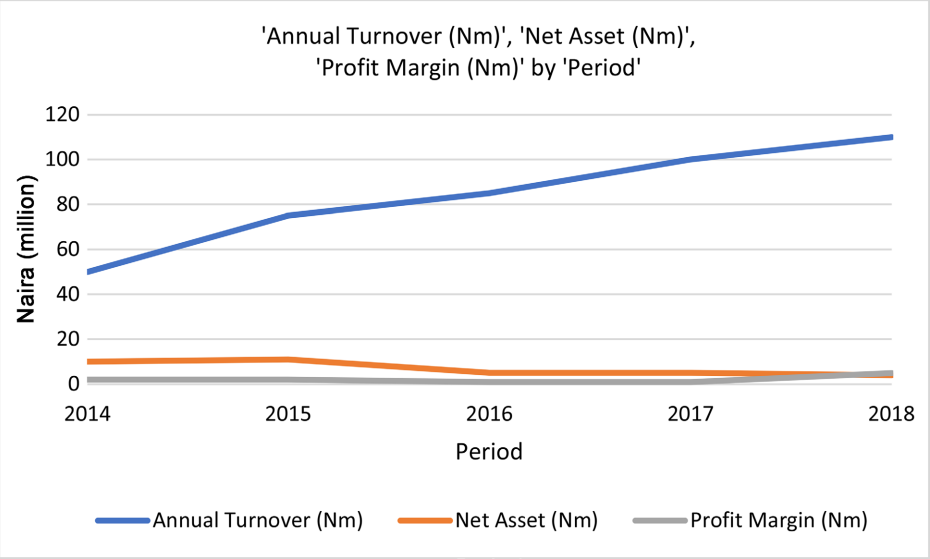


Figure 2. Deets performance (2016-2018).

on the decline. For business sustainability, there is a need to analyse Deets company business model, the internal and external environment and formulate a strategic choice that can result in performance improvement for the company. The scope of this research work is limited to reviewing Deets company's supply chain management, identifying supply chain management practices pitfalls and recommending supply chain management changes that will contribute to performance improvement for the company.

Ho (2002) states that, management of supply chains in a manufacturing sector is a source of attaining performance improvement and developing competitive advantage for the company and all members of the chain (Ho, 2002). When the business objective of a company is achieved and profit is made; this will eventually be to the benefit of all the supply chain members, as the business becomes sustainable, each supply chain member also makes a profit on the business. Research has shown that supply chain orientation has the potential to shift mindsets from internal-focused operations to a more diverse and collaborative scheme that can result in a higher profit margin (Mentzer, 2001). Carrying out a review and analysis of Deets supply chains: the suppliers' chain, the internal chains within the company operations and the customer's network should result in performance and profit margin improvement within the company.

2.2. Hypothesis

Organizations are frequently confronted with rapidly changing environments, and it is the leaderships' responsibility to find a creative technique or implement strategic choices that can confront ambiguous and difficult business challenges. A logical technique designed to reduce uncertainty is to first collect information about the organization's environment both internally and externally and then analyse the data and identify the difficulties to fulfilment of business goal and objective. For Deets company, electrical power supply requirement and initial high capital investment make backward integration a challenge in comparison to the big players in PP sack manufacturing companies.

A strategic option for Deets is to maximise the use of upstream supply chains in the PP industry chain to deliver intermediate products both in quality and quantity. The company imports PP fabric in rolls from India and China as raw material for making PP sacks; cutting of the fabric and sowing into various sizes of bags are done locally in Nigeria. There are however many challenges that require answers.

1) How can the supply chain be managed to ensure that the required PP fabric is supplied in the right quantity, quality and when required?

2) How to respond to the ever-changing Nigerian government policies, like import duties and foreign exchange rate fluctuations in high magnitude?

3) How about customer management and pricing of the final product?

4) Areas of improvement such as supplier's inefficiency, production operations and marketing?

A careful analysis of Deets supply chain network will provide answers to its effectiveness and efficiency.

2.3. Supply Chain Development Drivers

The Supply chain capabilities of a manufacturing company can be developed to be more responsive or to be more efficient based on the decision made by the company management in respect to the following five supply chain drivers namely production, inventory, location, transportation, and information (Normalini, 2018). Each of the drivers depending on changes made can make the supply chain capability increase in such a way that the company becomes not only efficient but more profitable to the shareholders. Decisions made about the operation of each of the drivers will determine the blend between responsiveness and efficiency a supply chain can achieve as shown in **Table 1**—Supply chain responsiveness versus efficiency. The drivers are also illustrated in **Figure 3**—Supply chain development drivers in the manufacturing sector. The drivers are interconnected not in a particular order "information" which is driver number five is the deciding factor among the other drivers.

The supply chain development drivers in a manufacturing sector are as follows:

1) Production—Production can be defined as a method of turning raw materials into a finished product in a manufacturing process. Knowing what to produce, how it will be produced and when it will be produced will determine the type of supply chain to employ. The basis of deciding however is "information". Production is made to meet customers need. Deets company is a producer of PP sacks for general use and agro-product packaging. These products are of various

Table 1. Supply chain responsiveness versus efficiency.

Supply Chain Drivers	Responsiveness	Efficiency
1. Production	- Excess capacity - Flexible manufacturing - Many smaller plants	- Little excess capacity - Narrow focus - Few central plants
2. Inventory	- High inventory levels - Wide range of items	- Low inventory levels - Fewer items
3. Location	- Many locations close to customers	- Few central locations serve wide areas
4. Transportation	- Frequent shipments - Fast & Flexible modes	- Few large shipments - Slower and cheaper modes
5. Information	- Collect & share timely and accurate data	- Cost of information drops while other costs rise

(https://www.scmglobe.com/).

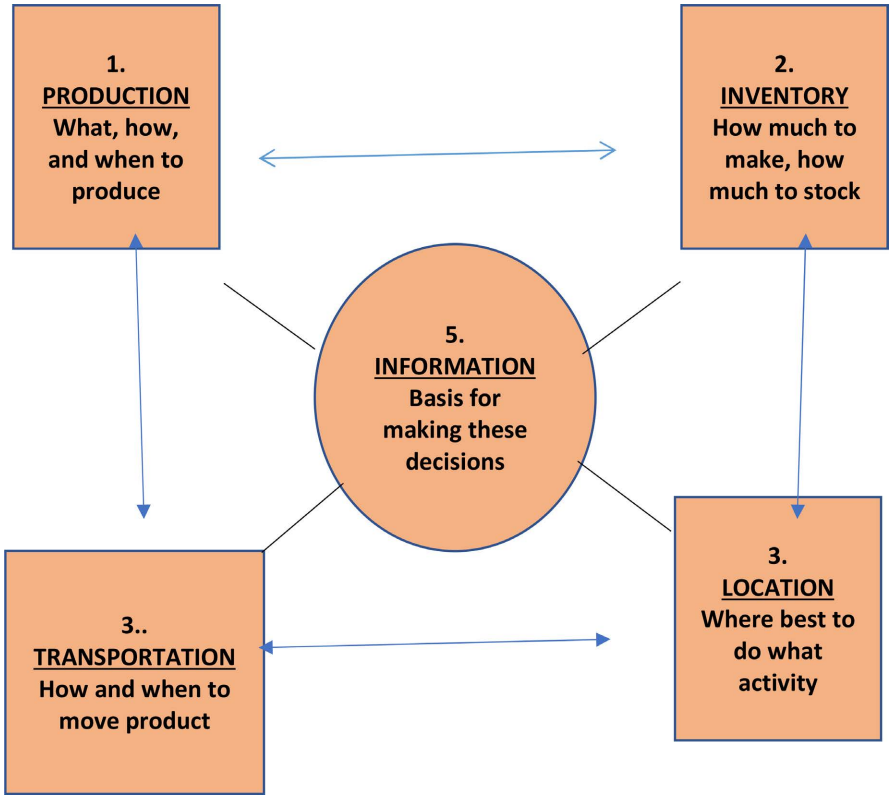


Figure 3. Supply chain development drivers in a manufacturing sector.

types and the requirement is seasonal hence the need to know what to produce and make production meet customers' requirements per time, in quantity and quality. Market research provides the required information for making the decision and to develop the applicable supplier chains. The scope of decision making will include the raw materials supply planning from suppliers, type of machinery to use, manpower planning/training and customers services/relationship management.

2) Inventory—Inventory is the array of finished products, raw materials used for the production of products in a manufacturing company. Inventory is a company's current asset as it serves as a buffer between manufacturing and order fulfilment. It is important to know how much product to make and how much-finished product or raw materials to stock. While it is a concern that capital could be tied down if inventory is high, there is a need to strike a balance to ensure that inventory is high enough for order fulfilment. The development of external and internal supply chains to maintain an effective inventory in a manufacturing company is a key success factor.

3) Location—In a manufacturing company decision of location is very important in supply chain development. The decision is to be made on the best place to get a supply of raw materials, storage of finished products, target markets, and even accommodation of shift workers for example. There is a choice of location that can be canter productive, considerations and proper evaluation are required

before deciding on the choice of location of activities in the supply chain network.

4) Transportation—Transportation is what tied all the manufacturing supply chains together. Consideration must be given to the movement of raw materials from overseas to the factory or finished products to distribution centres. If this is done effectively production costs can be reduced considerably. Sea freight for example varies depending on seasons and the price differential can be substantially high. The movement of raw materials at low-rate season will save money. Also having distributors in the major market centre will reduce transportation costs moving products from factory to each customer separately. Customers also see the transportation of products as customers services which is a necessity for retaining customers.

5) Information—Information plays a major role in coordinating activities within the manufacturing industry and external supply chains. Hence information systems can connect the manufacturing industry, their customers, suppliers, and service providers. To operate better in a rapidly changing and competitive market, information systems should be integrated at all levels from product design to production. Engineers should design products according to a standard in which the industry can sell and manufacture the product at a competitive price. The marketing department should be able to sell the products manufactured. The production staff must produce reliable products using adequate equipment and machinery having the required skills. Material staff should make sure that enough materials are on hand to ensure smooth production. Information systems are what coordinate these groups of activities to increase competitive advantages and workflow. In the next chapter, we review past work that has been carried out on supply chain management in a manufacturing environment to apply existing theories or models to identify supply chain management practices pitfalls and recommend supply chain management changes that will contribute to performance improvement for Deets company.

3. Research Methodology

This is empirical research that is based on observation, measurement, and analysis of Deets company's activities and performance over the past 5 years against supply chain theories and standard practices. For a small-scale company like Deets, if the supply chain is properly harnessed, it can be a source of value addition that can result in a competitive advantage. The quantitative research approach employed includes the use of three different sets of questionnaires targeted at obtaining data on the status of each supply chain management level namely the suppliers' chain, internal supply chain and the customer's supply chain of Deets company operations. The origin of the questionnaire is supply chain self-diagnostic questionnaire by FM global supply chain solution modified to fit the Deets supply chain requirement (FM Global Chain, 2018).

3.1. Supplier Chain (Supplier Relationship Management)

To obtain data for the analysis of the supplier chain, questionnaires are targeted at a total number of 80 companies: some from Deets supplier database in the last 5 years in addition to possible suppliers' companies in Deets line of business from Nigeria and outside Nigeria. 75 companies responded, their responses are used to evaluate suppliers' behaviour, supplier relationship, Deets supplier chain practises and corresponding business performance using SPSS.

3.2. Internal Chains (Manufacturing Flow Management)

To obtain data for the analysis of the internal chain, the questionnaires are targeted at Deets company personnel. All 33 employees spread across all the functional departments and management levels of Deets company participated in the survey.

3.3. Customers Chain (Customer Relationship Management)

To obtain data for the analysis of customer chain, the questionnaires are targeted at 87 customers selected from Deets customers database and potential customers to Deets product within existing market space. 80 customers responded to the questionnaires.

The questionnaires on these surveys are engineered to collect data on the status and effectiveness of the three supply chain management levels in the company.

For this research work, a total of 200 questionnaires was sent out and 188 of the targeted population responded. The effective response rate is 94%. The analysis carried out in this research is based on the responses to questionnaires targeted at the three supply management levels of Deets company. Do the survey responses show the strength, weaknesses, threats and opportunities of the company which helps to answer the question "is Deets business sustainable"? If YES, can the business be sustainable using the existing supply chain strategy? and what needs to change?

4. Result Analysis

The questionnaire is in three categories each for the different supply chain levels. Analysis of responses from each category is carried out separately and conclusion and recommendation based on the outcome of the three supply chain management levels namely:

1) Supplier's chain: The focus is on analysis of Deets suppliers' relationship management from the suppliers' viewpoint.

2) Internal chain: The focus is on the analysis levels of interaction of functional departments within Deets organization and the effectiveness and efficiency of the manufacturing flow process.

3) Customer chain: The focus is on the analysis of Deets customers relationship management from the perspective of the customers and the other market

forces.

The following are the analysis of the questionnaire's response to the three supply chain management levels respectively:

4.1. Supplier Relationship Management (Supplier's Viewpoint)

The survey questions in this category and analysis of the responses using SPSS are shown in Table 2—Supplier Relationship Management. Most of the suppliers have been in one relationship or the other with Deets for a period of 4 to 5 years. About 64% of this population are "somewhat unclear" about Deets operations processes and inventory schedules. About 45.9% of the population rate Deets level of transparency to suppliers as only "fair". 54.1% also rate the confidence level of doing business in Nigeria as "not so good" and 46% of the suppliers' rates Deets payment terms as "not good". On the positive, 3.3% of the supplier population clearly understood Deets operation and inventory schedule, this set of suppliers are confident with Deets level of transparency and information flow, happy with Deets payment terms and doing business in Nigeria. The confidence interval of Questions 3, 4 5 and 6 at 95% shows an upper band of 2.42, 1.38, 1.29 and 1.38 respectively which shows that the 3.3% of suppliers that have a good relationship with Deets are outliers in the data distribution. This result shows that Deets need to do more to extend the confidence interval by focusing on supplier's relationship management.

Responses to question 6 show that most of the populations (57.4%) prefer to relate at supplier level only with Deets, corporation level 13.1%, coordination level 11.5%, collaboration level 14.8% and Partnership level 3.3%. For this set of data, the confidence interval lower limit is 0.61 and the upper limit is 1.26. This shows that supplier that will go into collaboration or partnership with Deets is outside the confidence interval range. Deets management needs to do more work on suppliers around joint product development and commercialization.

4.2. Internal Chain (Manufacturing Flow Management)

Manufacturing flow management is the supply chain management process that includes all activities initiated within a manufacturing company that is required to produce a product. It includes the flexibility to make a variety of products using the company product line promptly and at the lowest possible cost (Goldsby, 2003).

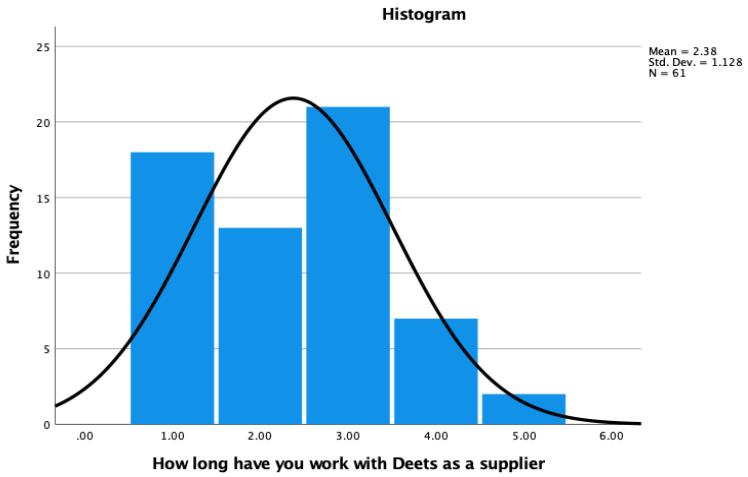
The survey questions in this category and analysis of responses using SPSS are shown in Table 3—Manufacturing Flow Management, Survey responses shows that tools and machinery required for production are not adequate in Deets production company. 47% and 50% of the survey responses agree that the salary paid to Deets employees is "not at all adequate" and "not adequate" respectively hence it is not all the employees that are motivated to deliver the company's objective effectively and efficiently. Flexibility and timely change from one product to another or producing two products simultaneously to meet customer's

Table 2. Supplier relationship management (SPSS printout).

Question 1

How long have you work with Deets as a supplier

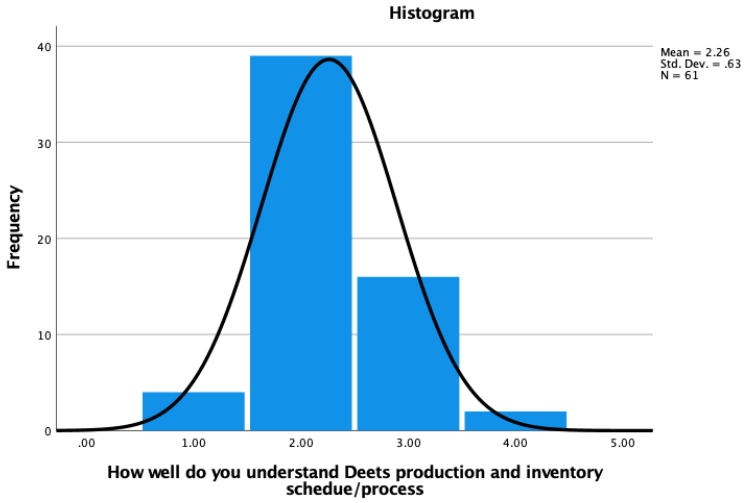
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than a year	18	29.5	29.5	29.5
	2 - 4 years	13	21.3	21.3	50.8
	4 - 5 years	21	34.4	34.4	85.2
	5 - 8 years	7	11.5	11.5	96.7
	greater than 8 years	2	3.3	3.3	100.0
	Total	61	100.0	100.0	



Question 2

How well do you understand Deets production and inventory schedule/process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not so clearly	4	6.6	6.6	6.6
	Somewhat clearly	39	63.9	63.9	70.5
	Very clearly	16	26.2	26.2	96.7
	Extremely clearly	2	3.3	3.3	100.0
	Total	61	100.0	100.0	

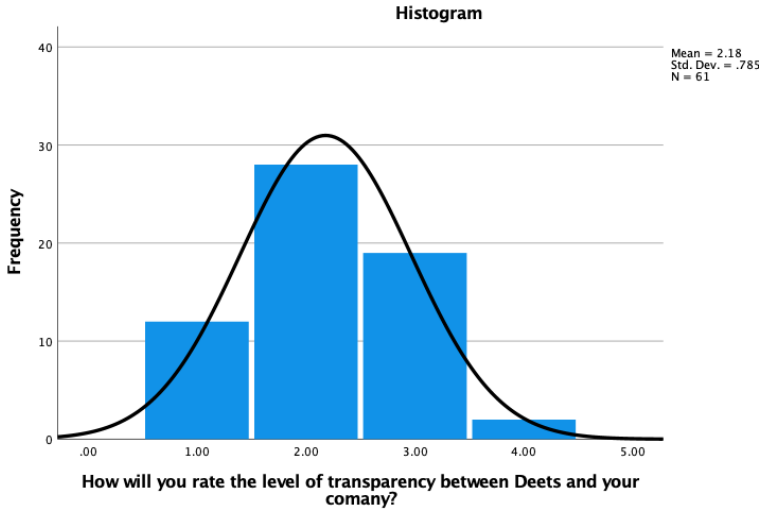


Continued

Question 3

How will you rate the level of transparency between Deets and your company?

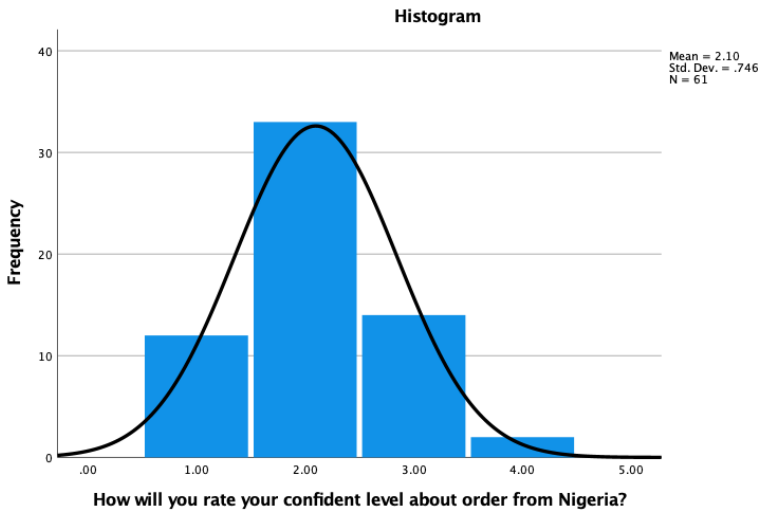
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No idea	12	19.7	19.7	19.7
	Fair	28	45.9	45.9	65.6
	good	19	31.1	31.1	96.7
	very good	2	3.3	3.3	100.0
	Total	61	100.0	100.0	



Question 4

How will you rate your confident level about order from Nigeria?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No idea	12	19.7	19.7	19.7
	Not so good	33	54.1	54.1	73.8
	Somewhat good	14	23.0	23.0	96.7
	very good	2	3.3	3.3	100.0
	Total	61	100.0	100.0	

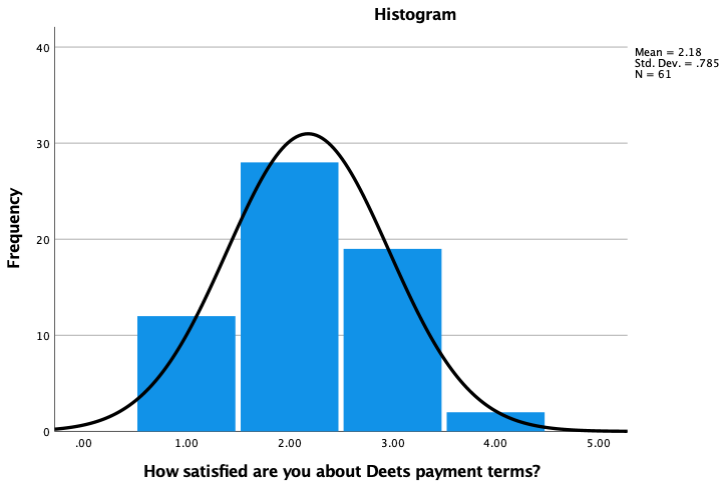


Continued

Question 5

How satisfied are you about Deets payment terms?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No idea	12	19.7	19.7	19.7
	Not so good	28	45.9	45.9	65.6
	Somewhat good	19	31.1	31.1	96.7
	very good	2	3.3	3.3	100.0
	Total	61	100.0	100.0	



Question 6

To what level are you prepared to do business with Deets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Supplier level	35	57.4	57.4	57.4
	Corporation level	8	13.1	13.1	70.5
	Coordination level	7	11.5	11.5	82.0
	Collaboration level	9	14.8	14.8	96.7
	Partnership level	2	3.3	3.3	100.0
	Total	61	100.0	100.0	

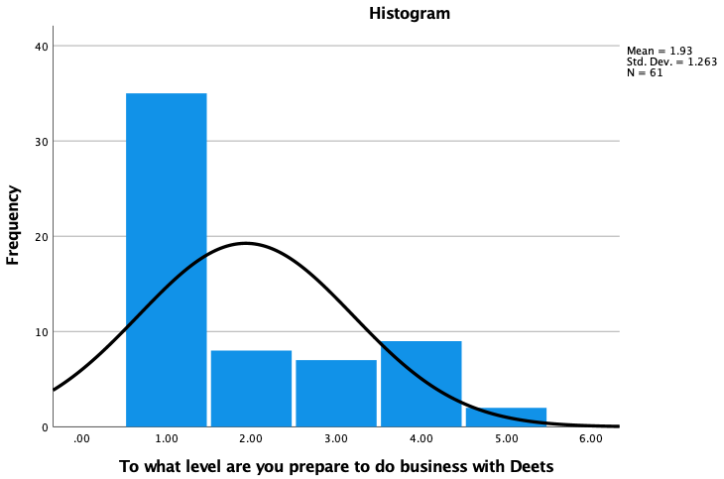
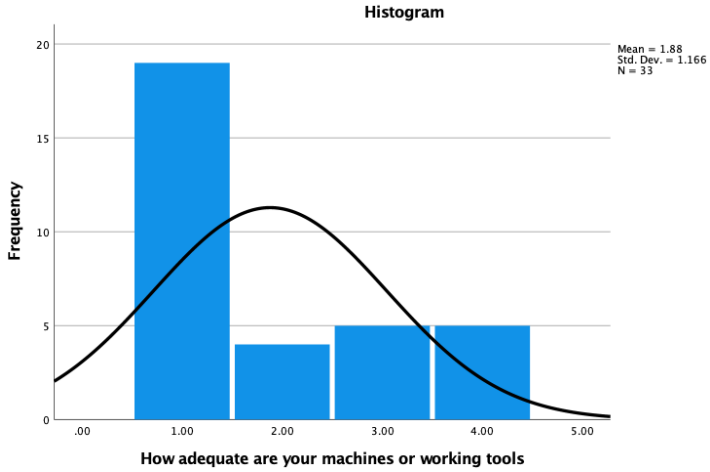


Table 3. Manufacturing flow management (SPSS printout).

Question 1

How adequate are your machines or working tools

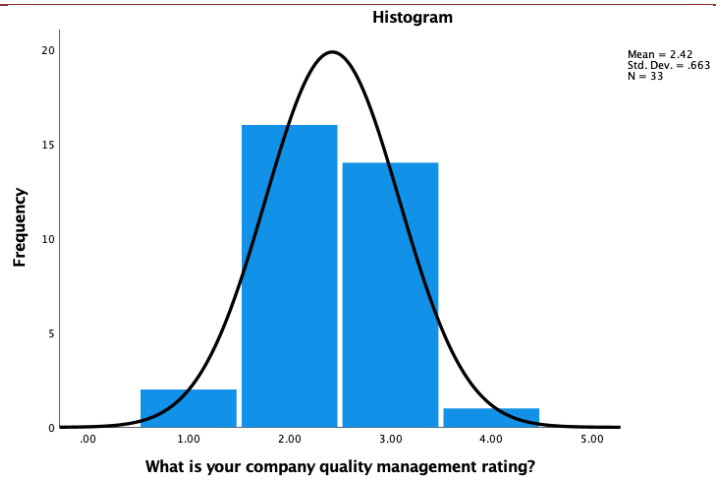
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all adequate	19	31.1	57.6	57.6
	Not so adequate	4	6.6	12.1	69.7
	Somewhat adequate	5	8.2	15.2	84.8
	Very adequate	5	8.2	15.2	100.0
	Total	33	54.1	100.0	
Missing	System	28	45.9		
	Total	61	100.0		



Question 2

What is your company quality management rating?

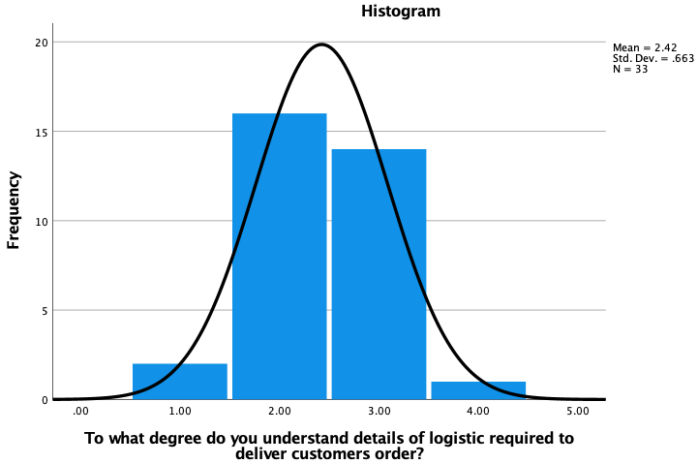
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No idea	2	3.3	6.1	6.1
	Not so good	16	26.2	48.5	54.5
	Somewhat good	14	23.0	42.4	97.0
	Very good	1	1.6	3.0	100.0
	Total	33	54.1	100.0	
Missing	System	28	45.9		
	Total	61	100.0		



Continued

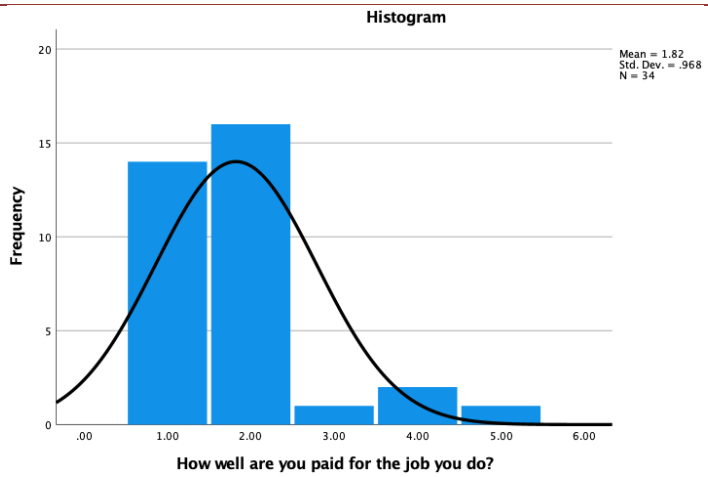
Question 3 — **To what degree do you understand details of logistic required to deliver customers order?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all clearly	2	3.3	6.1	6.1
	Not so clearly	16	26.2	48.5	54.5
	Somewhat clearly	14	23.0	42.4	97.0
	Very clearly	1	1.6	3.0	100.0
	Total	33	54.1	100.0	
Missing	System	28	45.9		
Total		61	100.0		



Question 4 — **How well are you paid for the job you do?**

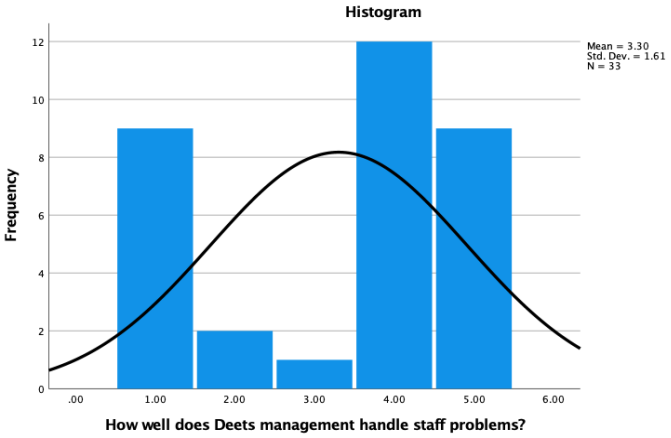
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all adequate	14	23.0	41.2	41.2
	Not so adequate	16	26.2	47.1	88.2
	Somewhat adequate	1	1.6	2.9	91.2
	Very adequate	2	3.3	5.9	97.1
	5.00	1	1.6	2.9	100.0
	Total	34	55.7	100.0	
Missing	System	27	44.3		
Total		61	100.0		



Continued

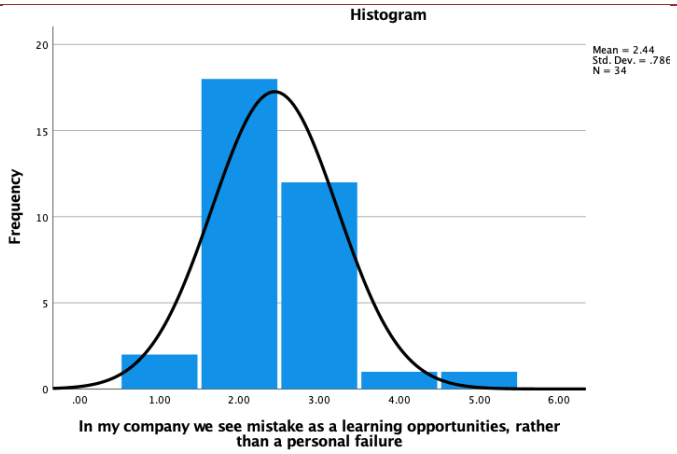
Question 5 — **How well does Deets management handle staff problems?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all well	9	14.8	27.3	27.3
	Not so well	2	3.3	6.1	33.3
	Somewhat well	1	1.6	3.0	36.4
	Very well	12	19.7	36.4	72.7
	Extremely well	9	14.8	27.3	100.0
	Total	33	54.1	100.0	
Missing	System	28	45.9		
Total		61	100.0		



Question 6 — **In my company we see mistake as a learning opportunities, rather than a personal failure**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	3.3	5.9	5.9
	Disagree	18	29.5	52.9	58.8
	Neutral	12	19.7	35.3	94.1
	Agreed	1	1.6	2.9	97.1
	Strongly agree	1	1.6	2.9	100.0
	Total	34	55.7	100.0	
Missing	System	27	44.3		
Total		61	100.0		

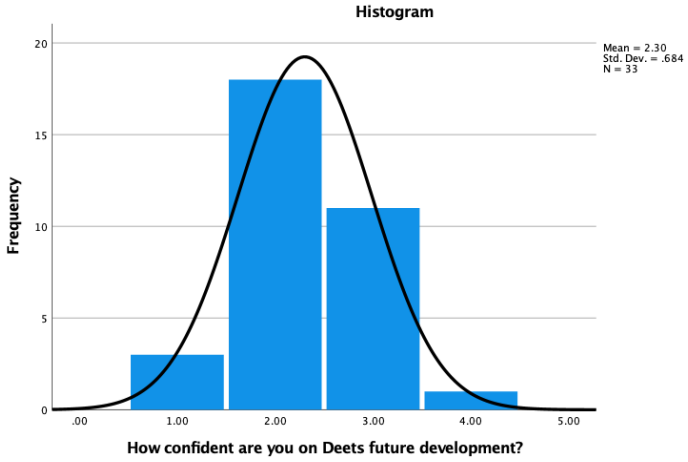


Continued

Question 7

How confident are you on Deets future development?

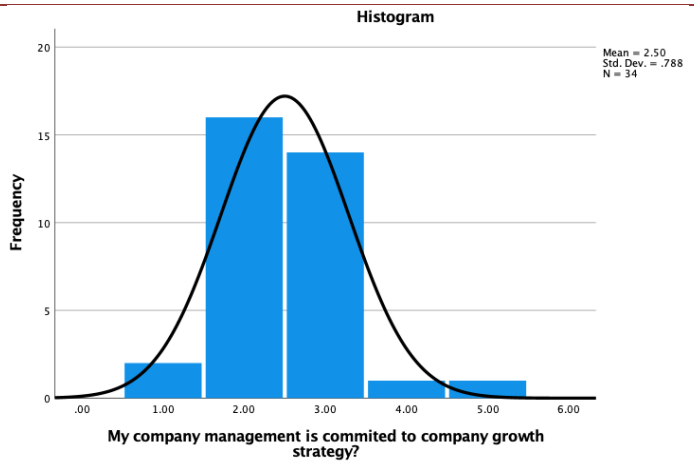
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No at all confident	3	4.9	9.1	9.1
	Not so confident	18	29.5	54.5	63.6
	Somewhat confident	11	18.0	33.3	97.0
	Very confident	1	1.6	3.0	100.0
	Total	33	54.1	100.0	
Missing	System	28	45.9		
Total		61	100.0		



Question 8

My company management is committed to company growth strategy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagreed	2	3.3	5.9	5.9
	Disagreed	16	26.2	47.1	52.9
	Neutral	14	23.0	41.2	94.1
	Agreed	1	1.6	2.9	97.1
	Strongly Agreed	1	1.6	2.9	100.0
	Total	34	55.7	100.0	
Missing	System	27	44.3		
Total		61	100.0		

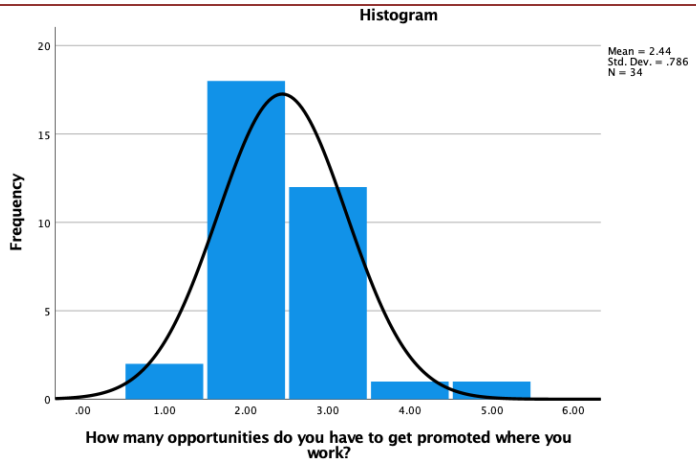


Continued

Question 9

How many opportunities do you have to get promoted where you work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No opportunity at all	2	3.3	5.9	5.9
	Not so good opportunity	18	29.5	52.9	58.8
	Somewhat good opportunity	12	19.7	35.3	94.1
	Very good opportunity	1	1.6	2.9	97.1
	5.00	1	1.6	2.9	100.0
	Total	34	55.7	100.0	
Missing	System	27	44.3		
Total		61	100.0		



demand can only be possible if tools and equipment are adequate and employees are well motivated to work.

Survey responses to question 3, "to what degree do you understand the logistic details required to deliver customer other" shows that 47.1% and 41.2% of Deets employees responded as "not so clearly" and "somewhat clearly" respectively. This is a source of concern and training is required for all Deets employees to fully understand the company procedure. Question 6 is designed to know the status of on-the-job training and 52.9% of the staff disagree with the fact that mistake is taken as learning opportunities rather than personal failure which has consequence management. Question 9 show that 52.9% of the employees do not believe that there is an opportunity of getting promoted in the company which leads to a high rate of workers turnover.

4.3. Customer Relationship Management

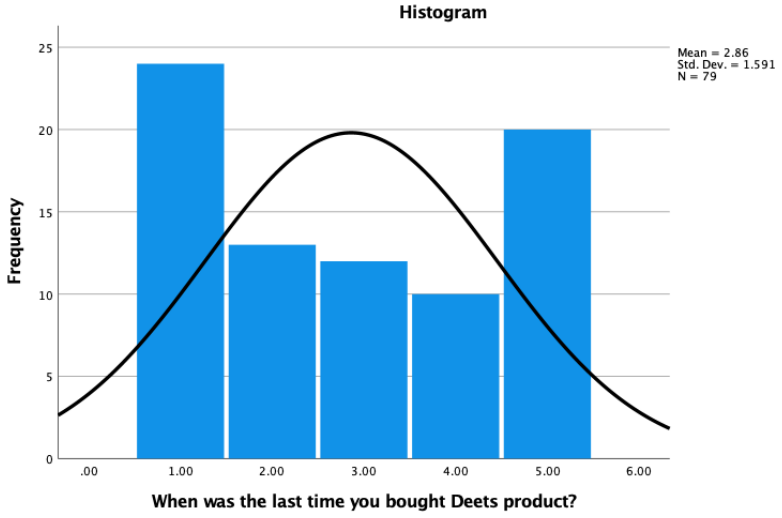
The survey questions in this category and analysis of responses using SPSS are as shown in Table 4—Customer Relationship Management. The response to Question 1 by the customers showed that 25.3% of the targeted population has purchased Deets products in the last month. However, response to question 4 shows that 17.7% of the customers have never heard of Deets product in the same market environment. Response to question 2 shows that the biggest competitor

Table 4. Customer relationship management (SPSS printout).

Question 1

When was the last time you bought Deets product?

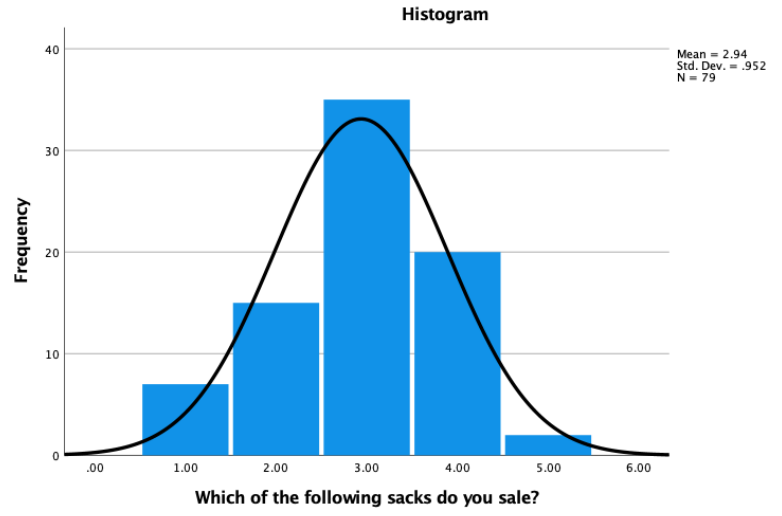
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	24	30.4	30.4	30.4
	More than 12 months	13	16.5	16.5	46.8
	In the last 6 months	12	15.2	15.2	62.0
	In the last 3 months	10	12.7	12.7	74.7
	In the last 1 months	20	25.3	25.3	100.0
	Total	79	100.0	100.0	



Question 2

Which of the following sacks do you sale?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Niger sack	7	8.9	8.9	8.9
	Dangote sack	15	19.0	19.0	27.8
	Bagco sack	35	44.3	44.3	72.2
	Shopping sack	20	25.3	25.3	97.5
	Deets sack	2	2.5	2.5	100.0
	Total	79	100.0	100.0	

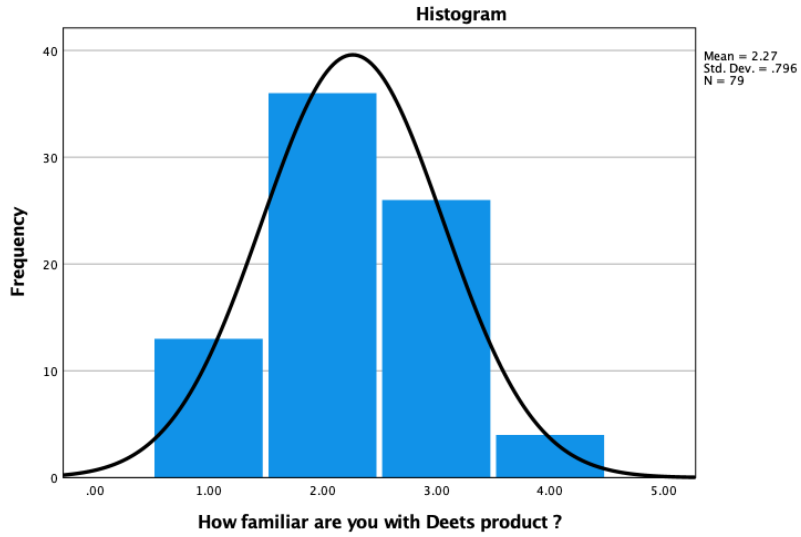


Continued

Question 3

How familiar are you with Deets product?

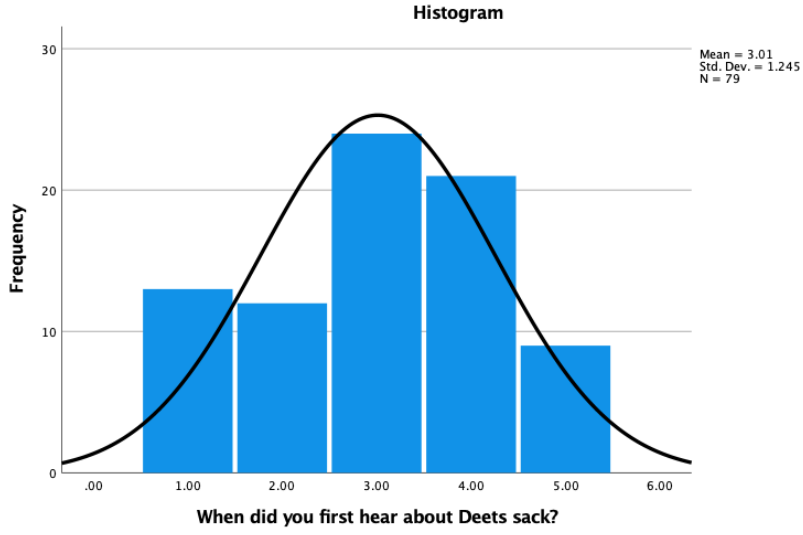
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all familiar	13	16.5	16.5	16.5
	Not so familiar	36	45.6	45.6	62.0
	Somewhat familiar	26	32.9	32.9	94.9
	Very familiar	4	5.1	5.1	100.0
	Total	79	100.0	100.0	



Question 4

When did you first hear about Deets sack?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never heard of it	13	16.5	16.5	16.5
	More than 2 years ago	12	15.2	15.2	31.6
	In the last 12 months	24	30.4	30.4	62.0
	In the last 6 months	21	26.6	26.6	88.6
	In the last one month	9	11.4	11.4	100.0
	Total	79	100.0	100.0	

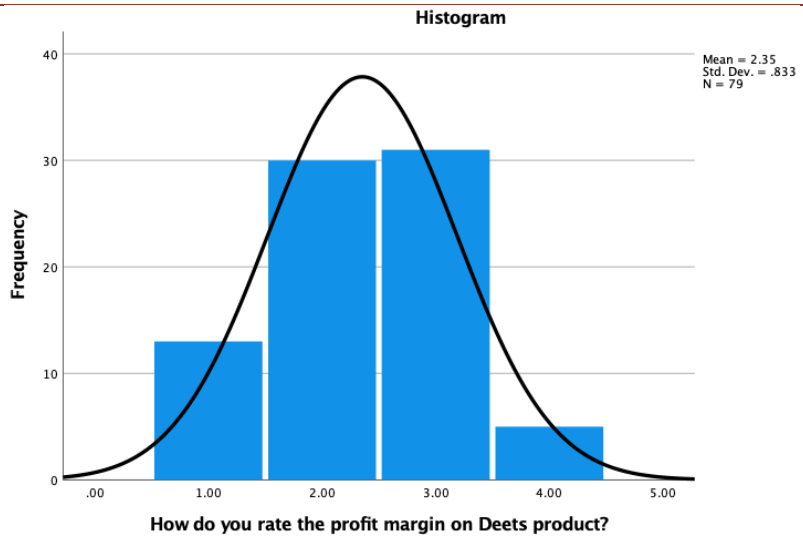


Continued

Question 5

How do you rate the profit margin on Deets product?

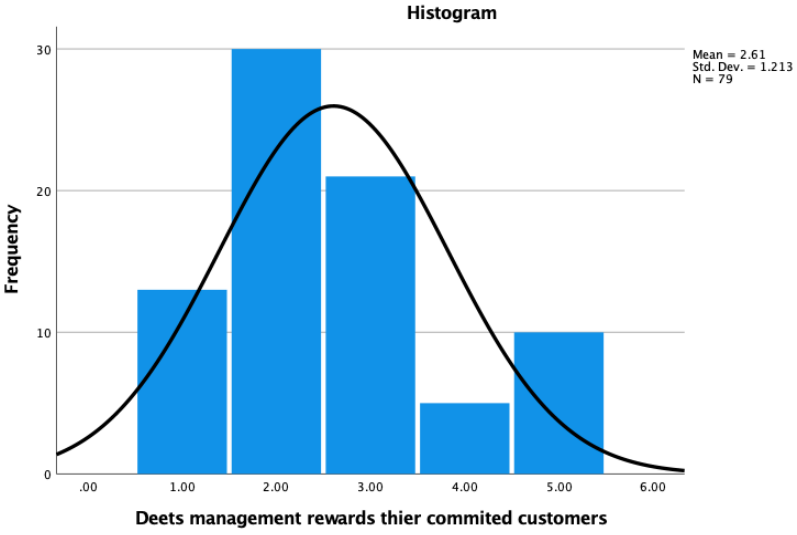
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None at all adequate	13	16.5	16.5	16.5
	Not so adequate	30	38.0	38.0	54.4
	Somewhat adequate	31	39.2	39.2	93.7
	Very adequate	5	6.3	6.3	100.0
	Total	79	100.0	100.0	



Question 6

Deets management rewards their committed customers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	16.5	16.5	16.5
	Disagree	30	38.0	38.0	54.4
	Neutral	21	26.6	26.6	81.0
	Agreed	5	6.3	6.3	87.3
	5.00	10	12.7	12.7	100.0
	Total	79	100.0	100.0	

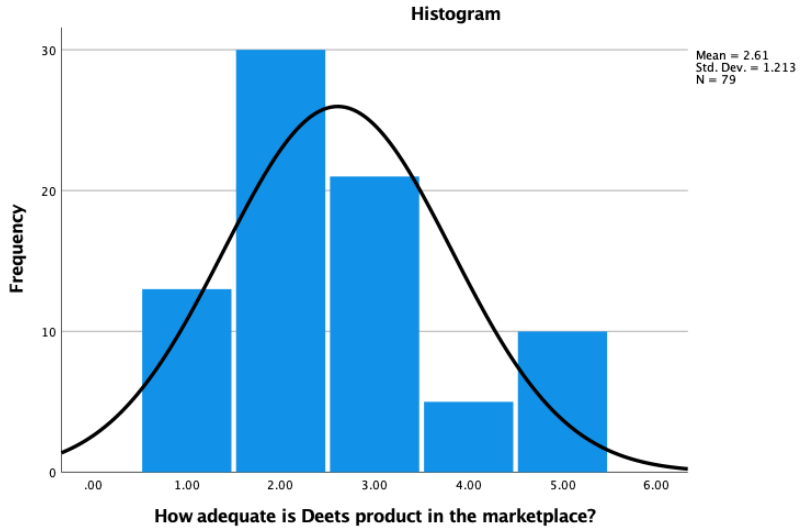


Continued

Question 7

How adequate is Deets product in the marketplace?

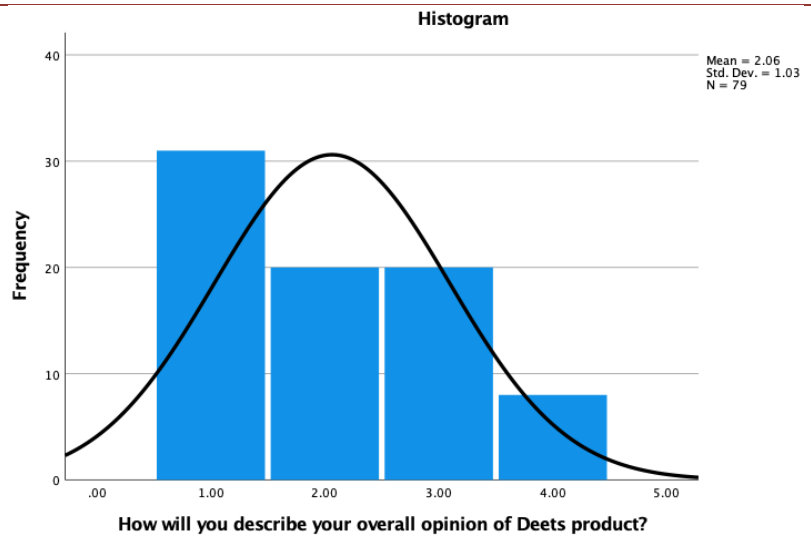
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all adequate	13	16.5	16.5	16.5
	Not so adequate	30	38.0	38.0	54.4
	Somewhat adequate	21	26.6	26.6	81.0
	Very adequate	5	6.3	6.3	87.3
	5.00	10	12.7	12.7	100.0
	Total	79	100.0	100.0	



Question 8

How will you describe your overall opinion of Deets product?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never heared	31	39.2	39.2	39.2
	Not so good	20	25.3	25.3	64.6
	Somewhat good	20	25.3	25.3	89.9
	Very good	8	10.1	10.1	100.0
	Total	79	100.0	100.0	

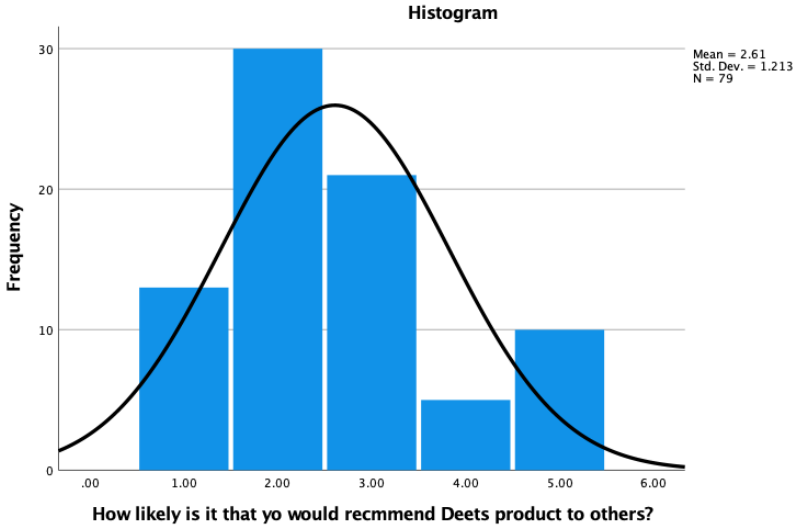


Continued

Question 9

How likely is it that yo would recmmend Deets product to others?

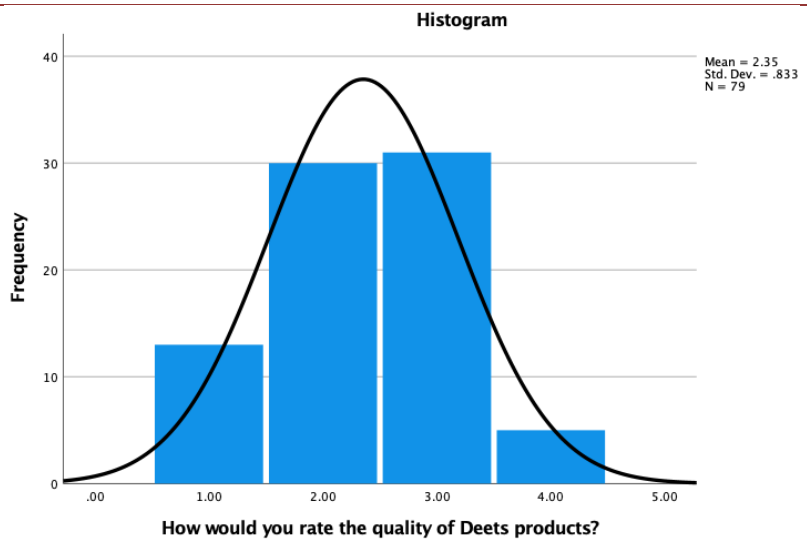
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	13	16.5	16.5	16.5
	Not so likely	30	38.0	38.0	54.4
	Somewhat likely	21	26.6	26.6	81.0
	Very likely	5	6.3	6.3	87.3
	5.00	10	12.7	12.7	100.0
	Total	79	100.0	100.0	



Question 10

How would you rate the quality of Deets products?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never heared	13	16.5	16.5	16.5
	Not so good	30	38.0	38.0	54.4
	Somewhat good	31	39.2	39.2	93.7
	Very good	5	6.3	6.3	100.0
	Total	79	100.0	100.0	



to Deets is Bagco company. Responses to question 4 show that Deets product popularity in the market increased greatly in the last 12 months. Only 39.2% of the customers "somewhat agree" to recommend Deets product to others while 38.2% think that Deets product is "not so good". Deets problem could also be because of poor product quality or lack of customer relationship management.

The customer's response to question 5 shows that only 39% of the customers think that the profit they make on Deets product is "somewhat adequate" while 38% think that the profit margin is "not adequate". In the situation where the profit margin of a distributor or retailer is considered "not adequate", they will opt for another alternative product in the market. To ensure Product development and commercialization, the product quality must be considered good. Response to question 8 shows that 39.2% of the customers agreed that Deets product is "somewhat good" and 25% agreed "not so good".

5. Conclusion and Recommendations

Strategic change for an organisation must be visible, adaptational, and the scope of change incremental in alignment to company business strategy (Rune Todnen By, 2005). In some cases, however, where business sustainability depends on a strategic change, the change may have to be immediate as against incremental implementation to prevent further losses for the company. Deets is a family business and empirical evidence demonstrates that family firms significantly differ from non-family firms across different dimensions. These dimensions include corporate governance structure, family goals, family culture and a trans-generational feature that determine change implementation in the company (Junaid Shaikh et al., 2013).

The result of the analysis shows that change is inevitable for the business sustainability of Deets company. Any organisation that refuses to change to meet the challenges posed by external factors will be out of business or will have a very low market share. The strength of an organisation is its ability to implement the change required to meet the needs and wants of its customers.

It will be of importance to analyse the context of the change required by looking at the readiness of the workforce, the leadership power to enforce the change, the change resources available, the degree of change needed, resources and practices that need to be maintained or changed and how quickly is the change needed. Deets strategic changes can be grouped into two parts namely short-term and long-term changes.

From the data gathered from the questionnaires and the analysis of the status of Deets supply chain, the following are the recommended changes in two categories namely:

A. Short term changes:

1) Consolidate pp fabric requirement for 2021 with SHREE TIRUPATI POLY PACK and keep the other supplier PLATINIUM TIE-UP both from India on standby.

2) Push for joint product and brand development with supplier and customer.

3) Arrange for third party inspection of quality and quantity before shipment from overseas.

4) Develop and implement a customer relationship management policy.

5) Conduct aggressive marketing to improve customer spread.

6) Synchronize production with customer requirement forecast.

B. Long term changes:

1) Search for alternative suppliers from Egypt or UAE—producers of PP countries.

2) Consider diversification into a product that does not require foreign exchange continuously.

3) Make company website functional and develop e-marketing platform.

4) Develop tools for customer inventory monitoring.

5) Stable operations should be followed by HR management policy.

6) Carryout Change Management implementation.

The following changes also are required for Deets business sustainability.

1) There is a need for Dee Ts to work on growing a brand and dedicated distribution network. This can be achieved by producing quality products at reasonable prices or simply put as value for money products, currently, Dee Ts needs to consolidate its product and product quality with a supplier and the customers and move away from general products.

2) The company needs to invest in the development of capable distributors. In Lagos city, in western Nigeria and Onitsha city in Eastern Nigeria, some markets are strategic for international trade across other African countries. Deets company needs to work on increasing market share in the PP bags category within Nigeria and its neighbouring countries.

3) Engagement of independent inspection companies such as SGS and Cotecna is a matter of necessity to the prevented occurrence of loading and shipment of off-spec products by the supplier

4) In the future procurement of machinery must be done strategically considering functionally, post-installation support and maintainability.

5) Find a source of funding to sustain the order of raw materials and pay suppliers as at when due. This may come with a premium.

6) Consolidation of all orders to one supplier will elevate Deets to an important customer relationship positing to the supplier.

This research work is limited to the small-scale manufacturing sector in developing countries of Africa. The Nigeria government policies are unique and not feasible in other countries hence the recommendations and conclusions of this research are tailored for Deets Nigeria limited. Further studies can be undertaken to analyse the three supply chain management levels of any organization for performance improvement.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

Balda, A. A. (2020). Level of Integration among Supply Chain Members in Moving towards the Adoption of Sustainable Supply Chain Management in Ethiopian Manufacturing Industries. *American Journal of Industrial and Business Management, 10,* 1181-1205. https://doi.org/10.4236/ajibm.2020.107080

Banjoko, S. A. (2012). The Performance of the Nigerian Manufacturing Sector: A 52-Year Analysis of Growth and Retrogression (1960-2012). *Journal of Asian Business Strategy, 2,* 177-191.

By, R. T. (2005). Organizational Change Management: A Critical Review. *Journal of Change Management, 5,* 369-380. https://www.researchgate.net/publication/233604011_Organizational_Change_Management_A_Critical_Review

der Vorst, J. V. (2004). Supply Chain Management: Theory and Practices. In T. Camps, P. Diederen, G. J. Hofstede, & B. Vos (Eds.), *The Emerging World of Chains & Networks* (pp. 2-18). Elsevier. https://www.researchgate.net/publication/40122004_Supply_Chain_Management_theory_and_practices

Foraminifera, M. R. (2014). *Pre Feasibility Report*. https://foramfera.com/marketresearchreports/manufacturing-market-research-reports/polypropylene-pp-woven-sack-production-in-nigeria-the-feasibility-report

Garvin, D. A. (1998, July 15). The Processes of Organization and Management. *Magazine Summer: Research Feature*.

Georgise, F. B. et al. (2014). Supply Chain Integration in the Manufacturing Firms in Developing Country: An Ethiopian Case Study. *Journal of Industrial Engineering, 2014,* Article ID: 251982. https://doi.org/10.1155/2014/251982

Goldsby, T. (2003). The Manufacturing Flow Management Process. *The International Journal of Logistic Management, 14,* 33-52. https://doi.org/10.1108/09574090310806585

Ho, D. A. (2002). Empirical Research on Supply Chain Management: A Critical Review and Recommendations. *Internal Journal of Production Research, 40,* 4415-4430. https://doi.org/10.1080/00207540210157204

McDonald, C. (2018). *FM Global Chain, S*. https://www.riskmanagementmonitor.com/tag/fm-global-survey/

Mentzer, J. D. (2001). Defining Supply Chain Management. *Journal of Business Logistics, 22,* 1-25. https://doi.org/10.1002/j.2158-1592.2001.tb00001.x

Njanike, K. (2019). The Factors Influencing SMEs Growth in Africa: A Case of SMEs in Zimbabwe. In N. Edomah (Ed.), *Regional Development in Africa*. IntechOpen. https://www.intechopen.com/books/regional-development-in-africa/the-factors-influencing-smes-growth-in-africa-a-case-of-smes-in-zimbabwe

Normalini, S. M. (2018). Supply Chain Management Drivers and Sustainability of Green Initiatives in Manufacturing Enterprises: A Case in Pakistan. *International Journal of Entrepreneurship, 22,* 1-19.

Prasad, D. S. et al. (2020). Critical Success Factors of Sustainable Supply Chain Management and Organizational Performance. *Transportation Research Procedia, 48,* 327-344. https://doi.org/10.1016/j.trpro.2020.08.027

Proshore, M. (2020). *Proshore Intelligent Investing*. https://www.proshareng.com/news/General/Why-companies-will-continue-to-leave-Nigeria-for-Ghana-/7324

Qrunfleh, S., & Tarafdar, M. (2014). Supply Chain Information Systems Strategy: Impacts on Supply Chain Performance and Firm Performance. *International Journal of Production Economics, 147,* 340-350. https://doi.org/10.1016/j.ijpe.2012.09.018

Shaikh, J. et al. (2013). Corporate Acquisitions of Malaysian Family Controlled Firms: Is an Act of Minority Shareholders Expropriation? In *2nd Applied International Business Conference (AIBC2013)* (p. 475). International Journal of Organizational Leadership.

Shaikh, J. M. (2012, May 16). Factors Influencing Entrepreneurship in Small and Medium Enterprises (SMEs) among Residents in Sarawak Malaysia. *International Journal of Entrepreneurship and Small Business, 16,* 83-101.
https://doi.org/10.1504/IJESB.2012.046919
https://www.inderscienceonline.com/doi/abs/10.1504/IJESB.2012.046919

Shamil, M., & Shaikh, J. (2012). Determinants of Corporate Sustainability Adoption in Firms. In *2nd International Conference on Management (ICM)* (pp. 419-433). ResearchGate.

Sukati, I. (2011). An Investigation of the Relationship between Supply Chain Management Practices and Competitive Advantage of the Firm. *Contemporary Marketing Review, 1,* 1-13.