

Supply Chain Collaboration Strategies and Sustainable Competitive Advantage of Packaged Water Producing Companies in Rivers State

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ABSTRACT

This study focused on supply chain collaboration strategies and sustainable competitive advantage packaged water companies in Rivers State. A correlational study was structured to test four (4) hypotheses stated for the study. The survey research method was employed for the study on a population comprised 47 packaged water companies in Rivers State. The simple random technique was used to identify three personnel each from the 47 companies to obtain 141 respondents for the study. A 5-point likert-scale questionnaire was administered to 141 respondents, of which 100 (70%) were returned and used for the analysis. The study adopted descriptive statistics and Pearson's Product Moment Correlation method for data analysis. The results revealed that supply chain collaboration strategies has a moderate, positive and significant relationship with organizational responsiveness and cost leadership. The study therefore, concludes that, supply chain collaboration strategies significantly relates with sustainable competitive advantage of packaged water companies in Rivers State, and recommends amongst others that, management of packaged water firms should key in effectively to supply chain collaboration strategies programs that do drive their companies towards positive and creative sustainable competitive advantage through organizational responsiveness and cost leadership.

Key Word: *Packaged water producing companies Supply chain collaboration strategies, Sustainable competitive advantage*

INTRODUCTION

The packaged water producing company is fast growing industry in the world and it is very dynamic with a high competition in the market (Kasier & Sphuhler 2020). Sustainable competitive advantage is superior performers attributes and resources that are unable to be duplicated or initiated by current and potential competitors. Sustainable competitive advantage allows supply chain members to outperform it competitors, It includes access to natural resource, such as high-grade ores or a low-cost, power source, high skilled labour, geographic location, high entry barriers and access to new technology. In today's extremely globalised and

competitive supply chains, collaboration is rapidly up-and-coming as a tactical choice (Cao & Zhang 2011; Hudnurkar, Jakhar & Rathod 2014; Hingley, Lindgreen & Grant' 2015).

Supply chain collaboration strategies is a broad concept encircling joint planning, information sharing, communication, risk management and asset sharing (Fawcett, Jones & Fawcett 2012). In order to create sustainable competitive advantage and condense risk exposure, relationship longevity, trust and communication are measured as decisive success factors (Miocevic & Cmjak-Karanovic 2012; Kumar & Nath 2014; Hingley et al. 2015). The foremost value proposition that steers the leaning towards supply chain collaboration is the synergistic benefit derived from networks among supply chain partners-(Bolstorff & Rosenbaum 2012). This view has support from SCM scholars (Ramanathan & Gunasekaran 2014; Hingley et al. 2015) who observed a paradigm shift from a transactional to a collaborative operational approach.

Sustainable competitive advantage which are companies' asset, abilities, attributes are difficult to duplicate or exceed but when supply chain collaboration is executed it will provide superior or favourable long-term position over competitors. Supply chain collaboration strategies is a key concept that is essential to be applied in the business environment, especially the packaged water industry. Supply chain collaboration is an interaction between supply chain members and integrates the flow of products and information in order to achieve a common goal and obtain mutual benefits. Yin Sin *et al.* (2016). It is also the formation of close, long-term partnership where supply chain members work together and share resources and risk to accomplish shared objectives (Cao & Zhang 2011). Application of supply collaboration in industries or firms is able to cut down cost (Adams *et al.*, 2014), in traditional supply chain the flow of materials and information is limited in terms of collaboration and visibly (Qu & Yang 2015)* therefore Successful implementation of supply chain collaboration will enable an organization to have opportunities to achieve efficient and responsive supply chain and to also have a competitive advantage that can be sustained.

Packaged water firms have reached a saturation point, there are many firms in the bottled water industry and at such that level of competition is so intense that only the most efficient ones will be able to survive. Packaging supplies has offered water bottling firms the ability to negotiate for lower prices, thus reducing their production costs offering them to make more profit and have a sustainable competitive advantage. (Ivy panda, 2019). Therefore, collaboration in supply chain collaboration that have a payoff through sales.

Purpose of the Study

The main purpose of this study is to investigate the relationship, between supply chain collaboration strategies and sustainable competitive advantage of packaged water firms in Rivers State.

Specifically, the study is poised to:

1. To determine the relationship between supply chain collaboration strategies and organizational responsiveness of packaged water firms in Rivers State.
2. To determine the relationship between supply chain collaboration strategies and cost leadership of packaged water firms in Rivers State.

Research Questions

1. To what extent does supply chain collaboration strategies relate with organizational responsiveness of packaged water firms in Rivers State?
2. To what extent does supply chain collaboration strategies relate with cost leadership of packaged water firms in Rivers State?

LITERATURE REVIEW AND HYPOTHESES Conceptual Framework Supply Chain Collaboration Strategies

Supply chain collaboration (SCCS) as a collaborative platform between supply chain members with the main intention to utilize resource and knowledge of manufacturers, suppliers' distributors, logistics and customer (Saenz, Ubaghs & Guevas, 2015). This collaborative relationship integrates the flow of information and products between members in order to achieve common interest and supply chain goals. Supply chain collaboration strategies as two or more chain members working together to create a competitive advantage through Sharing information making Joint decisions and sharing benefits which result from greater profitability of satisfying end customer need than acting alone (Chronticha, 2011). The advent of supply chain collaboration creates the need at the intercompany level to pay special attention to the understanding of collaboration in order to create collaborative effort successfully (Chronticha 2011).

Supply chain collaboration strategies is therefore a major factor in maintaining a supply chain competitive advantage position and deemed an interesting research topic. Collaboration in supply chain requires a rational amount of effort from all participating members to ensure the attainment of potential benefits. Organisation today are all in the process of adopting supply chain activities, they perceive that it is not enough to improve efficiencies within an organisation. The successful implementation of supply chain collaboration can unify the people's decision, behaviours and encourage the efficient organisation operation.

Sustainable Competitive Advantage

Sigalas, Pekka-Economou and Georgopoulos (2013:335) defined competitive advantage as "the above industry average manifested exploitation of market opportunities and neutralization of competitive threats". Sultan and Mason (2010) put in plain words that, the sustainability of a business is realized by means of competitive advantage; whereby upon the formulation of business schemes, it is essential to generate values to customers. Rarity, value impossibility of being initiated and impossibility of being replaced. Sustainable competitive advantage is affected by three factors which are: The size of the market, greater access to resources and customers, and restrictions on the power of the competitors. Sustainable competitive advantage, is thus, a business strategy anchored on firms' resources that systems firm to withstand their competitive advantage by outclassing others in a competitive setting. It is the continuousness of paybacks and implementation of inimitable value creation harmoniously with possible competitors that are not able to duplicate such paybacks. Thus, a company can generate sustainable competitive advantage when managers apply its strategy based on characteristics that cannot be effortlessly imitate. This study in line with Ngobe (2020), this study adopts suggested two measures of which are organizational responsiveness and cost leadership as the measures of sustainable competitive advantage.

Organisational Responsiveness

Organisation responsiveness can be described as the competence of the supply chain to react doggedly and within an pertinent timeframe to customer demands or adjustments in the marketplace (Murauskiene, 2014). Organisation responsiveness is information utilisation within the organisation, which is composed of two set of activities; response design (the use of market intelligence to develop plans) and response implement (the use of market intelligence to execute such plans). Several concrete forms of organisation responsiveness which includes; selecting target market, designing and offering products and services that cater to customers current and anticipated needs, producing, distributing and promoting the product in a way that elicits favourable end customer response. Responsiveness is a prime prospective of agility, which is very important in order to enhance good organization in excellence, smooth process stream and cost and thus also highlights the connection with lean supply chain philosophy. Responsiveness therefore is a perception that is uniquely converged on varying customer requirements and its quantifiability hinges on where the classification limitations are drawn and thus on the definition of the organization's customers.

Cost Leadership

Cost leadership is a business strategy in which companies creates a competitive advantage by having the lowest cost of operation in the industry. It is the ability of the organisation to compete against major competitors based on low price (Lin & Wu, 2006). Cost leadership is an industry through a set of functional policies aimed at some basic objectives. It requires an aggressive setting up of internal efficient scale facilities, vigorous cost trap and reduction policy, overhead control cost minimisation (Porter, 1980). Cost leadership can be achieved through focusing on organisation efficiency which could be obtained via various production and processes (economies of scale (Green *et al*, 1993). Therefore, cost leadership could be seen as top low- cost driving strategy within the organisation.

Empirical Review

Shu-Hsien and Li-wen (2017) studied 74 firms in Taiwan networking communication industry by means of 465 questionnaires from the upstream and downstream manufacturers of Taiwan networking communication industry and employed structural equation modelling (SEM) to for data analysis. The result demonstrates that the relationship can have a positive influence on

supply chain capability is a full mediator. Besides, supply chain echelons(upper, middle and downstream) have some moderation effects in these relationships.

Vanathi and Swamynathan (2014) investigated supply chain collaboration and sustainable competitive advantage in the Indian textile industry. The study embraces 235 supply chain partners of the textile industry of Tamil Nadu. The visual PLS software package and the statistical package for social sciencel6.0 (SPSS) were employed for analysis structural equation modelling was used to prove the thesis along with a reliability analysis, and the findings revealed that a positive relationship between supply chain collaboration and sustainable competitive advantage.

Cao and Diane (2014) examined joint decision making and sustainable competitive advantage by empirically testing the proposed model by means of structural equation modelling based on 232 respondents collected from UK manufacturing companies. A path model was also empirically tested by means of a linking joint decision making, and sustainable competitive advantage. Subsequently, the researcher used secondary data for the study, the analysis exhibited that joint decision making have a full mediating effect on sustainable competitive advantage.

From the review of literature, the study formulated an operational framework This is presented in figure.

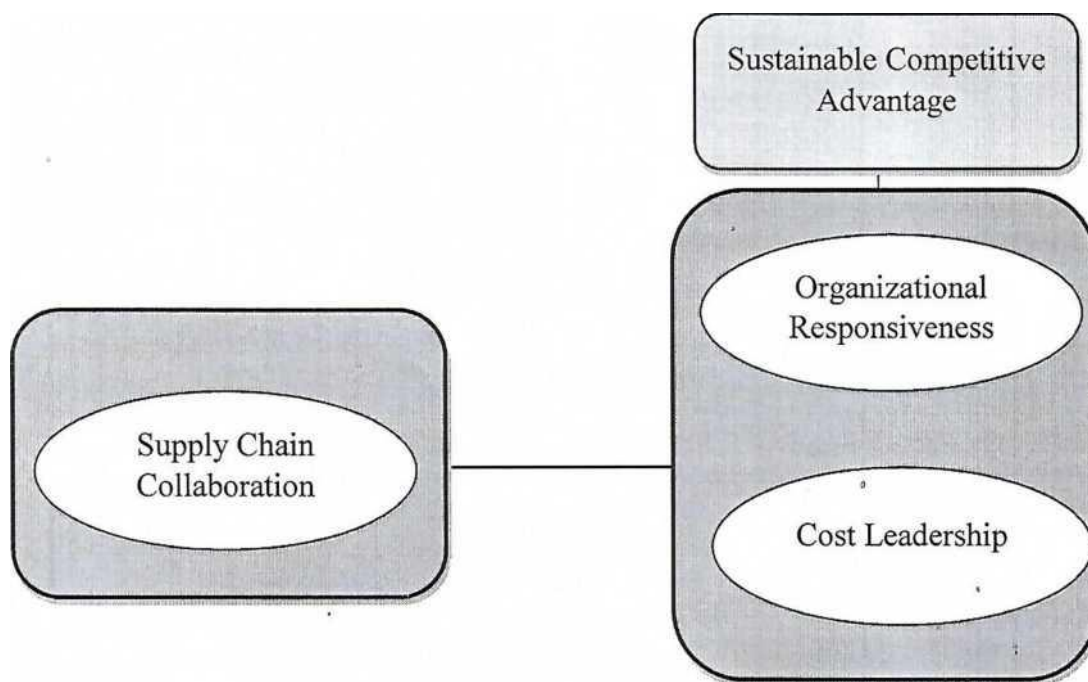


Figure 1: Conceptual Framework of Supply Chain Collaboration and Sustainable Competitive Advantage.

Source: Adopted from Barratt (2004) and Ngobe (2020).

From the conceptual framework, the following research hypotheses were formulated:

Ho2: There is no significant relationship between supply chain collaboration strategies and

Hoi There is no significant relationship between supply chain collaboration strategies and organisation responsiveness of packaged water firm in Rivers State.

cost leadership of packaged water firm in Rivers State.

RESEARCH METHODOLOGY

The survey research was adopted and population of seventy-nine (79) registered packaged companies with the Rivers State Ministry of Commerce and Industry. Through the Taro Yamane formula for sample size determination, sample size of 47 forty-seven (47) packaged water companies was derived for the study. The simple random technique of probability sampling was utilized to attain the respondents of this study which was confirmed by contacting three (3) senior staff in each of the 47-packaged water companies under study. These are: the Quality control managers, Marketing managers, and Logistics managers of the focal companies. This summed up to one hundred and forty-one (141) respondents. A total of one hundred and forty- one copies of questionnaire were self-administered to the management 'Staff of forty-seven (47) packaged water firms. The questionnaire was made up of fifteen (15) close-ended or structured questions, divided into two sections. The dependent and independent Variables was measured on a five-point likert scale, and the response scale for each statement in the research questionnaire, was ,5 -Very high extent, 4 -High extent, 3 Moderate extent, 2 -Low extent, 1-Very low extent. After completion, 141 questionnaire was retrieved, of which 100 (70%) were returned and used for the analysis. The study adopted descriptive statistics and Pearson's Product Moment Correlation method for data analysis.

Reliability of the Instrument

The reliability of the items on the instrument was determined by the application of the Cronbach Alpha test with the aid of SPSS software. Variables with Cronbach Alpha coefficients above

0. 60 was considered reliable; having satisfied the acceptable level of internal consistency posited by Nunnally and Bernstein (1994). The variables in this study were all reliable. This is illustrated in figure Table 1.

Table 1 Reliability Analysis of the Research Instrument.

S/N	Variables	Number of Items	Cronbach's Alpha
1.	Supply Chain Collaboration	3	0.764.
2.	Organizational Responsiveness	3	0.759
3.	Cost Leadership	3	0.894

Source: *Researcher Field Data (2022).*

Results

Analysis of Research Questions

The section aims at providing answers to the two research questions raised earlier. This boarder on establishing the relationship between the dimensions of supply chain collaboration (vertical collaboration and horizontal collaboration) and sustainable competitive advantage. To answer the research questions, the descriptive statistics on the questionnaire items was applied.

Research Question One:

Table 2: Shows the analysis and interpretation of the frequencies on items of vertical collaboration and sustainable competitive advantage (n=100).

		VLE (1)	LE (2)	ME (3)	HE (4) ■	VHE (5)
1.	Your company collaborative relationship integrates the flow of information and products between members in order to achieve organizational responsiveness.	7 7% 7	6 6% 10	8 8% 24	14 14% 56	65 65% 325

Source: Research Data, 2022

Table 2 shows frequencies of supply chain collaboration and organizational responsiveness as presented by packaged water companies studied. On the item on your company collaborative relationship integrates the flow of information and products between members in order to achieve organizational responsiveness, 65 (65%) was recorded for very high extent, 14 (14%) for very high extent, 8(8%) for moderate extent, 6(6%) for low extent 7(7%) for very low extent. This implies that supply chain collaboration is a positive phenomenon that relates with organizational responsiveness in packaged water companies.

Research Question Two:

Table 3: Shows the analysis and interpretation of the frequencies on items of supply chain collaboration and cost leadership (n=100).

		VLE (1)	LE (2)	ME (3)	HE (4)	VHE (5) •
1.	The successful implementation of supply chain collaboration can encourage cost leadership.	7 7% 7	15 15% 30	12 12% 36	39 39% 117	27 39% 135

Source: Research data, 2022

Table 3 shows frequencies of supply chain collaboration and cost leadership as presented

for packaged water companies studied. On successful implementation of supply chain collaboration can encourage cost leadership, 27 (27%) was for very high extent, 39 (39%) was for high extent, 12 (12%) was for moderate extent, 15 (15%) was for low extent and 7 (7%) was for very low extent. This implies that supply chain collaboration relates with cost leadership in packaged water firms.

Test of the

Hypotheses

Decision

Rule

Significant/probability value (Pv) < 0.05 (level of significance = conclude significant Relationship).

Significant probability value (Pv) > 0.05 (level of significant =, conclude insignificant Relationship).

Hypothesis 1

Hoi: There is no significant relationship between supply chain collaboration and organisation responsiveness of packaged water firms in Rivers State.

Table 4: Correlation Analysis showing the direction and strength of the relationship between Supply Chain Collaboration and Organizational Responsiveness.

Variables	Statistics	Supply Chain Collaboration	Organizational Responsiveness
Organizational Responsiveness	Pearson's correlation Sig. (2-tailed)	1.000	.437** .000
	N	100	100
Supply Chain Collaboration	Pearson's correlation Sig (2-tailed)	.437** .000	1.000
	N	100	100

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

Table 4 shows that the Pearson's $r = 0.437^{**}$. This shows that a moderate relationship exists between supply chain collaboration and organizational responsiveness. The sign of the correlation coefficient is positive, indicating that when supply chain collaboration increases, organizational responsiveness also increases. This does not agree with the stated null hypotheses 1 (There is no significant relationship between supply chain

collaboration and organisation responsiveness). Therefore, the researcher rejects the null hypothesis and accepts the alternative hypothesis that there is a significant relationship between supply chain collaboration and organisation responsiveness.

The significant/probability value (pv) = 0.000 < 0.05. Therefore, the researcher concludes that a significant positive and moderate relationship exist between supply chain collaboration and sustainable competitive advantage, implying that when a company is perceived as applying collaboration in her supply chain, this effort will in turn lead to positive organizational responsiveness.

Hypothesis 2

H02: There is no significant relationship between supply chain collaboration strategies and cost leadership.

Table 5: Correlation Analysis showing the direction and strength of the relationship between Supply Chain Collaboration and Cost Leadership. Correlations

Variables	Statistics	Supply Chain Collaboration	Cost Leadership
Cost Leadership	Pearson's correlation	1.000	.412**
	Sig. (2-tailed)		.000
	N	100	100
Supply Chain Collaboration	Pearson's correlation Sig (2-tailed)	.412** .000	1.000
	N	100	100

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

Table 5 shows that the Pearson's (r) = 0.412**. This shows that a moderate relationship exists between supply chain collaboration and cost leadership. The sign of the correlation coefficient is positive, indicating that when supply chain collaboration increases, cost leadership also increases. This does not agree with the stated null hypothesis 2 (There is no significant relationship between supply chain collaboration and cost leadership). The significant/probability value (pv) = 0.001 < 0.05. Therefore, the researcher concludes that a significant positive and moderate relationship exist between supply chain collaboration and cost leadership, implying that when a company is perceived as applying collaboration in its supply chain, this effort will subsequently lead to cost leadership.

Discussion

Ideally, supply chain collaboration strategies is a prime factor or driver of sustainable competitive advantage. Information sharing is employed to promote disclosures in an organization. As it is in our expectation and indeed supported by our findings, supply chain collaboration has a moderate, positive and significant relationship with organizational responsiveness and cost leadership. Thus, Hoi and Ho2 sought to determine the association between supply chain collaboration and organizational responsiveness and cost leadership using the Pearson's product moment correlation analysis. The hypotheses were stated in the null form, statistically tested and rejected. The alternative hypotheses that there is a significant relationship between supply chain collaboration and organizational responsiveness and cost leadership were accepted. The concept of supply chain collaboration as measured in this study dealt with issues on collaborations in supply chains for an all-embracing management strategy for a potent and effectual activities that would be able to use organizational responsiveness and cost leadership maximally for creative activities that will enhance sustainable competitive advantage. From our findings, we understand that when supply chain collaboration is positively handled, it rubs on positively on the company's ability to generate organizational responsiveness, and cost leadership in work processes to attain sustainable competitive advantage. Our findings agree and support the findings of Vanati and Swanynather (2014) whose result shows a positive relationship between supply chain collaboration and sustainable competitive advantage, and Cao and Diane (2014) whose findings demonstrated that joint decision making has a full mediating effect on sustainable competitive advantage. Besides^ the findings of this study supports that of Shu-Hsien and Li-wen (2017) whose result demonstrates that the relationship can have a positive influence on supply chain capability.

Conclusion

This work focused on investigating the relationship between supply chain collaboration strategies and sustainable competitive advantage of packaged³ water firms in Rivers State. The following conclusions can be drawn from the discussion of our findings and from the hypotheses.

The results of the quantitative analysis demonstrates that these is sufficient evidence to show that supply chain collaboration programmes adopted by package water firms relate with sustainable competitive advantage through organizational responsiveness and cost leadership. The Hoi and H02, were all statistically measured and rejected, and the alternative hypotheses accepted, indicating that supply chain collaboration significantly and positively relates with organizational responsiveness and cost leadership. Therefore, the study concludes that, supply chain collaboration significantly relates with sustainable competitive advantage of packaged water firms in Rivers State.

Recommendations

Several recommendations are put forward to improve supply chain collaboration and competitive advantage in packaged water firms.

1. The study recommends that management of packaged water firms should key in effectively to supply chain collaboration programs that will drive their companies towards positive and

creative sustainable competitive advantage through organizational responsiveness and cost leadership.

2. Packaged water firms should partner with suppliers in improving business processes that could advance trust and relationship prolonged existence
3. It is further important for packaged water firms to become more transparent by guaranteeing that their quarterly and annual reports are accessible to strategic suppliers
4. Monthly supplier newsletters can be created, which enclose information that suppliers can use to improve their supply efforts.

If special attention is paid to these areas, it is likely that collaboration efforts will lead to better competitiveness in packaged water firms.

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