An investigation into the impact of supply chain management practices on the supply chain responsiveness of the non-alcoholic beverage industry in Western Province, Sri Lanka

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ABSTRACT

Market share will be lost as the number of competitors increases if supply chain management practices, particularly supply chain responsiveness, are not implemented. The goal of this study is to see if there is a link between strategic supplier partnerships, customer relationships, information sharing, and supply chain management practices, and supply chain responsiveness. The study is being conducted in Western Province, including the districts of Gampaha, Colombo, and Kalutara, to evaluate and identify the influential factors for supply chain responsiveness. Individual executives and above-level employees from departments of production, operation/manufacturing, quality enhancement, inventory and warehouse, transport, and distribution in non-alcoholic beverage manufacturing companies registered with the Export Development Board of Sri Lanka were polled.

Data from 134 respondents is collected and analyzed using reliability and validity tests, descriptive and correlational analysis, and simple and multiple regression analysis. Other literature studies have all contributed to the findings of this study. The findings revealed a significant positive relationship between supply chain responsiveness concepts and supply chain management practices such as strategic supplier partnership, customer relationships, and information sharing. The study delves into the concept of supply chain responsiveness and its impact on manufacturing companies, as well as suitable strategies for improving supply chain responsiveness and supply chain management practices. There have been few studies on the selected topic in the Sri Lankan context, so this study will add to the literature and have several managerial implications for the industry. It is advised to conduct additional research to obtain more reliable insights in the field of study.

Keywords: Supply Chain Management Practices, Supply Chain Responsiveness, Strategic Supplier Partnership, Customer Relationship, Information Sharing

INTRODUCTION

Background of the Study

The stages of planning, organizing, leading, and controlling that occur in the process of combining to achieve a specific goal are simply referred to as "management." Management is the process of coordinating resources, achieving coordination, and establishing the goals or

objectives of managerial involvement. Supply chain management is the management of the entire production or service floor, from raw materials to final product output or service delivery to the customer. The smooth flow of goods and services among business units, on the other hand, is location-dependent, including raw material storage, working in process inventory, finished goods, and consumption quantities. Visibility, talent acquisition, cloud-based solutions, cyber security, digitalization, globalization, and resilience are some current supply chain management trends. Supply chain management practices help to improve understanding of how processes are integrated to produce output that adds value to customers. Supply chain management practices include a variety of activities, including business, that promote effective supply management, such as planning, sourcing, supplies and materials, manufacturing, delivery, and returns. Supply chain responsiveness is the ability of an organization to respond efficiently and effectively to the dynamic impact of its customers by reacting in accordance with market requirements. Strategic supplier partnership (SSP), customer relationship (CR), and information sharing (IS) are all important supply chain management practices.

Strategic supplier partnership is the pinnacle of supplier relationships that organizations consider when selecting partners. Strategic supplier partnerships are focused on collaboratively working as a team while sharing information and developing risk-rewarding relationships. The majority of these connections occur between two or more commercial enterprises. Strategic supplier partnerships can significantly improve the quality of materials provided to organizations. It can also be used to capture the supply chain process and subprocesses in decision support systems. Strategic supplier partnerships enable open forms, case problem solving, interconnections, and the achievement of a common goal, which is essentially profitability and cost reduction for an organization. These collaboration strategies are intended to resolve conflicts, meet mutual demands, manage costs, delivery activities, and other organizational activities throughout the supply chain management process.

Customer relationships are the criteria that a company uses to coordinate with its customers and improve their product or service's customer experience. This has an effect on the organization's ability to conduct business, respond to inquiries, and meet deadlines. Customer relationships, as a supply chain responsiveness criterion, demonstrate that the organization's first concern is about customer needs and being supportive to compete in a crowded market, continuous progress, and brand development. Simply put, information sharing is the exchange of various levels of data between various types of organizations, technologies, and people. It is a critical approach to any type of organization's survival and supply chain integration.

Furthermore, information sharing is encouraged to provide the foundation for supply chain processes to execute transactions and to aid management levels in decision-making.

Dimensions of supply chain responsiveness include operational system responsiveness, logistics process responsiveness, and networking supply responsiveness. The responsiveness of an operational system aids in qualifying an organizational process or supporting information technology solution indications in response to changes in conditions and customer interactions. Simply put, logistic process responsiveness means that a company's transportation, distribution, and warehousing systems respond to fluctuations in customer demand through operation system responsiveness. The responsiveness of logistic processes is an important factor in the success of responsive supply. Responsive suppliers can have a significant impact on the impact of supplier network responsiveness on an organization's delivery performance.

Oil, fats, additives, functional foods, herbal natural foods, alcoholic and non-alcoholic drinks, energetic drinks, baked foods, canned and packaged foods, and animal foods comprise the global food and beverage industry. The food and beverage industry is the world's largest and fastest-growing sector, with significant growth potential in the manufacturing sector. It includes food manufacturing, operating, catering, food transport services, cafeterias, and fast-food restaurants that are involved in the production, packaging, transportation, and serving of food or beverages.

The beverage industry generates jobs and invests heavily in technology, retail improvement, and environmental sensitivity. The beverage industry is an important supporter of national exchange and economic development in each country. The United States is expected to have the largest industry in 2022, with a total annual revenue of more than 146 billion US dollars. Furthermore, the alcoholic and non-alcoholic beverage industries in the United States generate a total annual revenue of 146 billion dollars. According to EHL insights, the beverage world's 2022-year trend is focusing on a good, healthy beverage as a development of drinking habits due to the COVID worldwide pandemic era. A beverage is simply a non-water drink that has been prepared for human consumption. Tea, herbal, water, coffee, dairy, syrups, cordials, soft drinks, carbonated drinks, and fruit juices are examples of beverage products. Non-alcoholic beverages (soft drinks) can be classified as carbonated or non-carbonated, such as fruit juice, fruit nectar, coffee, tea, packaged water drinks, and tonic water (Sivasomaskhar, 2010).

At a medium and smooth level, Sri Lankan manufacturing companies use supply chain responsive practices. The Colombo Stock Exchange (CSE, 2020) is home to approximately 50

food, beverage, and tobacco manufacturing companies. In addition, the Export Development Board of Sri Lanka (EDB, n.d.) Registered 11 non-alcoholic beverage companies and 25 alcoholic beverage companies. The carbonated soft drink market in Sri Lanka was worth 289 million USD in 2015 and is expected to reach 614.3 million USD by 2025 (marketresearch.com, 1999-2022).

The food and beverage sector, according to the Export Development Board, includes coconut, vegetables, fruity products, extracts, juices, partially cooked foods, bakery foods, ready-to-serve foods, animal feed, cereal preparation, and flour. Sri Lanka's soft drink market is worth $80 million, and the fruit juice market is worth $12 million. For Sri Lankans, the Ready-to-Drink (RTD) industry is a distinct segment of the beverage market.

According to Statista.com, the beverage segment's revenue is expected to reach US$109.30 million in 2022. From 2022 to 2025, revenue is expected to grow at a 23.98% annual rate. By 2025, the population of beverage users is expected to reach 2.5 million. In any case, according to the Sri Lanka Colombo stock exchange (2022, Aug. 17), the beverage industry in Sri Lanka increased by 7.9% in the last week, with Distilleries Company of Sri Lanka increasing by 9.2%. According to previous year's records and data analysis, the beverage industry has decreased by 18%. It is expected to grow at a 6.2% annual rate over the next few years.

The Sri Lankan beverage industry's performance fell by 4.5% in the first quarter of 2020. Short-term restrictions harmed economic activities, including exports (Goolsbee & Syverson, 2021); the food and beverage industry contributes 4.7% to export earnings (Central Bank of Sri Lanka, 2020).

The supply chain responsiveness is agile and responsive to customer needs while serving demand, with base-line business activities such as order fill, scalable delivery, communication, and customer satisfaction expected. The responsiveness will be intuitive and capable in the face of sudden changes, as well as an improvement of the organization's entire supply chain process in strategic supplier partnerships, customer relationships, and information sharing. Supply chain management practices can help improve supply chain responsiveness and thus an organization's competitive advantage. Directly impacted the competitiveness of that organization's supply chain by increasing supply chain visibility, developing good relationships, improving the brand, and completing the supply chain process. This study focuses on the non-alcoholic beverage industry and how certain supply chain practices affects the beverage industry's supply chain responsiveness in Western province, Sri Lanka

Problem Identification & Justification

Because of the rapid changes in the business environment and the competition in the beverage industry in the manufacturing field, which has created a high demand for low prices, good quality, large varieties, and the fastest delivery in today's world economy, supply chain manufacturing practices are useful for each organization. Moreover, organizations are not currently focused on different supply chain segments. As a result, consider all organizations to be one supply chain unit. Market share will be lost as the number of competitors in the supply chain management field grows, if there is high competition without supply chain management practices, particularly supply chain responsiveness practices. There have been very few studies, a scarcity of research findings, a lack of interest in this area of the beverage industry in recent years, very little collection of literature, a low focus on the industry, few discussions, and a specific research gap on supply chain management practices in SSP, CR, and IS in Sri Lanka. The study aims to fill a gap in the literature on supply chain responsiveness by empirically investigating the impact of various practices between and among non-alcoholic beverage companies in western Sri Lanka on supply chain responsiveness. As a result, discovering a link between SCMP and SCR and presenting it to the business community raises awareness. As a result, using these supply chain practices at the managerial and executive levels will benefit the organization's performance. The literature included will help you learn new things. Considering the foregoing, we can conclude that the study's problem statement is that it is critical to investigate the impact of SCR on the non-alcoholic beverage industry in Sri Lanka's western province.

Research Questions

- Does strategic supplier partnership impact the supply chain responsiveness of beverage companies in Sri Lanka?
- Does customer relationship impact the supply chain responsiveness of beverage companies in Sri Lanka?
- Does information sharing impact the supply chain responsiveness of beverage companies in Sri Lanka?
- Does supply chain management practice impact the supply chain responsiveness of beverage companies in Sri Lanka?

Research Objectives

- To understand the strategic supplier partnership impact on the supply chain responsiveness of beverage companies in Sri Lanka.

- To identify the impact of customer relationships on the supply chain responsiveness of beverage companies in Sri Lanka.
- To understand the impact of information sharing on the supply chain responsiveness of beverage companies in Sri Lanka,
- To evaluate the impact of supply chain management practices on the supply chain responsiveness of beverage companies in Sri Lanka.

Importance of the study

As a practical and important consideration, responsiveness in the supply chain will help the business community's supply chain practices of executives, manufacturers, and managerial levels to improve organizational performance and impact the food and beverage industry and all other manufacturing companies. Theoretically, it is critical for the research community, such as academic research, to study and obtain references that have not yet been explored in Sri Lanka. In comparison to other nations and industries, Sri Lankans have published fewer articles, journals, and papers on the beverage industry, as well as supply chain practices and supply chain responsiveness. Because there are few educational resources available to educate people, this effort is beneficial for current and future improvements in supply chain responsiveness undertaken by manufacturing companies. Researchers can use these findings to conduct additional research with relevant comparisons across industries. And the data would help them gain a better understanding of this study by identifying the various factors, dimensions, and supply chain responsiveness impacts of supply chain practices. The study was useful in interpreting the impact of supply chain management practices on the supply chain responsiveness of non-alcoholic beverage industry in Western province, Sri Lanka. This research will help to close the research gap as much as possible. Aside from that, research findings will contribute to the provision of useful information for future studies.

LITERATURE REVIEW

Supply Chain Management

According to Min and Mentzer (2004), the SCM concept is based on long-term relationships, information sharing, vision, goal setting, risk sharing, cooperating, integration processing, and supplier leadership. Supply chain management (SCM) is defined by supply chain management leaders (CSCMP, 2004) as the planning and management of activities involving suppliers, intermediaries, external service providers, and customers. Fauzi et al. (2017) go on to explain supply chain management implementation in industrialized systems. There is a distinction that

affects both upstream and downstream. Several studies have suggested supply chain management for agricultural supply chain implementations as well. Yildiz et al. (2020) define SCM as four component suppliers: manufacturers, distributors, and retailers linked by financial information frameworks, with required performance analysis and regularly improved monitoring.

Supply Chain Management Practices

SCMP was defined by Min and Menzer (2004) as a long-term relationship, information sharing, and a corporation of integrated supplier leadership. Chen and Paulraj (2004) advocate for a long-term relationship that spans functional teams, supplier reduction ground, and supplier participation. SCMP was defined by Thatte (2007) as supplier partnership, customer relations, and information sharing. The Sri Lankan literature, on the other hand, interprets SCMP as strategic supplier partnership, customer relationship, and information sharing. SCMP has been defined by academic researchers as a key business process of collaboration and integration in purchasing raw materials, manufacturing, and distribution for end users by providing informational value to customers (Lai, C.F. 2018).

Supply Chain Responsiveness

Supply chain responsiveness is defined as the degree to which the supply chain responds to fluctuations in customer demand (Holweg, 2005; Prater et al., 2001; Lummus et al., 2003). Duclos and colleagues (2003). The defined ability of supplier partnerships to react quickly to the current market (Kim & Cavusgil, 2009), as another competitor launches a new product (Fayezi & Zomorrodi, 2015). If supporting supply chain integration is running, supply chain responsiveness must adjust supply chain operations conducted strategically collaboratively under supplier partners and will run optimally in applying SCR (Yu et al., 2019). As a result, suppliers can significantly increase productivity in order to capture customer demand and reduce uncertainties (Siagian et al., 2021). This means that supply chain integration is crucial to supply chain responsiveness.

Strategic Supplier Partnership

The performance of the supply chain is influenced by relationships between two or more firms that facilitate major areas of research, manufacturing, marketing partnerships with suppliers, and information integration (Khan et al., 2015). Responding to challenges in the comparative world as well. SCM is critical in preparing organizations to effectively coordinate supplier partners with long-term positive interaction. SCP is in favor of improving performance with

fewer uncertainties and greater information transfer (Sambasivan et al., 2013). The most important strategy for managing the supply chain is to form strategic partnerships with suppliers.

Customer Relationship

A competitive advantage between manufacturing companies is one of the essential tools. The entire procedure improves customer satisfaction and handling compliance, resulting in long-term customer relationships (Li et al., 2006). And a strategy type is used to identify customer needs, generating consumer loyalty through relationship development, and supplementing necessary products and services. It aids in the reduction of marketing costs as well as the strengthening and improvement of customer relationships (AI-Dmour et al., 2019; Herman et al., 2020).

Information Sharing

To improve the effectiveness of exchanging information systematically, personally, or organizationally, and to increase the need for sharing, each unit should have raised questions about who, what, how, and when to share. As a result, responding to status will help to reduce costs, increase responsiveness, and reduce additional payment costs. Sun and Yen (2005). Different strategically improved networks with advanced information technology can be created to shorten the distance between supplier partners in relationships. The collaboration results in a profitable and advantageous path. According to Min et al. (2005), the heart of SC is IS, and information exchange requires a great deal of understanding and focus. It is a relationship formed between two non-dependent chain components. It is created by increasing the levels of information sharing in order to reduce total costs and inventory. Yu and colleagues (2001). IS, according to Simatupang and Sridharan (2005), is a term that refers to performance analysis, data development, and increased transparency in decision making. Demand forecasting is considered under IS when it is captured, progressed, stored, and presented. In general, only reasonably accurate, trustworthy information shared in a timely manner is used for SCM. Following a review and consolidation of the literature, three dimensions of SCMP, namely SSP, CR, and IS, are identified to lead SCR. According to Khan et al. (2015), supplier partnering and integrated IS have a direct impact on SC performance.

RESEARCH METHODOLOGY

Research Design: This is basically, choosing a study, deciding on a sampling plan, setting a time frame, approaching research, and designing data collection strategies used "quantitative techniques" as the technical method of data collection to answer the questionnaire. The questionnaire collects and analyzes numerical data. A questionnaire was used to collect data from a total sample of 134 executives and above, who were classified by age group, highest academic qualification, current working section, namely production/manufacturing, quality enhancement, inventory and warehousing, supply chain, transporting/distribution, and others. And respondents are classified based on the number of years they have worked in various functions.

Study Setting: Assumes a quantitative viewpoint. The researcher used quantitative methodology for this study by administering a questionnaire to non-alcoholic natural beverage manufacturing company management, executives, and above-level individuals.

Time Horizon: The strategy took into account a sectional time horizon because, depending on the research questions, it focuses only on a specific period rather than a continuous data collection occurrence.

Research Approach: Conducted to determine the impact of executives and above-level employees in Western province manufacturing firms on supply chain responsiveness. Individual data for this study were gathered.

Sampling Plan: This is an important area of research and a subset of the chosen population. Kuma (2011) defines sampling as "the process of selecting a sample (inner part) from a larger group." A sample of executives and above-level manufacturing field employees is chosen for this study.

Study Population: A set of entities for which statistical interference is to be drawn is frequently based on a random sample drawn from a larger section of the population. The population is focusing objectively; the sample reflects the population's characteristics. Executives and above-level employees from Sri Lankan non-alcoholic beverage companies are well-versed in supply chain responsiveness. As a result, managers, executives, and individuals above the level were chosen as the population because they have extensive experience in the profession and are exposed to and use supply chain responsiveness in their work environment.

Sampling Technique: Because this unbiased group and subset of statistical population has an equal probability of being used, the simple random sampling method is used as the sampling method. According to Philip and Adrian (2007), to technically rationalize data collection, appropriately technique-banned objectives, personnel, or events must be used. During the sampling procedure, researchers attempt to identify the area to be studied by taking into account the entire population (Kumar, 2011).

Sampling Frame: This study's sampling frame consists of non-alcoholic beverage companies registered with the Export and Development Board in Sri Lanka's Western province.

Sample Size: One hundred thirty-four (134) people make up the sample size. Questionnaires are distributed randomly to individuals by randomly identified managers, executives, and individuals above levels working for non-alcoholic beverage manufacturing companies in Western provinces via the LinkedIn platform.

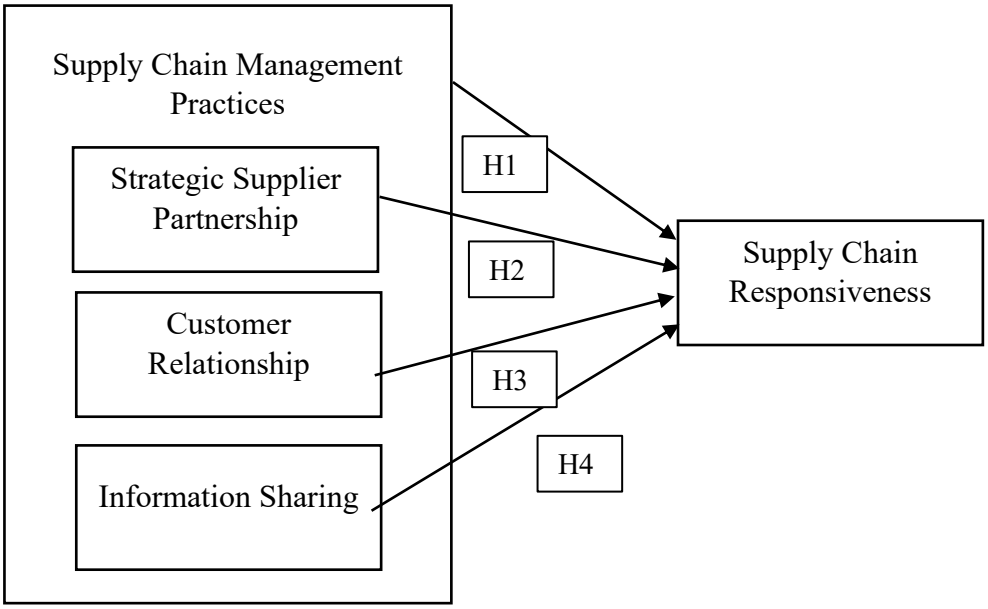
Data Processing: A questionnaire is used to collect data, and 134 samples are classified by job title; respondents are classified by job function: production, operation, or manufacturing. Quality improvement, inventory and warehousing, supply chain, transportation and distribution, and other services are all available. From beverage manufacturing companies registered with the Export and Development Board of Sri Lanka in the Western Province districts of Gampaha, Colombo, and Kalutara. This study relied on primary data derived from structured questionnaire responses. Questionnaires were distributed via email to the targeted sample. The questions are closed-ended and use a 5-point Likert scale. As a result, variables in the research model (Sahibzada Jawad et al., 2020) were measured using the "Five Point Likert Scale," and demographic facts were measured using the "Nominal Scale," which was completed by the respondents based on their responses to all questions.

Survey Instrument: Personal information from 134 respondents was collected using nominal measures, which included "gender, age, highest academic qualification, current work sector, and working experience." The second section of the questionnaire is dedicated to research data. Perceived determinants of supply chain responsiveness adoption using questions developed by researchers with the assistance of other related literature reviews Here are thirty-four (34) statements to assess both independent and dependent variables using a "Five-Point Likert Scale."

Data Presentation Method: According to Junyong and Lee (2017), data presentation is like summarizing, processing, and analyzing raw data by utilizing powerful communication tools such as textures, graphs, and tables. Most research yields perfect conclusions and results from analyzing all available data; if the research does not yield results, carrying out the study is pointless and has no benefit. The most delicate aspect of research is data analysis. This investigation as statistical tables are a vital area of focus, a graphical display of information to have a clear insight into commanding effectively to have effect, this paper contains tables to explain the collected data from the respondents.

Method of Data Analysis: To determine the frequencies and percentages of survey responses from the sample, collected quantitative data was analyzed using "Statistical Package for Social Sciences" (SPSS) version 23. As a result, the analyzing techniques of correlation, simple regression, and multiple regression are used.

Figure 1: Conceptual Framework



Source: Developed by researcher based on (Sukati, et al., 2011), (Bekele, 2021)

H1: Supply chain management practices are positively related to supply chain responsiveness.

H2: Strategic supplier partnership is positively related to supply chain responsiveness.

H3: Customer relationship is positively related to supply chain responsiveness.

H4: Information sharing is positively related to supply chain responsiveness.

DATA ANALYSIS

Analysis of Reliability

Cronbach's alpha was used to assess the dependability of the instrument. Through the instrument's strong internal consistency and reliability (alphas), the content instrument indirectly ensures conceptualization and operationalization of the variables based on literature. Table 1 shows the Cronbach's alpha test results, which show that the internal reliability of each instrument was adequate to satisfactory. "Table 1" showed "independent variable reliability" and "dependent variable reliability." Variables in their entirety Cronbach's Alpha Co-Efficient factor analysis for supply chain management practices (SCMP), strategic supply partnership (SSP), information sharing is 0.865, and the factor of dependent variable shows a reliability of operation system responsiveness of 0.840, logistic responsiveness of 0.800, and supplier network responsiveness of 0.889.

According to Journals Mantik 2022, Cronbach's alpha value of 0.600 is declared reliable in the results and discussion section reliability test of all variables. Cronbach's alpha for the dependent instrument should be greater than 0.700. If the Cronbach's alpha value is greater than 0.700, the internal consistency of the scale is considered "satisfactory" (Sekaran and Bouch 2016). Cronbach's alpha coefficient values for total variables are also greater than 0.800 in this research study. As a result, it was suggested that the items be considered dependent, indicating that the internal reliability of each instrument (Table 1) was satisfactory.

Table 1: Reliability Analysis

Variable		Cronbach's Alpha Value	Number of Question Items
Supply Chain Management Practices	Strategic Supply Partnership	0.873	06
	Customer Relationship	0.888	05
	Information Sharing	0.865	06
Supply Chain Responsiveness	Operation System Responsiveness	0.840	06
	Logistic Process Responsiveness	0.820	05

	Supplier Network Responsiveness	0.889	06

Source: Survey data

Analysis of Validity

Table 2: Validity Analysis

Variable	Kaiser- Mayer Olkin	Number of question items
Analysis strategic supply partnership	0.849	06
Analysis customer relationship	0.863	05
Information sharing	0.823	06
Operation system responsiveness	0.662	06
Logistic process responsiveness	0.705	05
Supplier network responsiveness	0.789	06

Source: Survey Data

The validity analysis is used to ensure the adequacy of the sampling and to evaluate the appropriateness of using factor analysis. It should be significant (less than 0.05) with a p-value of 0.001, indicating a significant deviation from an identity matrix in which no two variables are associated. More than 0.60 on the "Kaiser-Meyer-Olkin Scale" indicates that each factor has enough items (Table 2).

Demographic Data Analysis

Descriptive analysis was used to examine demographic and personal information. The information gathered on individual characteristics is presented and analyzed in the following presentation and analysis. The personal information questions pertain to the respondent's significant personal information, which includes gender, age, highest academic qualification, currently working sector, industry of employment, year of experience, and company location.

The sample responses were divided into male and female responses. Males were given a weighting of 70.9% when selecting the sample for the research study, while females were given a weighting of 29.1%. The questionnaire was distributed at random to male and female participants (Table 3).

Table 3: Gender

Gender	Frequency	Percent
Male	95	70.9 %
Female	39	29.1%
Total	134	100%

Source: Survey Data

The sample includes people aged 20 to 30, 31 to 40, 41 to 50, 51 to 60, and over 60 years. As shown in Table 4, the age group between 31 and 40 is given the most weight in the sample because it accounts for the largest percentage of the total population (38.8%). And no one over the age of 60 has responded.

Table 4: Age

Age level	Frequency	Percent
20-30	49	36.6%
31-40	52	38.8%
41-50	26	19.4%
51-60	7	5.2%
Above 60	0	0%
Total	134	100%

Source:Survey Data

There are five categories of academic qualifications: highest academic qualifications under GCE A/L or London A/L; diploma; degree; postgraduate; and doctorial. There are no doctorial qualifications, so two respondents with 1.5% weight in GCE A/L and London A/L qualification have the lowest weight (Table 5).

Table 5: Highest Education Qualification

Highest Education level	Frequency	Percent

GCE A/L or London A/L	2	1.5%
Certificate / Diploma	17	12.7%
Degree	85	63.4%
Postgraduate	30	22.4%
Doctorial	-	0%
Total	134	100%

Source: Survey data

The sample was classified as follows in Table 6: production, operation, manufacturing, quality enhancement, inventory and warehousing, supply chain, and transport/distribution. The department of production, operation, and manufacturing has the most respondents (79), accounting for 52.2% of the total sample, while the department of transporting and distribution has the fewest (accounting for 6.7% of the total sample).

Table 6: Currently Employed Sector

Sector currently employed	Frequency	Percent
Production/Operation/Manufacturing	70	52.2%
Quality Enhancement	20	14.9%
Inventory and Warehousing	24	17.9%
Supply Chain	11	8.2%%
Transporting / Distribution	9	6.7%
Total	134	100%

Source: Survey of data

The data in Table 7 shows the company location of the sample, which is in the Western province and registered with the Export Development Board in three district levels: Gampaha, Colombo, and Kalutara. The Gampaha district has the highest proportion of survey respondents. That translates to 88 frequencies and 65.7 percent of the total population. The Kalutara district had the lowest frequency at 6.0 percent and eight frequencies out of the 134 respondents.

Table 7: Company Location

Years of Experience	Frequency	Percent
Gampaha	88	65.7%
Colombo	38	28.4%
Kalutara	8	6.0%
Total	134	100%

Source: Survey of data

Data on years of experience were collected as 1-5 years, 6-10 years, 11-15 years, and more than 15 years. The highest frequency (67 respondents) of respondents have experience between 1 and 5 years, and 33.6% have experience between 6 and 10 years. 14.2% of respondents have experience ranging from 11 to 15 years. The remaining 2.2% of respondents have worked with the experience for more than 15 years, with the fewest (2 respondents) (Table 8).

Table 8: Years of Experience

Years of Experience	Frequency	Percent
1-5	67	50%
6-10	45	33.6%
11-15	19	14.2%
Above 15	3	2.2%
Total	134	100%

Source: Survey of data

Correlation Analysis

Table 9: Correlation Analysis

	Strategic supplier partnership	Customer relationship	Information Sharing	Supply chain Management practices
Pearson correlation (r)	0.512	0.618	0.701	0.697
Significance level (p)	0.000	0.000	0.000	0.000

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

Source: Survey Data

The correlation is significant at 0.01 (2-tailed), and it is considered strong when the coefficient (r) exceeds 0.5 (0.5p). Table 9: Pearson correlation results show a strong positive relationship (Table 6) between SCR and SCM methods [r = 0.697]. As previously stated, SCR and IS have a strong positive relationship (r = 0.701), SCR and CR have a strong positive relationship (r = 0.618), and SCR and SSP have a medium positive relationship (r = 0.512). As a result, there is a significant positive correlation relationship, and all of the significance levels (p) are 0.000 (p 0.01).

Simple Regression Analysis

Table 10: Regression Analysis

	Strategic Supplier Partnership	Customer Relationship	Information Sharing	Supply Chain Management Practices
R	0.512	0.618	0.701	0.697
R Square	0.262	0.382	0.491	0.486
Adjusted R Square	0.256	0.377	0.487	0.482
Std. Error	0.32952	0.30153	0.27370	0.27509
Sum of Squares	5.087	7.419	9.532	9.431
F	46.848	81.594	127.248	124.300
Sig. F	0.000	0.000	0.000	0.000
T	6.845	9.033	10.276	6.860
Sig. T	0.000	0.000	0.000	0.000
B- Constant	2.434	2.164	1.998	1.594
B-	0.415	0.479	0.538	0.622
Beta	0.512	0.618	0.701	0.697

Source: Survey Data

According to Table 10, Regression Equation:

SCR = 2.434 + 0.415 SSP

At 5% [Sig. T = 0.000], the value "b", regression gradient 0.415, is significant. SCR variance of 26%, denoted by "R Square," discussed by strategic supplier partnership with 0.512

standardized beta, "F = 46.848, significant at 5% [p = 0.000], interpreting strategic supplier partnership significantly evaluated SCR variance of 26%.

SCR= 2.164 + 0.479 CR

The 'b' gradient regression coefficient is 0.479, which is significant at 5% [Sig. T = 0.000]. With a normalized beta of 0.618, CR explains 38% of the variance in SCR, according to R squared. The "F" value is 81.594, which is 5% significant, indicating that customer relationships account for 38% of the variance in supply chain responsiveness.

SCR= 1.998 + 0.538 IS

At 5% [Sig. T = 0.000], the value "b", regression gradient 0.538, is significant. Strategic supplier partnership significantly evaluated 49% of SCR variance, as denoted by "R Square," with 0.701 standardized beta, "F = 127.248, significant a 5% [p = 0.000].

SCR= 1.594 + 0.622 SCMP

The 'b' gradient regression is 0.622, which is significant at 5% [Sig. T = 0.000]. With a normalized beta of 0.697, CR explains 49% of the variance in SCR, according to R squared. The "F" value is 124.300, indicating that customer relationships explain 49 percent of the variance in supply chain responsiveness.

Multiple Regression Analysis

Typically, a multiple regression analysis is used to create a regression equation for predicting dependent variables from a set of independent variables (Elliot and Woodward, 2016).

Supply chain Responsiveness (SCR) = 1.643 – 0.156 SSP + 0.206 IS+ 0.568 SCMP

SCR was found to have a positive relationship with three variables, including information sharing and supply chain management practices, but SSP had a negative relationship with SCR. Interpreting SCMP output is critical for high-level SCR consideration. Beta 0.636, 0.015 (p 0.05) is a significant standardized coefficient. (Table 12)

Table 11: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.729[a]	.532	.521	.26436

A. Predictors: (Constant), Supply Chain Management Practices, Information Sharing, Strategic Supplier Partnership

Source: Survey Data

Table 12: Coefficient Table

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.643	.225		7.308	.000
	Strategic Supplier Partnership	-.156	.133	-.192	-1.176	.242
	Information Sharing	.206	.119	.268	1.731	.086
	Supply Chain Management Practices	.568	.230	.636	2.470	.015

A. Dependent Variable: Supply Chain Responsiveness

Source: Survey Data

R squared (R2) = coefficient assumes that all independent variables help to explain the variation in the dependent variable in the model. It represents the percentage of explained variation because all independent variables in the model had an effect on departmental variation. An R2 representing the regression line perfectly fit the data. Adjusted R squares of 0.532 and 0.521 denote high-degree regression with properly fixed insight, according to the R square (R2) construct. This meant that the regression model could account for approximately 53% of the variance in the dependent variable (Table 11).

Hypothesis Testing

Table 13: Status of Hypothesis testing

Hypothesis	Status
H1: Supply chain management practices are positively related to supply chain responsiveness	Accepted

H2: Strategic supplier partnership is positively related to supply chain responsiveness	Accepted
H3: Customer relationship is positively related to supply chain responsiveness	Accepted
H4: Information sharing is positively related to supply chain responsiveness	Accepted

DISCUSSION

The research reported in this paper aimed to advance understanding of supply chain management techniques by examining the connections between customer relationships, information exchange, and supply chain responsiveness. By developing and testing the research framework of SCMP and SCR constructs and conducting valid, reliable instrument analysis of several manufacturing organizations, this study investigated the relationship between strategic supplier partnerships and supply chain responsiveness, customer relationship and supply chain responsiveness, information sharing and supply chain responsiveness. The research looked into competitive advantage and SC techniques.

In general, this research contributes to our understanding of how SCM methods work, supply chain responsiveness, and the competitive advantage of businesses in the SCM industry. It began by proposing a theoretical framework for SCM procedures that emphasized the firm's competitive advantage, customer relationships, and information exchange. Second, this research provides supply chain managers with a valuable tool for auditing and evaluating supply chain management procedures. Third, the research provides theoretical and applied literature on supply chain management techniques, supply chain responsiveness, and firm competitive advantage.

Fourth, findings support the notion that improved supply chain management procedures improve supply chain responsiveness and competitiveness. As business captures more, competition shifts from among enterprises to among supply chain partners. According to the findings of the Sukati et al., 2011, 47% of respondents stated that their company had not begun a program specifically for SCM implementation. The remaining 53% of respondents said their company only implemented SCM programs twice a year.

The study resulted in practitioners' confidence, collaborating application of significant impact under competitive advance, and the supply chain responsiveness of the organization. Firms must be more responsive in fast-paced global competitiveness to meet client expectations.

In addition, the company must be responsive on all fronts, including supplier, internal, and downstream. With terms like interchangeability, the concept of "supply chain responsiveness" is complicated. The findings demonstrate to practitioners the critical elements of responsiveness and how to achieve them. It provides firms with a set of reliable and useful metrics for assessing, measuring, and comparing supply chain responsiveness at various supply chain nodes such as raw material suppliers, component suppliers, assemblers, sub-assemblers, producers, distributors, retail sellers, and whole sellers. SCR facts enable practitioners to identify immediate effects and comprehend organizational performance effects. Dillwyn (2022) developed Hypothesis No. 5: supply chain responsiveness has a direct impact on operations and has a direct, significant positive relationship. According to Ambreen (2013), strategic supplier partnerships have a significant positive impact on company performance (b value 0.317, $p = 0.002$). Sukati et al. (2011) investigated supply chain management practices under four hypotheses: H1: Supply chain management practices are positively related to supply chain responsiveness, H1a: Strategic supplier partnership is positively related to supply chain responsiveness, H1b: Customer relationship is positively related to supply chain responsiveness, and H1c: Information sharing is positively related to supply chain responsiveness. Accordingly, the findings of this research can be identified as being in line with the findings of previous scholarly research.

CONCLUSION AND RECOMMENDATION

The research concentrated on supply chain management techniques and responsiveness. SCR was the dependent variable, and the independent variables were SSP, CR, and IS. The effect of supply chain management practices on the relationship between supply chain responsiveness can be summarized as information sharing builds a significant and strong relationship to maintain the quality of the information sharing process between the manufacturing company and supplier on demand for production, information sharing on sales marketing, and promotions with the use of the manufacturing company's information sharing. The relationship between information sharing, which was the most important indicator of supply chain responsiveness, was also taken into account, followed by customer relationships and strategic supplier partnerships. Increased information sharing and responsiveness in the supply chain. Based on these findings, managers should improve information sharing to improve supply

chain responsiveness and firm performance. Manufacturing firms should increase their investment in information technology facilities to improve information sharing both internally and externally. Renting information technology specialists, third-party outsourcing to improve trending supply chain relationship behavior to strengthen strong customer relationships, and continuous information sharing make anything possible. This study recommended that manufacturing companies develop information flow through proper information collection, storage, and recording systems by adhering to their own enterprise resource planning system for fruitful all transactions in information transparency.

Customer relationship has a strong relationship and a positive association, and it includes meeting customer needs, evaluating the importance of the relationship between customers and manufacturing products, assisting customers in maintaining reliability and responsiveness, measuring customer satisfaction levels, observing future customer expectations, and assisting in reaching product consistency, all at regular and frequent intervals. This enables manufacturing companies to maintain continuous production while also establishing and ensuring proper supply chain processes, such as production, packaging, and finally delivering to customers. Through communication and standardization of everything, including suppliers, lean supply creates strategic supplier relationships. Because of the potential for various improvements, suppliers are always aware of the status of their supplier relationships. Recommending that the marketing department of the organization develop customer relationships through continuous information sharing and mentoring customers in order to increase market research and responsiveness. It should be done a mammoth on the entire production to improve supply chain responsiveness in logistics. As a result, using standard trucks or similar alternative vehicles to transport raw materials and distribute finished goods can help improve product quality and supply chain efficiency.

Strategic supplier partnership has a significant positive relationship with various supplier selection criteria. Regarding raw material quality, the company assists suppliers in developing raw material quality on a continuous basis by establishing short-term and long-term relationships and transitioning to a long-term supplier relationship with time, training suppliers to minimize lead time in every single action in which the supplier's contribution stages are achieving product quality. A better supplier rating strategy is beneficial to the success of the strategic supplier partnership in terms of affordable consistency.

The results of correlations between supply chain management strategies in terms of strategic supplier partnership, customer relationship, and information sharing were discovered to be linked to supply chain responsiveness in terms of operation system responsiveness, logistic process responsiveness, and supplier network responsiveness in this study. This study discovered significant associations between strategic supplier partnership, operation system responsiveness, logistic process responsiveness, and supplier network responsiveness. Taking into an account all the cases, manufacturing companies are better able to focus on supply chain management practices for further efficient and effective improvement of product quality and fulfillment of customer expectations in order to grasp business sustainability and success.

Limitation and Future Research Directions

First, when using the simple or basic random sampling method on beverage companies in Western Sri Lanka, a sampling error can occur; samples do not precisely reflect the population that is expected to be present. Second, this study focuses on a specific limited time period rather than a continuous data collection occurrence. As a result, future research can perform the same function as a longitudinal study. Third, due to the small number of publications, the revalidation of the creature was not performed as part of this study. Fourth, respondents were asked to address difficult supply chain management issues involving both upstream and downstream suppliers. However, no single person is in charge of the entire supply chain process; production managers are primarily responsible for production and may be unable to handle customer-related questions. As a result, a single response may result in some measurement errors.

The current study set out to look into Sri Lanka. The first direction of this study focused solely on supply chain management factors. As a result, additional studies can be carried out by introducing new variables. Second, the study only included beverage manufacturing enterprises located in Western province, Sri Lanka that were registered with the Export Development Board. As a result, the scope of the research can be expanded to include more provinces in the future, making it more effective. Further, it is proposed that same study can be conducted as a longitudinal study to explore the impact of changes in the industry over a period.

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