

To Study an Organizational understanding of the transformation needed for Sustainable Supply Chain Management

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Abstract: In recent years, supply chain management (SCM) has been a critical element in the construction sector to increase manufacture and output. Contractors, vendors, and customers all play significant parts in creating and expanding SCM and cooperation in the building industry. In this research paper the partnership between contractors, their vendors, and their clients was examined to determine the value of SCM from the viewpoint of contractors and employees. The discrete views of the contractors and employees have also been investigated to obtain special data on the topic. In this research paper a survey was used to collect data. This technique was selected because quantitative investigation offers calculable data in a numerical design that can be used to simplify research outcomes using statistics. Data was composed using a consistent questionnaire from staffs in the construction industry nominated from various registered firms in the construction sector. The approach was chosen because the aim of the project was to look at the effectiveness of supply chain management in the construction industry. The questionnaire was framed around Supply Chain Management Practices, Supply chain Integration, Supply Chain Flexibility Performance, Supply Chain Resource Performance and Supply Chain Output Performance. From the results acquired, some solutions can be anticipated for the operative use of SCM for optimum construction enactment as well as highlighting some critical points escaping optimum efficiency and output in the construction business.

Keywords: *SCM, Contractors, Survey, Efficiency, Performance, Construction Industry, Output, Investigation.*

INTRODUCTION

This theory examines and analyzes Supply Chain Management (SCM) in the Indian construction industry, with an emphasis on the relations between major contractor firms, their vendors, and their customers, with the intention of determining those consequences for best construction efficiency. It is common knowledge that the building industry is made up of an enormous number of players, each with their own project supply chain and demand (O'Brien et al., 2002). Contractors, their vendors, and their customers are also big performers in this industry. The associating relationships among these players are scrutinized in this analysis, since a firm's supply chain partners can well decide the company's success (Chopra and Meindel, 2007).

The questionnaire method was designed to show how knowledgeable contractor companies were about SCM. The parties' partnership arrangements were surveyed to see whether they are really aware of the worth of those reciprocal partnerships or whether contractors are ignoring them. According to Saada et al. (2002), construction partnering turned around three central principles: deciding on collective objectives; making choices freely and addressing issues in a manner that was cooperatively decided upon at the fricht of the project; and striving to produce significant efficiency gains by rewards. Contractors, vendors, and customers all have a role to play in adhering to these main standards. To begin, contractors should understandably appraise their partners' plea during the project, which is critical for a fruitful relationship between a contractor and its partners and the improvement of a well-established and defined SCM. Companies must align the interests of consumers with those of vendors and stakeholders in order to reach the high degree of cooperation necessary to synchronize the supply chain (Martella, 2000).

To strengthen cooperation, it is important that all parties should communicate with one another. One of the foremost complications of the manufacture industry, according to Elliman and Orange (2000), is its fractured and confrontational nature, which is a major dynamic leading to poor coordination among all parties involved in a construction project.

The amount of achievement of the main values is determined by the level of contact and knowledge sharing among contractor firms, their suppliers, and their regulars. Businesses must strike a balance between transparent collaboration and responsible information sharing, in addition to harmonizing the interests of consumers and suppliers (Martella, 2000).

For the building industry, supply chain technology is also in its early stages. Many hurdles need to be met while supply chain management progresses in construction as they are still in their infancy (Cox and Townsend, 1998). The barriers to maximum production and competitiveness in the construction industry were investigated, and some assumptions for the Indian construction industry were drawn in order to expand construction success.

OBJECTIVES OF THE STUDY

This paper has an objective to examine the understanding and the approaches of main contractors regarding the acuity of Supply Chain Management in Indian construction industry with extraordinary importance on their relationship to their suppliers and customers.

RESEARCH METHODOLOGY

With inspiration from previous supply chain research, a questionnaire form was created to define and address the views and viewpoints of contractors concerning the enactment of SCM in the construction industry. A three-page questionnaire with a knowledgeable consent letter was sent to Indian contractors who were unsystematically chosen for this research. Questionnaire forms were sent via e-mail, as researchers have pointed out numerous benefits of e-mail surveys over postal mail surveys, particularly in terms of speed and cost efficiency (Sheehan, 2006). To assess the effectiveness of contractor firms' supply chain

strategies, the questionnaire form was profoundly concentrated on their relationships with their vendors and clients. The 7-point Likert scale was used to paradigm the questionnaire shape: '7' refers to "Extremely Better" or "Extremely Agree" and '1' refers to "Extremely Worse" or "Extremely Disagree".

The face to face interviews were not possible due to the current covid situation. This approach was selected because online surveys are relatively easy to conduct and collect information in less time. They are both cost-effective and gather a wide variety of information. The study's selected participants were given 120 invitations to participate in the online survey by the researcher. The consent of the participants was first requested, and they were told that the survey was fully voluntary. When collecting all of the demographic members for a survey is daunting, as it is in this situation, using a sample to represent a population is not only budgetary, but also prudent. As a result, selecting a random sample for the present analysis would have been challenging, if not impossible, since some of the respondents were unable to complete the questionnaires.

Business Description of the company

The majority of those who responded said that the business description of their company is Consumer Electronics (22%), according to a pie chart representation of the findings. And the least selected was Information communication and technology product (19%).

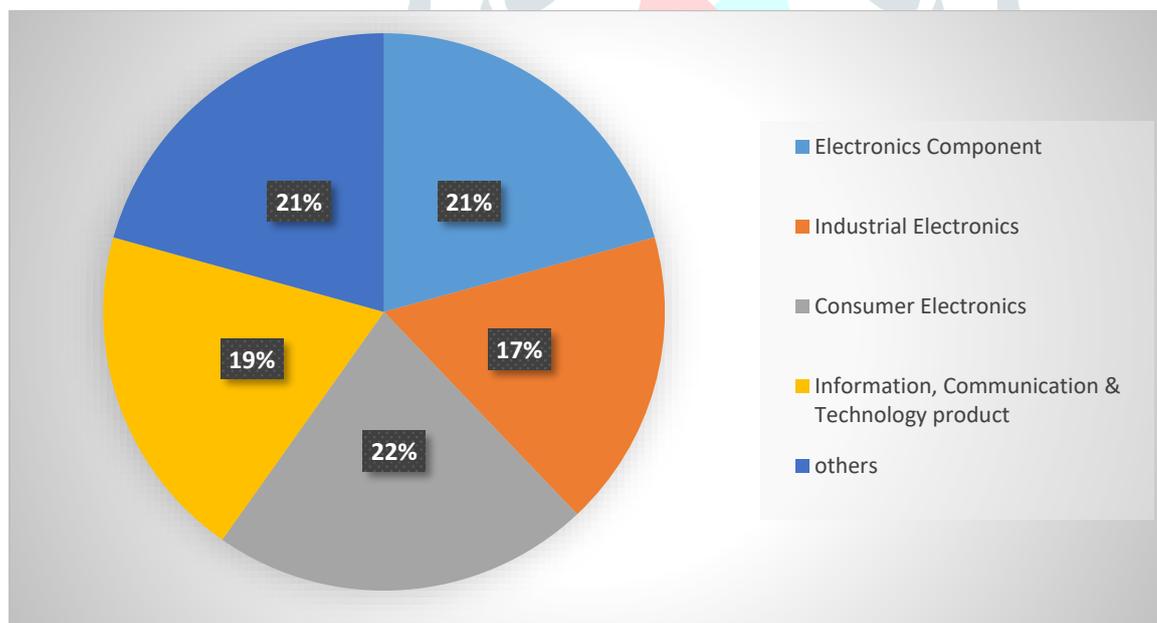


Figure 1: Business Description of Company

Numbers of Employees in your company

Since this is the important factor in the working of any organization, most of the respondents said that their company was having 250-500 employees (28%) for the successful implementation of the supply chain management. Followed by 100-250 employees (27%). And the least option selected by all the respondents was more than 500 employees (12%) as shown in the figure 2.

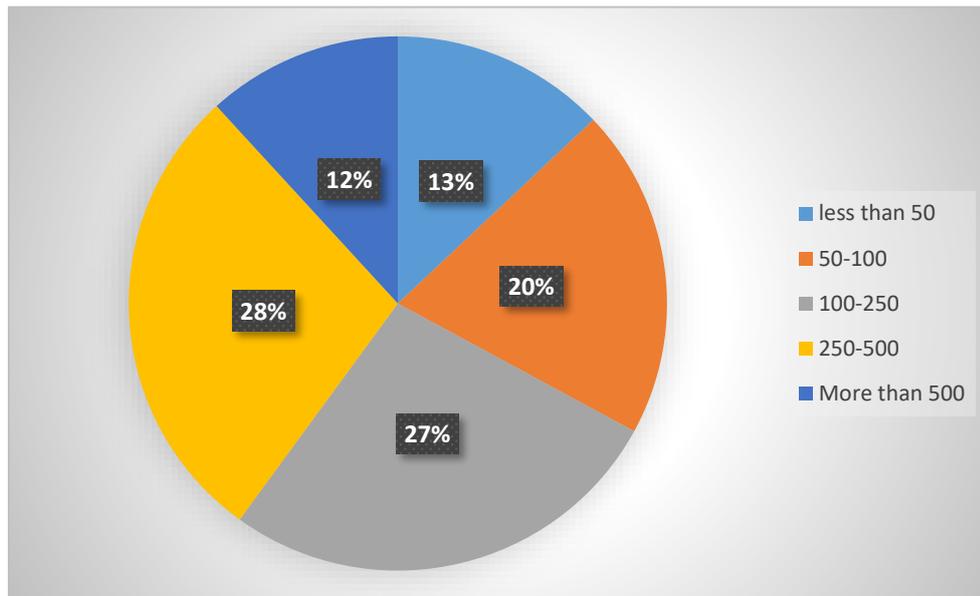


Figure 2: Number of Employees in your company

Supply Chain Management Practices

The understanding and the approaches of main contractors regarding the acuity of Supply Chain Management in Indian construction industry were examined with extraordinary importance on their relationship to their suppliers and customers. The worth of supply chain management for these businesses was determined by inspecting their relationships with their vendors and customers. The basic concept of SCM is the reciprocal bond. One of the key issues determining the amount of achievement in the construction industry is the degree and reliability of relationships with members of the supply chain, including contractors, vendors, and customers. The 7-point Likert scale was used: '7' refers to "Extremely Agree" and '1' refers to "Extremely Disagree". And the graph in figure 3 shows that the answers by the maximum respondents were on positive side that is Extremely Agree, Strongly Agree and Agree. And the responses of the companies show a very good relationship with their suppliers and customers as shown in figure 3. Very less responses were given to extremely disagree and strongly disagree. Average ratings of all the questions were also calculated using Excel.

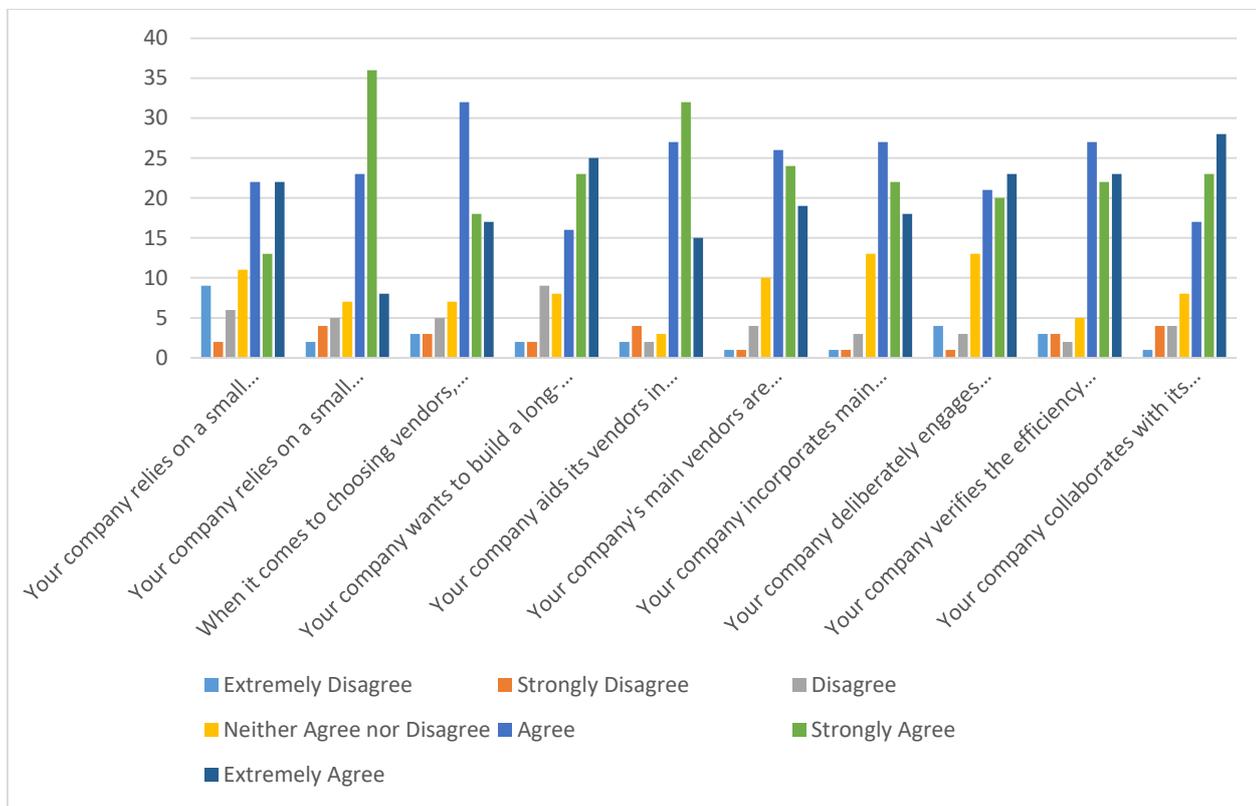


Figure 3: Supply Chain Management Practices

After calculating the Average ratings of the responses, the current study's findings indicate that the maximum respondents have given maximum positive response on solving problems jointly with their suppliers which makes their relationship more strong.

Performance of the Supply Chain Flexibility

Ability to respond to and satisfy fluctuations in demand, such as seasonality. Capacity to respond to and withstand low production productivity periods, such as when a device fails. Capacity to respond to and accommodate periods of poor supplier efficiency, as well as the capacity to respond to and accommodate periods of poor delivery execution and Ability to adapt to and react to emerging technologies, markets, or competitors were among the concerns expressed by respondents.

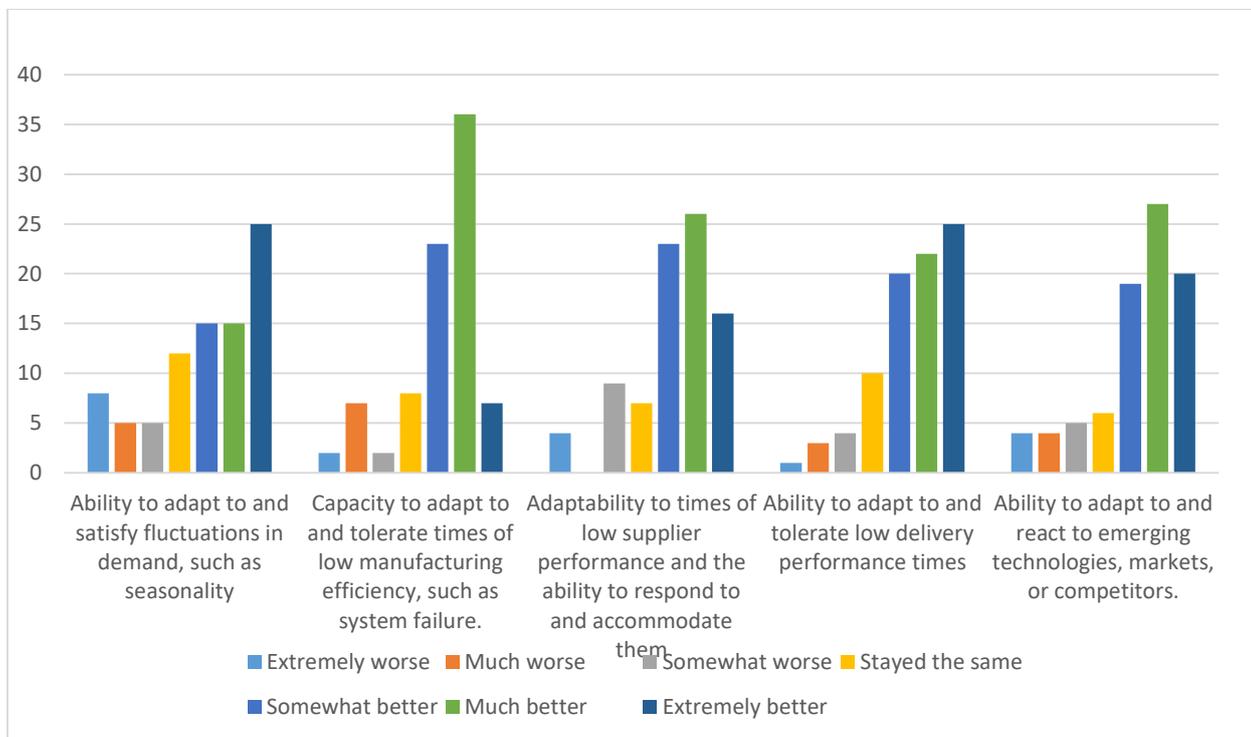


Figure 4: Performance of the Supply Chain Flexibility

The 7-point Likert scale was used: ‘7’ refers to “Extremely better” and ‘1’ refers to “Extremely worse”. And the graph in figure 4 shows that the answers by the maximum respondents were extremely better, much better and somewhat better which again shows the positive response. And a very less responses we got for extremely worse, much worse and somewhat worse.

Programs currently in use to help Supply Chain Management

3PL, Subcontracting and Supply chain Benchmarking Vertical Integration are some of the programs that are being currently used for supply chain management. Figure 5 provides a graphical representation of the findings, where Maximum respondents (47) choose subcontracting as the program that is being currently used in their supply chain Management. Followed by Supply chain Benchmarking Vertical Integration (46) and less no of respondents choose 3PL (35).

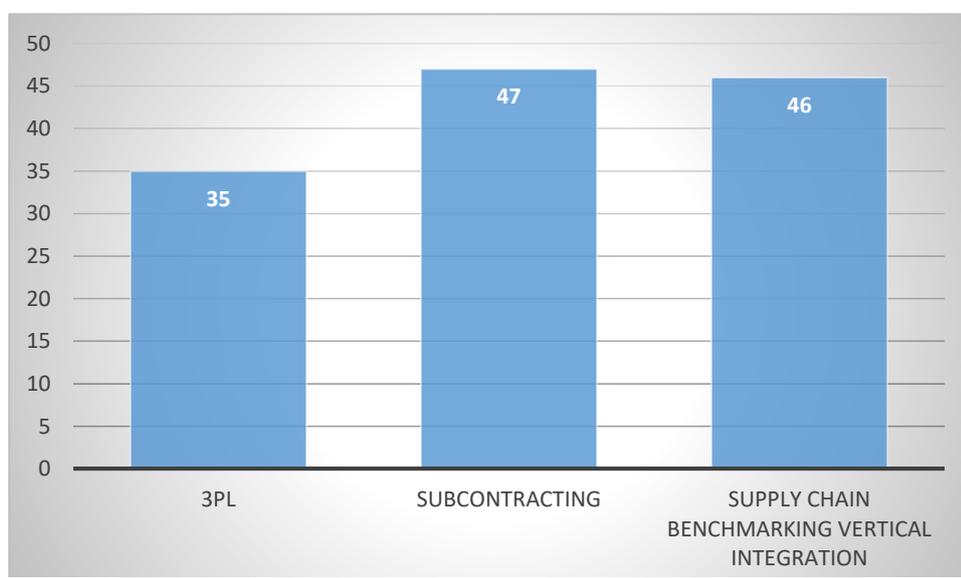


Figure 5: Programs currently in use to help SCM

Performance of Supply Chain Resources

Total price of assets used, total cost of supply including shipping and handling, total cost of production including labor, repair, and rework, total cost of manufacturing Costs associated with products on hand and Return on investment were among the concerns expressed by respondents.

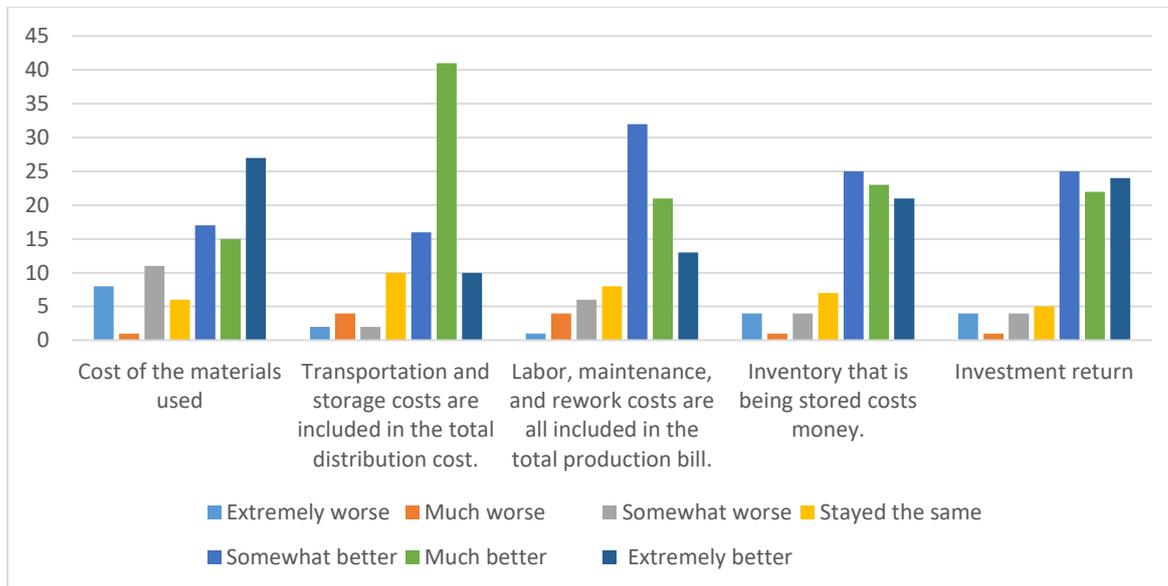


Figure 6: Performance of Supply Chain Resources

After calculating the Average ratings of the responses, the current study's findings indicate that the maximum average ratings is for return on investment. All the respondents have given their positive responses to return on investment. And the least average ratings is for total cost of resources used as calculated by excel.

Supply Chain Output Performance

‘Sales’, ‘Order fill rate’, ‘on time deliveries’, ‘Customer response time’, ‘Shipping errors’, ‘Manufacturing lead time’ and ‘Customer complaints’ are main purposes affecting the efficiency of supply chain relation. Respondents were asked to rate the functions between extremely better to extremely worse. Figure-7 indicates the results of this question.

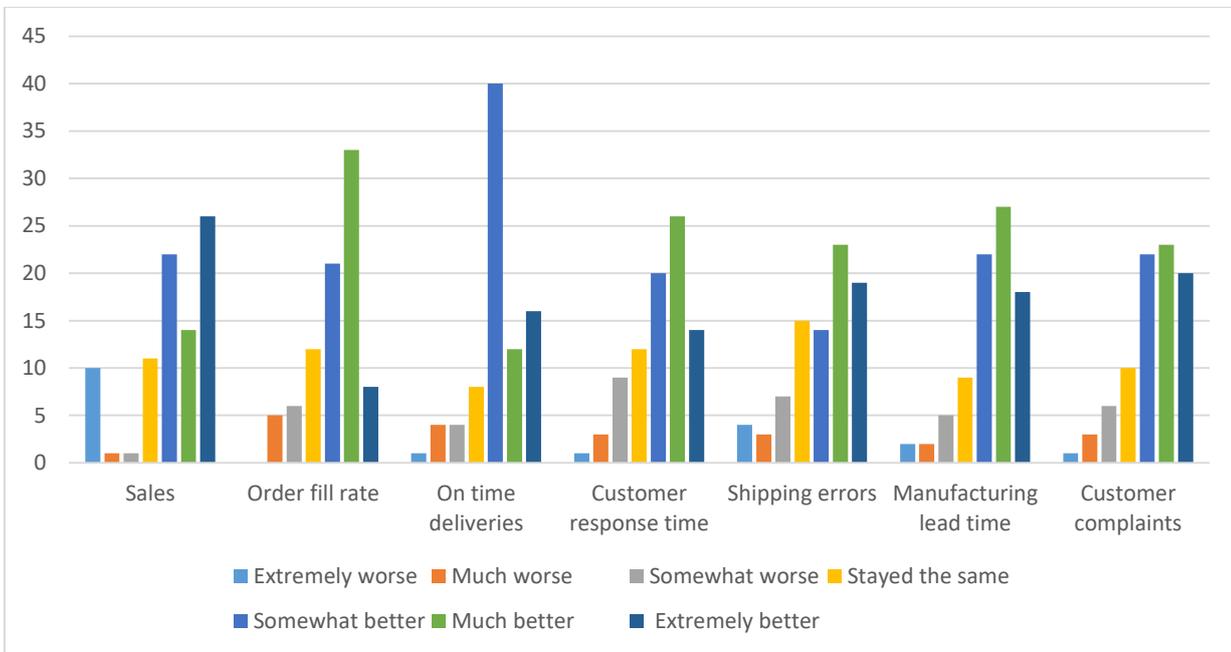


Figure 7: Supply Chain Output Performance

After calculating the Average ratings of the response the maximum average rating was for manufacturing lead time. And the lowest was for shipping errors.

Management of supply chain of organization

Different organizations use different methods or techniques to manage their supply chain. Whatever works for their organization they use that method.

Maximum respondents choose outsourcing for the management of their Organization followed by many suppliers technique. And the least selected by the respondents was JIT supply.

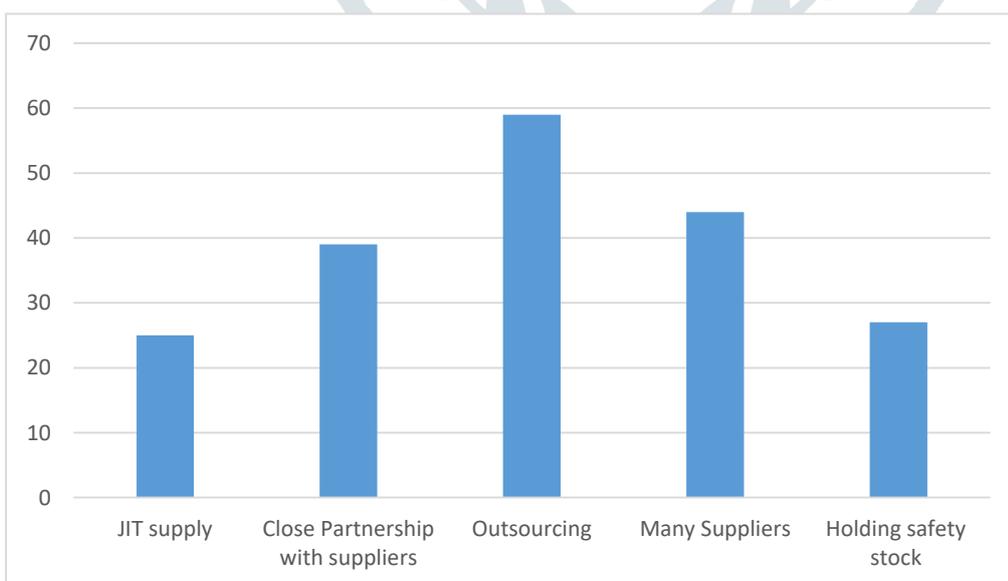


Figure 8: Management of supply chain of Organization

As shown in figure 8 maximum respondents choose Outsourcing (59) for their organization after that many suppliers (44) was chosen followed by Close partnership with suppliers (39) and the least one selected by the respondents for their organization is JIT supply.

SUPPLY CHAIN INTEGRATION

Finally, the respondents were asked to comment on the communication that they had with each other. As communication with the suppliers is very important in successful integration of supply chain management and will help to build a strong relationship between the suppliers and contractors. Maximum responses were on positive side as shown in figure 9. Many respondents claimed that their communication with their suppliers is very good.

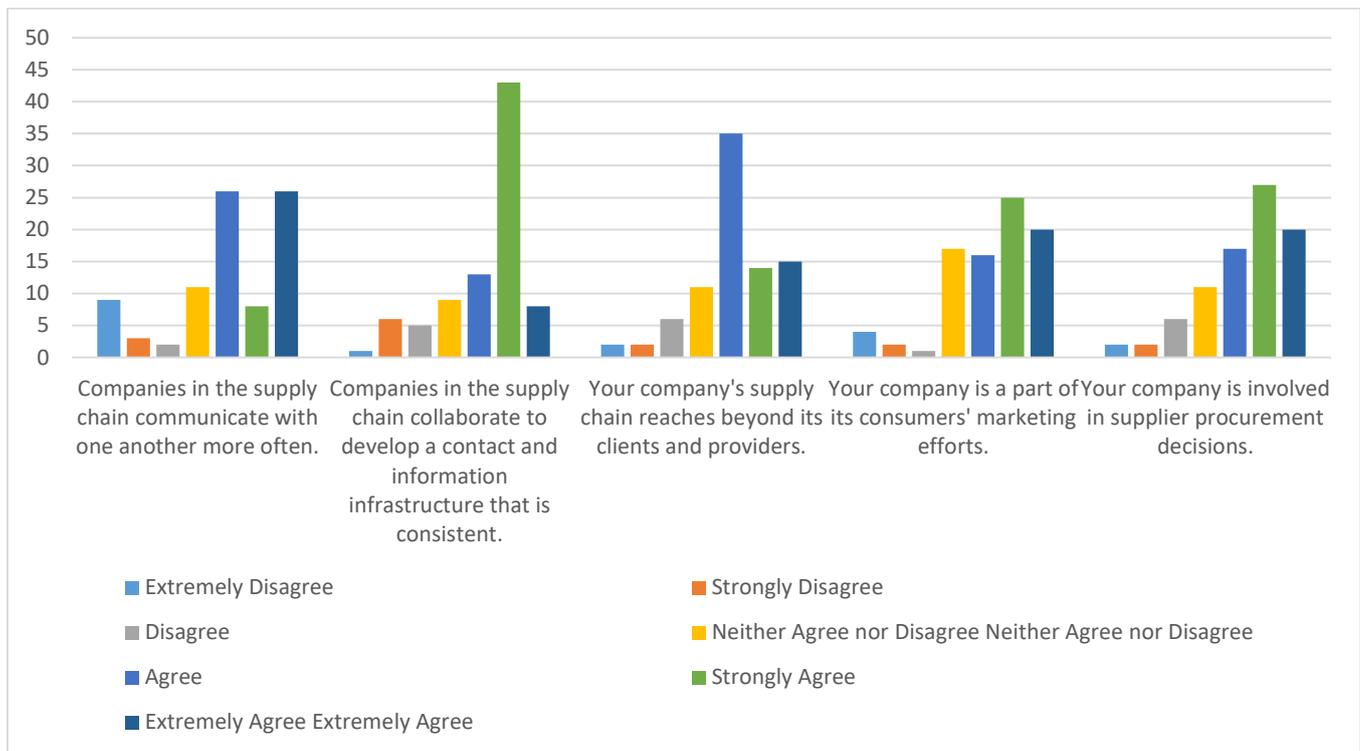


Figure 9: SUPPLY CHAIN INTEGRATION

The 7-point Likert scale was used: ‘7’ refers to “Extremely Agree” and ‘1’ refers to “Extremely disagree”. And the graph in figure 9 shows that the answers by the maximum respondents were extremely agree, strongly agree and Agree which again shows the positive response. And a very less responses we got for extremely disagree, strongly disagree and disagree. After calculating the Average ratings of the responses, the current study's findings indicate that the maximum average ratings is for participating in source decision of its suppliers.

CONCLUSION

SCM plays a critical role in increasing a company's production and competitiveness. Companies participate in an enterprise for the purpose of developing a product and delivering it to the end customer. Even though significant steps have been taken in recent decades to increase the construction industry's efficiency and competitiveness, as well as alignments on production in terms of expenditure, quality of operation, quality of materials, and delivery time, there is still space for growth in supply chain management tools for the building industry.

For this study, integrated action, collectively exchanging knowledge, collaboration, and collaborators establishing and sustaining long-term partnerships were used as examples of behaviors for organizations to conform to the SCM theory (Mentzer et al. 2001). A well-established relationship between the players will ensure that these tasks are carried out properly. Partnering in development was based on three main principles: setting common goals, making open decisions and addressing issues in a manner that was decided upon at the start of the project, and looking for concrete performance gains by rewards (Saadaet al. 2002). As a result, in order to examine the current situation of SCM in the construction industry, this study has been focused on contractors' binding position at the upstream and downstream of the chain.

The researcher emailed questionnaires to 102 people who worked in the construction industry in different capacities. However, 87 people replied and 80 of them were used to evaluate and interpret the findings because they were fully filled out, while the other 7 were incomplete and could not be used for the study. The data for the analysis was collected using a questionnaire. Personal interviews and findings would not have been feasible due to the limited time available to complete the analysis because of the present situation of the Covid-19 pandemic. The questionnaire was conducted online using web forms produced by google forms and a connection sent to each participant via email.

It was discovered that the approach of contractors is heavily influenced by the customers. They almost ignore suppliers' contributions to SCM organizations, while they recognize the role of clients in supply chain cooperation. However, by comparing the total length of time spent on each activity, Contractors have begun to work together with vendors and customers, according to a collaboration arrangement understanding the significance of manufacturers in the correct implementation of SC. Mutual relationships with suppliers lead to a more stable climate, greater productivity, and higher earnings, as well as many other benefits such as long-term relationships, mutual planning, and problem-solving activities (Maloni and Benton, 1997). To achieve the high levels of integration needed to synchronize the supply chain, businesses must align the interests of consumers with those of vendors and collaborators.

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