CHAPTER 7: CONCLUSION

This chapter presents the conclusions, contributions and managerial implications of the current study. The limitations of the current study and directions for future studies are also discussed.

7.1 Conclusions

This study is one of first large-scale empirical studies that examined the relationship between supply chain integration and performance in the context of the Indian manufacturing industry. It confirmed the positive relationship between dimensions of supply chain integration and the immediate performance outcome resulting from integration efforts. It answered the following research objectives:

1) Identify the immediate performance outcomes of different dimensions of supply chain integration
2) Examine the relationships between dimensions of supply chain integration and their immediate performance outcomes.
3) Examine the relationships between immediate performance outcomes of dimensions of supply chain integration and financial performance of the firm.
4) Examine the relationships between dimensions of supply chain integration and financial performance of the firm.

As mentioned in literature review section presented in Chapter 3, past studies modeled manufacturing capabilities, customer services and other intermediate performance constructs as mediating variable between supply chain integration and firm performance. The current study investigated both the direct and indirect relationships between dimensions of supply chain integration viz. supplier integration, customer integration and internal integration and financial
performance. The indirect effect of dimensions of SCI on financial performance is tested via their immediate performance outcomes respectively. This study defined the immediate performance outcomes of supplier integration, customer integration and internal integration and labeled these constructs as supplier related performance outcome, customer related performance outcome and manufacturing related performance outcome. Further, the current study developed valid and reliable instruments to measure these three constructs. Based on the data from 214 respondents working in the manufacturing industry in India, the research models are tested using structural equation modeling methodology. The result showed that the relationship between dimensions of supply chain integration and financial performance is fully mediated through their immediate performance outcomes.

7.2 Contributions

This study contributes to the supply chain integration literature in several ways. First, this study provides a theoretical framework including the dimensions of supply chain integration, immediate performance outcomes and financial performance. Second, this research developed valid and reliable instruments to measure three new constructs. These new constructs- supplier related performance outcome, customer related performance outcome and manufacturing related performance outcome captures supply chain performance improvement which a firm achieve by supplier integration, customer integration and internal integration respectively. All three measurement scales have been tested through rigorous statistical analyses including Q-sort, exploratory factor analysis, confirmatory factor analysis, convergent validity, discriminant validity and validation of second-order constructs. All of the measurement scales satisfied the validity and reliability requirements. Therefore, these constructs can be used in future studies.
Third, this study empirically supports the literature regarding the indirect relationships between the dimensions of supply chain integration and financial performance of the firm. It also confirms that the relationship between the dimension of supply chain integration viz. supplier integration, customer integration, internal integration and financial performance is mediated through immediate performance outcomes viz. supplier related performance outcome, customer related performance outcome and manufacturing related performance outcome respectively. This study also supports the direct relationships between supplier related performance outcome and financial performance, customer related performance outcome and financial performance, and, manufacturing related performance outcome and financial performance.

Fourth, this study brings the attention to the opinion that there is paradigm shift from competition-based strategy to collaboration-based strategy. The firms that have a high level of internal and external integration, i.e., with suppliers and customers, achieve improved supply chain performance leading to better financial performance.

7.3 Managerial Implications

The results of the current study have several important implications for practitioners. First, as the competition has shifted from between organizations to between supply chains, more and more organization are increasingly adopting strategies to integrate with members in their supply chain. Companies are investing in technologies and practices to reduce supply chain cost and enhance performance. But there are doubts regarding the potential benefits of supply chain integration, especially in developing countries like India where a little research has been done in this area. The finding of current research provides support to practitioners that supply chain integration is an effective way of improving both supply chain performance and financial performance.
Second the research identifies the specific performance outcomes that a firm can achieve through supplier integration, customer integration and internal integration. Even though organizations realize the importance of supply chain integrative practices, they often do not know exactly what to implement or they just focus on the integration of a portion of the supply chain. The findings of this research demonstrates that all the dimensions of supply chain integration viz. supplier integration, customer integration and internal integration are equally important and that each contributes to improved supply chain performance which, in turn, improves financial performance. Hence, the findings of the research encourage the practitioners to invest in practices and technologies that help in achieving a high level of supply chain integration. Firms should build strong supplier partnerships and improve relationship with customers. Further, they should focus on having a high level of internal integration through integrated information systems and use of cross-functional teams. Finally, they should be continually exploring other means to improve internal and external supply chain integration.

Third, this study provides valid and reliable measurements to evaluate supply chain performance at an organizational level and can be used to benchmark and compare supply chain performance across different organizations. Although there are numerous studies which have established supply chain performance measures, the measurement discussed in this research has focused not only on internal function but captures the contribution of external supply chain members such as customers and suppliers. These measures can be used by practitioners not only to evaluate the immediate performance outcome of their supply chain integration effort, but also to understand the impact of these immediate performance outcomes on the financial performance of their firm.
7.4 Limitations of the Current Research

Although this research makes significant contributions to both supply chain integration theory and industrial practices, it has several limitations which are discussed in this section.

First, this study could not provide adequate evidence to validate supply chain integration as a second order construct comprising of three dimensions viz. supplier integration, customer integration and internal integration. Hence, the current study could not verify the direct impact of supply chain integration (as a higher order construct) on supply chain performance and financial performance. There is a need to validate this construct especially in Indian context and explore the relationship between supply chain integration and supply chain performance and also between supply chain performance and financial performance.

Second, a large sample could not be collected due to time and cost constraints. Although the present sample size of 214 responses is adequate for the methodology used, the measurement instrument could not be revalidated in the current study. This can impede the general agreement on the use of these instruments. Future research in supply integration can address this issue.

Third, single respondents with titles ranging from CEO to Managers were approached to respond to the questionnaire dealing with complex supply chain integration issues. Though upper level respondents such as CEOs, VPs and Supply Chain Managers have detailed knowledge about their supply chain practices, the lower level respondents such as Production Managers may not have appropriate knowledge to answer supplier and customer related questions. Therefore, the use of single respondents may cause some measurement inaccuracy.

Fourth, this study did not consider the behavioral factors such as trust, commitment and power which can facilitate or inhibit the implementation of supply chain integrative strategies.
7.5 Recommendation for Future Research

The above mentioned limitations of the current study present several opportunities for future research. First, as pointed earlier the supply chain integration construct was not validated in current study, hence future research focused on the development better measurement scales to measure supply chain integration and explore its impact on supply chain performance and financial performance in Indian context are needed.

Second, since the usefulness of scales comes from its generalizability, future studies should revalidate the measurement scales developed in this study (SRPO, CRPO and MRPO) by the similar reference population.

Third, future studies should collect data from multiple respondents within the single firm because use of single respondent to collect information involving entire supply chain may generate some inaccuracy. Hence, future study should employ multiple methods of collecting data and involve multiple respondents including upper level management and managers from relevant functional areas, e.g., purchasing, operations, logistics, sales, etc. from the participating companies to ensure accurate responses.

Fourth, future studies should investigate the structural relationships hypothesized in this study across industries. An adequate sample should be obtained in each industry and analysis can be done for each industry. This would reveal any industry-specific relationships, if they exist. Further, the performance of the companies who are at different level of supply chain integration can be compared by dividing the sample into low and high supply chain integration levels.
Fifth, the structural relationships hypothesized in this study can be tested across other developing countries as well as developed countries in the future research. The impact of country specific factors such as culture, environment and business regulation can also be explored. Differences found in SCI between developed and developing countries would be valuable to firms operating on a global basis as they look to adapt and adjust SCI practices used in developed regions to their operations in developing countries.