CHAPTER - 6
SUMMARY OF KEY FINDINGS

The previous chapter has dealt in detail the data analysis and interpretation of results. In this chapter, a summary of findings of the research study is presented.

The study aims to address the impact of IT specifically in the downstream supply chain i.e. in the firm’s outbound processes - from the company through its distribution channels to its consumer - and measure the impact of such IT investments on competitive marketing performance. This study has differed from previous research by focusing on supply chain benefits not from buyer but from the seller point of view. The findings will be of interest to supply chain managers in selling firms. Since the downstream supply chain has been examined with IT investments in distribution channels being assessed, competitive marketing performance has been chosen as the outcome variable.

This chapter is presented in the following sections:

Section 6.1 Describes the findings for the impact of IT on Competitive Marketing Performance.

Section 6.2 Presents the findings of the dimension level analysis relating to the impact of items in the Supply chain capabilities construct on and Operational and Strategic Marketing Benefits. It also presents the findings of the analysis relating to the impact of items in the Operational and Strategic Marketing benefit constructs on Competitive Marketing Performance.

Section 6.3 Explains the findings of the item level analysis relating to the impact of items in the Supply chain capabilities construct to items in the Operational and Strategic Marketing Benefits constructs. It also presents the findings of the analysis related to the impact of items in Operational and Strategic Marketing Benefits on Competitive Marketing Performance.
Section 6.4  Presents the findings from the Canonical correlation analysis on the relative influence of Operational benefits and Strategic Marketing Benefits on Competitive Marketing Performance.

The research was based on the primary data collected from 307 managers in manufacturing companies in India. The collected data was analyzed using different statistical tools viz. Principal Component Analysis, Multiple Regression, Structural Equation Modeling and Canonical Correlation Analysis. The summary of the research findings is presented in the following sections.

6.1  Findings on the impact of IT on Competitive Marketing Performance (CMP)

Based on the review of previous research, hypotheses were formulated to study the impact of IT in the downstream supply chain on Competitive Marketing performance. The independent variables in the study were competitive business environment, Extent of IT usage, IT advancement, IT alignment and Supply chain capabilities. The dependent variables were Operational Benefits and Strategic Marketing benefits with the ultimate dependent variable (outcome) being Competitive Marketing Performance.

Further, the data were subjected to a structural equation modeling analysis using AMOS 16.0 software and various hypotheses were tested signifying the relationships between the independent variables considered and dependent variables (Operational benefits and Strategic marketing benefits in the first order and Competitive marketing benefit as a higher order benefit). SEM is a sophisticated second generation statistical tool which can handle multiple independent variables and dependent variables with lesser assumptions. The results of the SEM model between the determinants and Competitive Marketing Performance corroborates the hypotheses which were supported as contained in Table 6.1.
Table 6.1: Hypotheses relating to the Impact of IT on Competitive Marketing Performance

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Research finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Competitive Business environment will lead to greater extent of IT usage</td>
<td>It is proved that competitive business environment will lead to greater extent of IT usage in firms.</td>
</tr>
<tr>
<td>H2a: Greater the extent of IT usage, higher the level of IT advancement in firms</td>
<td>It is proved that greater the extent of IT usage higher will be the level of IT advancement in firms.</td>
</tr>
<tr>
<td>H2b: Greater the extent of IT usage, higher the level of IT alignment in firms.</td>
<td>It is proved that greater the extent of IT usage higher will be the level of IT alignment in firms.</td>
</tr>
<tr>
<td>H3: IT advancement in firms influence chain capabilities positively</td>
<td>It is proved that IT advancement has a positive influence on supply chain capabilities.</td>
</tr>
<tr>
<td>H4: IT alignment in firms influence supply chain capabilities positively</td>
<td>It is proved that of IT alignment has a positive influence on supply chain capabilities</td>
</tr>
<tr>
<td>H5a: Supply chain capabilities of firms impact the operational benefits positively</td>
<td>It is proved that supply chain capabilities of firms has a positive impact on operational benefits</td>
</tr>
<tr>
<td>H5b: Supply chain capabilities of firms impact the strategic marketing benefits positively</td>
<td>It is proved that supply chain capabilities of firms has a positive impact on strategic marketing benefits</td>
</tr>
<tr>
<td>H6: Operational benefits have a positive impact on competitive marketing performance of firms</td>
<td>It is proved that operational benefits has a positive impact on competitive marketing performance</td>
</tr>
<tr>
<td>H7: Strategic marketing benefits have a positive impact on competitive marketing performance of firms</td>
<td>It is proved that strategic marketing benefits has a positive impact on competitive marketing performance.</td>
</tr>
<tr>
<td>H8: Operational Benefits and Strategic Marketing Benefits will have higher influence on competitive marketing performance in firms with direct distribution channels than firms with indirect distribution channels.</td>
<td>It is proved that the Operational benefits and Strategic marketing benefit have a higher influence on competitive marketing performance in indirect distribution channels.</td>
</tr>
</tbody>
</table>

### 6.1.1 Key Findings

On examining the determinants of Competitive marketing performance, the emerging key findings are highlighted as follows:
**Key finding 1**

The extent of IT usage has a greater influence on IT alignment of the firm with channel partners ($\beta=0.402$) than IT advancement ($\beta=0.353$). It is evident that Indian manufacturing firms are not merely investing in advanced technology but investing in technology that aligns their processes with that of their channel partners.

**Key finding 2**

IT Alignment ($\beta=0.423$) influences supply chain capabilities more positively than IT Advancement ($\beta=0.391$). Capabilities of the supply chain like information sharing, coordination, collaboration and responsiveness are achieved more through investing in technology to align IT with that of their downstream channel partners.

**Key finding 3**

Supply chain capabilities have a greater positive impact on Strategic Marketing benefits ($\beta=0.516$) than on Operational Benefits ($\beta=0.424$). This indicates that the capabilities are contributing strategically to improving the marketing benefits and highlights the importance of working towards improving the operational benefits performance through using the IT leveraged supply chain capabilities.

**Key finding 4**

Strategic marketing benefits ($\beta=0.537$) have a greater positive impact on Competitive Marketing Performance than Operational Benefits ($\beta=0.452$). This underscores the importance of importance of marketing benefits from supply chain processes in the downstream supply chain.

**Key finding 5**

Firms with indirect channels of distribution have leveraged IT in the downstream supply chain to create Operational benefits and Strategic Marketing benefits to have a higher influence on Competitive marketing performance than firms with direct distribution channels.
6.2 Findings of the Dimension level analysis

As observed in Table 6.1 all the hypothesized relationships in the structural model was supported at 99.99% confidence levels. Supply chain capabilities impacts operational benefits positively (beta=0.424, p<0.001). A dimension level analysis was done to find out which of the supply chain capabilities items influence Operational benefits positively. Supply chain capabilities impacts strategic marketing benefits positively (beta=0.516, p<0.001). An analysis was again done to find out which individual items in supply chain capabilities construct impact strategic marketing benefits.

Key Finding 6

Collaboration (β=0.300) and Supply chain responsiveness (β=0.218) impact Operational Benefits positively. Hence Hypothesis H9.3 and H9.4 are accepted. It is found that collaboration has a greater impact on operational benefits than supply chain responsiveness. Information sharing and Coordination do not have a significant impact on Operational Benefits and hence Hypothesis H9.1 and H9.2 are rejected.

Key finding 7

Supply chain responsiveness (β=0.254) and Collaboration (β=0.189) have a significant impact on Strategic marketing benefits and hence Hypothesis H10.4 and H10.3 are accepted. It is found that supply chain responsiveness has a stronger impact on Strategic marketing benefits than Collaboration. Information sharing and coordination do not have a significant impact on Strategic Marketing Benefits and hence Hypothesis H10.1 and H10.2 are rejected.

The SEM analysis supports the hypothesis that Operational benefits have a positive impact on Competitive marketing performance. (β=0.452, p<0.001). Similarly Strategic marketing benefits also has a positive impact on Competitive Marketing performance (β=0.527, p<0.001). As a next step, dimension level analysis was done to find which items in these two constructs created a positive impact on Competitive Marketing performance.
**Key finding 8**

Increased delivery performance ($\beta=0.287$, $p<0.001$) and reduction in excess stocks ($\beta=0.155$, $p<0.05$) have a positive impact on competitive marketing performance and hence Hypothesis $H_{11.2}$ and $H_{11.10}$ are accepted. Increased delivery performance has a higher impact on competitive marketing performance than reduction in excess stocks.

The other Hypotheses – $H_{11.1}$, $H_{11.4}$, $H_{11.6}$ and $H_{11.8}$ are not found significant in the dimension level regression analysis and are rejected.

**Key finding 9**

Improved information and inventory visibility ($\beta=0.236$, $p<0.001$), Identifying opportunities for new products ($\beta=0.225$, $p<0.001$) and better service support ($\beta=0.203$, $p<0.01$) were found to significantly impact competitive marketing performance. Hence Hypothesis $H_{12.2}$, $H_{12.4}$ and $H_{12.1}$ respectively were accepted. It was found that improved information and inventory visibility affects competitive marketing performance higher than the other two items. Hypothesis $H_{12.3}$ was found not to significantly impact on Competitive Marketing Performance and is rejected.

**6.3 Findings of the Item Level Analysis**

Multiple linear regression analysis was employed to test the impact of each item in Supply chain capabilities on each item in Operational benefits and Strategic Marketing benefits and the key findings from this analysis are presented below. These finding give a clearer insight into the important items in Operational Benefits and Strategic Marketing benefits that impact on Competitive Marketing performance of the firm.

**Key finding 10**

Collaboration has a significant positive impact on all six items in Operational benefits and emerges as the most important supply chain capability with respect to its impact on Operational benefits creation in the downstream supply chain. Collaboration has the highest impact on Reduction in excess stock. Hence Hypothesis $H_{13.3a}$, $H_{13.3b}$, $H_{13.3d}$, $H_{13.3f}$, $H_{13.3h}$, and $H_{13.3j}$ are accepted.
**Key finding 11**

Supply chain responsiveness creates a positive impact on four items with the exception of increased forecast accuracy and reduction in stock outs. It has the highest impact on Increased Perfect order fulfilment. Hence Hypothesis H13.4b, H13.4d, H13.4f, and H13.4j are accepted. Hypothesis H13.4a and H13.4h are rejected.

**Key finding 12**

Coordination creates a positive impact on reduction in stock outs only. Hence only Hypothesis H13.2h is accepted. The other Hypotheses in set H13.2 are rejected.

**Key finding 13**

Information sharing does not create any impact on any one of the Operational benefits. Hence the Hypothesis set H13.1a to H13.1k are rejected.

**Key finding 14**

Information sharing does not create a significant positive impact on Strategic Marketing benefits. Hence the Hypotheses set H14.1a to H14.1d is rejected.

**Key finding 15**

Coordination does not create a significant positive impact on Strategic Marketing benefits. Hence Hypotheses set H14.2a to H14.2d is rejected.

**Key finding 16**

Collaboration has a positive impact on three Strategic Marketing Benefit items excluding service support. It has the strongest impact on improved information and inventory visibility. Hence Hypotheses H14.2b, H14.2c and H14.2d are accepted and H14.2a is rejected.

**Key finding 17**

Supply chain responsiveness has a positive impact on all items of Strategic Marketing Benefits and emerges as the most important factor to influence strategic marketing benefits. Its impact on Service support to customers is the highest. Hence the Hypotheses set H14.4a to H14.4d is accepted.
Further a regression analysis was done to study each item in Operational Benefits and each item in Strategic Marketing Benefits and their impact on Competitive Marketing Performance. The insights provided by this item level analysis are presented below.

**Key finding 18**

Increased forecast accuracy, increased perfect order fulfilment, reduction in cycle time and reduction in stock outs do not create a positive impact on any item in Competitive Marketing Performance. Hence Hypotheses sets H15.1, H15.4, H15.6, and H15.8 are rejected.

**Key finding 19**

Reduction in excess stock has a positive impact on sales growth and market share only and hence Hypothesis H15.10a and H15.10b are accepted and Hypothesis H15.10c, H15.10d and H15.10e are rejected.

**Key finding 20**

Increased delivery performance has a significant positive impact on all the items in Competitive marketing performance and emerges as the most important factor contributing to superior marketing performance. It has the strongest impact on Market share and sales growth. Its significant positive impact on Market share is the highest in the item level analysis between operational benefits and competitive marketing performance. Hence the Hypothesis set H15.2 is accepted.

**Key finding 21**

Customizing pricing and promotion does not have a positive impact on any item in Competitive Marketing performance and hence Hypothesis set H16.3 is rejected.

**Key finding 22**

Service support does not have a positive impact on Market share but has a significant positive impact on all the other three items in Competitive Marketing performance. Its impact on Customer satisfaction is the most significant. Hence Hypothesis H16.1b is rejected and H16.1a, H16.1c, H16.1d and H16.1e are accepted.
Key finding 23

Improved information and inventory visibility has a positive impact on Sales growth, market share and customer satisfaction. It does not have a significant impact on the other two items. Hence Hypothesis H16.2a, H16.2b and H16.2e are accepted and Hypothesis H16.2c and H16.2d are rejected.

Key finding 24

Discovering opportunity for new products has a positive impact on entry into new markets and new product introductions. The highest impact in these item level relationships between Strategic marketing benefits and competitive marketing performance found to be in the positive impact of this item on new product introduction. Hence Hypothesis H16.4a, H16.4b and H16.4e are rejected and Hypothesis H16.4c and H16.4d are accepted.

6.4 Relative influence of Operational benefits and Strategic marketing benefits on Competitive Marketing Performance

With a view to study the relative influence of Operational benefits and Strategic marketing benefits on Competitive Marketing Performance, Canonical correlation analysis was undertaken using NCSS 2007 software. The study considered the six variables in Operational benefits and four variables in Strategic Marketing benefits as independent variables and the five variables in Competitive Marketing Performance as dependent variables and the relative influence was studied by subjecting the data to Canonical correlation analysis. The model was accepted and it was found that improved information visibility, service support and increased delivery performance influence sales growth market share and customer satisfaction. Service support and reduction in stock outs influence market share and entry into new markets.