DISTRIBUTION STRATEGIES OF HANDSET MANUFACTURERS IN INDIA: COMPARATIVE STUDY OF MAJOR PLAYERS

ABSTRACT OF THE THESIS

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BY

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ABSTRACT

Introduction

One of the most important elements of the marketing mix is place, i.e. product availability. Making a product/service available to customers is what distribution is all about.

Managing the supplies to ensure adequate and timely availability of products to the end users is one of the most challenging aspects of distribution. This requires proper management of all the activities that form the basis of product availability, right from the supplier to the end users.

Distribution refers to the steps taken in order to move and store a product from the supplier stage to a customer stage in the supply chain. Distribution is one of the basic elements for the success of any business. Though it sounds simple enough to make products available in sufficient quantities wherever the demand exists, the ground reality is rather complex. Customers are spread out in wide geographical regions; many customers prefer different channels at different points of time even within a single location. Different channels have different cost implications and customers seek consistency in service levels across all the channels.

The management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers is known as Supply Chain Management.

Each phase in a supply chain must add some value to the product or the service, i.e. there must be some value addition at every stage starting from idea generation to point of delivery.
Mobile communication is one of the most important developments in the recent times. Mobile telephony is one of the fastest grown and fastest adopted technologies all over the world. The last decade saw a phenomenal increase in the number of mobile phone users. The mobile communications technology is evolving rapidly in the world as more and more people demand mobile services with larger bandwidth and new innovative services like connectivity anywhere, anytime for features like TV, multimedia, interoperability and seamless connectivity with all types of protocols and standards. The mobile communication has contributed more than any other technology to bridge the digital divide.

India has come to be regarded as the world's most competitive and one of the fastest growing telecom markets. The market for mobile phone handsets in India in the year 2005 was estimated at 780 million units all over the world. The number of mobile phone users in India was estimated at 75.94 million* as on December 5, 2005. By March 2010 the country had 584.32 million* mobile phone subscribers, up from 346.89 million* just 15 months earlier. The mobile market was continuing to expand at an annual rate in excess of 40% coming into 2010. At present, with a subscriber base of more than 884.37 million* (as on November 30, 2011), the mobile telecommunications system in India is the second largest in the world.

Scope of the Study

The present study aims to identify the current distribution strategies of mobile handset manufacturers in India with regard to the major players in the market based on their respective market shares.

For the present study, top four mobile handset manufacturers were chosen based on their respective market shares for FY 2009-2010*. They are:

1. **Nokia**, with a market share of 52.2%
2. **Samsung**, with a market share of 17.4%
3. **L.G.**, with a market share of 5.9%
4. **Micromax**, with a market share of 4.1%

(*Source: Voice & Data Journal)
The distribution process involves the efficient use of logistics and the supply chain. There are various components in the supply chain that need to be managed:

1. **Procurement:** The mobile companies either procure different components such as chipsets, consoles, batteries, etc. from the different outside sources or manufacture the same themselves. Proper management of purchase processes should be followed so that the right materials are available at the right place and at right time.

2. **Inventory Management:** Inventory must be properly managed so that there is adequate stock available for production always.

   Inventory must be managed in a way so as to ensure that the stock is neither too much nor too less, as both these conditions are adverse for the company.

3. **Warehousing & Storage:** After the production is done, the firm may store the handsets at proper locations so that the distribution to the retailers may be made convenient as it would be too cumbersome to transport the handsets directly to each retailer.

4. **Transportation:** The firm must take great care during the transportation of the handsets and must ensure timely delivery to the desired locations.

5. **Packaging:** The handsets must be properly packed so as to ensure proper safety during transportation.

   The firm may hire Third Party Logistics who specialize in the delivery operations so that the products reach the desired locations properly and in time.

6. **Information Management:** The company must have proper knowledge regarding the needs and wants of the customers.

   Proper communication between the channel members must be there so that useful information may be shared between them in order to cater to the customers' needs.

   Further, the information regarding the various competitors, their strategies, market share, customer demographics, etc. must be possessed by the company.
7. **Returned Goods Handling:** This is one of the most important aspects in the entire logistic operations as the image in the minds of the customers regarding the product may be affected by not giving due respect to this aspect.

Few years back, Nokia Corporation recalled its defective BL-5C battery so that the customer may not suffer due to the danger it posed.

8. **Parts and Service Support:** The mobile companies make available the latest accessories as well as the spare parts to the customers in case they encounter any sort of problem with their handsets.

These firms also provide service for the handsets they sell to their customers so that the customer may remain loyal to the firms’ offerings.

9. **Customer Service Levels:** Nowadays, the mobile companies are trying to provide the best of products and services to their customers in order to stay ahead in market.

Various offers such as free service, gift vouchers, use of genuine parts, etc. are now being provided to the customers.

10. **Channel Management:** Proper management of the various channel members is the key to success. Proper and timely information sharing, proper communication and cooperation between the channel members ensure that the customers’ needs and wants are satisfied and may provide the firm a good market share.

**Research Objectives**
As discussed above, the mobile sector growth depends primarily on the distribution process as well as the management of the supply chain. This study attempts to analyse these processes as to how their betterment can enhance the sales and provide satisfactory service to the customers. Also, the study tries to find out approaches which can prove beneficial for the mobile firms in the context of market share and profitability. Specifically, the study aims:

- To identify the various factors that affect/influence distribution strategies of mobile handset manufacturers.
• To gain an insight into the current distribution dimensions adopted by the mobile handset manufacturers.

• To explore differences, if any, with regard to distribution strategies across different mobile handset manufacturers.

• To suggest distribution strategies to mobile handset manufacturers that may help them in reaching out to the customers in a better way.

Research Methodology
This section deals with the problem statement, scope of the study, research objectives, development of conceptual model, formulation of research hypotheses, research design, questionnaire development and its administration. Further, this chapter briefly describes the research strategy and tools of analysis employed in this study. Finally, the limitations of the study are also discussed.

Development of Conceptual Model
The conceptual model has been crystallised after a thorough review of literature. This review covered various aspects of business operations. It helped in identifying nine different distribution dimensions that govern different aspects of distribution strategies. These nine dimensions of distribution strategies are Supply Chain Management (SCM), Relationship Management (RM), Environmental Management (EM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Network (DN), Financial Strategies (FS) and Risk Management (RSM).

A conceptual model indicating the impact of these dimensions on Distribution Strategies is presented in Figure 1.
Formulation of Research Hypotheses

For the purpose of the present study, two sets of hypotheses were formulated. There are forty-nine hypotheses in all. The first set comprises of forty hypotheses formulated on the basis of different dimensions varying across different organisational variables. Based on review of literature, ten dimensions viz. Supply Chain Management, Relationship Management, Technology, Environmental Management,
Inventory Management, Marketing Strategies, Distribution Network, Distribution Strategies, Financial Strategies and Risk Management were identified that affect the overall distribution policies and strategies adopted by the members of the distribution network. The effect of these dimensions was tested against four different organisational variables viz. status of supply chain members (whether manufacturer, distributor or retailer), nature of the supply chain members (whether operation volume is small, medium or large), different handset brands (whether dealing in Nokia, Samsung, L.G., Micromax or multiple brands) and type of ownership of the supply chain members (sole proprietary or partnership). Second set comprising of nine hypotheses deals with statements that are formulated to test the effects of the nine independent dimensions on the dependent dimension i.e. Distribution Strategies.

Exhaustive literature review and discussions with industry experts and academicians have led to the development of the following hypotheses:

### 3.7.1 Hypotheses Based on Dimensions of Distribution Strategies across Organisational Variables

**H₀₁:** There is no significant difference in the mean value of Supply Chain Management across the status of the supply chain members.

**H₀₂:** There is no significant difference in the mean value of Supply Chain Management across the nature of the supply chain members.

**H₀₃:** There is no significant difference in the mean value of Supply Chain Management across different handset brands.

**H₀₄:** There is no significant difference in the mean value of Supply Chain Management with respect to type of ownership.

**H₀₅:** There is no significant difference in the mean value of Relationship Management across the status of the supply chain members.

**H₀₆:** There is no significant difference in the mean value of Relationship Management across the nature of the supply chain members.
H₀⁷: There is no significant difference in the mean value of Relationship Management across different handset brands.

H₀⁸: There is no significant difference in the mean value of Relationship Management with respect to type of ownership.

H₀⁹: There is no significant difference in the mean value of Technology across the status of the supply chain members.

H₀₁₀: There is no significant difference in the mean value of Technology across the nature of the supply chain members.

H₀₁¹: There is no significant difference in the mean value of Technology across different handset brands.

H₀₁²: There is no significant difference in the mean value of Technology with respect to type of ownership.

H₀₁³: There is no significant difference in the mean value of Inventory Management across the status of the supply chain members.

H₀₁₄: There is no significant difference in the mean value of Inventory Management across the nature of the supply chain members.

H₀₁₅: There is no significant difference in the mean value of Inventory Management across different handset brands.

H₀₁₆: There is no significant difference in the mean value of Inventory Management with respect to type of ownership.

H₀₁₇: There is no significant difference in the mean value of Environmental Management across the status of the supply chain members.

H₀₁₈: There is no significant difference in the mean value of Environmental Management across the nature of the supply chain members.

H₀₁₉: There is no significant difference in the mean value of Environmental Management across different handset brands.
$H_{020}$: There is no significant difference in the mean value of Environmental Management with respect to type of ownership.

$H_{021}$: There is no significant difference in the mean value of Marketing Strategies across the status of the supply chain members.

$H_{022}$: There is no significant difference in the mean value of Marketing Strategies across the nature of the supply chain members.

$H_{023}$: There is no significant difference in the mean value of Marketing Strategies across different handset brands.

$H_{024}$: There is no significant difference in the mean value of Marketing Strategies with respect to type of ownership.

$H_{025}$: There is no significant difference in the mean value of Distribution Strategies across the status of the supply chain members.

$H_{026}$: There is no significant difference in the mean value of Distribution Strategies across the nature of the supply chain members.

$H_{027}$: There is no significant difference in the mean value of Distribution Strategies across different handset brands.

$H_{028}$: There is no significant difference in the mean value of Distribution Strategies with respect to type of ownership.

$H_{029}$: There is no significant difference in the mean value of Distribution Network across the status of the supply chain members.

$H_{030}$: There is no significant difference in the mean value of Distribution Network across the nature of the supply chain members.

$H_{031}$: There is no significant difference in the mean value of Distribution Network across different handset brands.

$H_{032}$: There is no significant difference in the mean value of Distribution Network with respect to type of ownership.
**H₀33:** There is no significant difference in the mean value of Financial Strategies across the status of the supply chain members.

**H₀34:** There is no significant difference in the mean value of Financial Strategies across the nature of the supply chain members.

**H₀35:** There is no significant difference in the mean value of Financial Strategies across different handset brands.

**H₀36:** There is no significant difference in the mean value of Financial Strategies with respect to type of ownership.

**H₀37:** There is no significant difference in the mean value of Risk Management across the status of the supply chain members.

**H₀38:** There is no significant difference in the mean value of Risk Management across the nature of the supply chain members.

**H₀39:** There is no significant difference in the mean value of Risk Management across different handset brands.

**H₀40:** There is no significant difference in the mean value of Risk Management with respect to type of ownership.

**3.7.2 Hypothesis based on Relationship among the Dimensions of Distribution Strategies**

**H₀41:** There is no significant impact of Supply Chain Management on Distribution Strategies.

**H₀42:** There is no significant impact of Relationship Management on Distribution Strategies.

**H₀43:** There is no significant impact of Environmental Management on Distribution Strategies.

**H₀44:** There is no significant impact of Technology on Distribution Strategies.
Ho45: There is no significant impact of Inventory Management on Distribution Strategies.

Ho46: There is no significant impact of Marketing Strategies on Distribution Strategies.

Ho47: There is no significant impact of Distribution Network on Distribution Strategies.

Ho48: There is no significant impact of Financial Strategies on Distribution Strategies.

Ho49: There is no significant impact of Risk Management on Distribution Strategies.

Research Design

The research design used in this study is conclusive in nature which is divided into two parts. The initial phase of the study follows a descriptive research design in which a conceptual model is developed, covering the broad dimensions of the study.

However, the later part of the study is based on causal research design which is used to validate the cause-effect relationship among the different dimensions (variables) of the study.

The research techniques employed in this study were:

- **Questionnaire-based survey**: Questionnaire-based survey is an established approach to obtain respondents’ opinion on a range of issues related to a research problem. In the present research, it was used to gain an insight, in terms of breadth as well as depth, regarding the strategies adopted by Indian mobile manufacturers for the distribution of handsets.

- **Case Development and Comparative Study**: Case studies were developed for the select companies highlighting their structure, growth and distribution strategies adopted.
Further, a comparative analysis was done based on different dimensions as regards the selected companies.

**Questionnaire Development**

The Indian mobile phone sector has grown significantly in the last decade. The mobile subscriber base has increased significantly and has paved way for new entrants in the mobile phone market.

There is a lack of enough research regarding the comparative study of mobile firms for distribution of handsets in the Indian context. This study attempts to address this shortcoming. It is aimed at assessing the current distribution strategies adopted by mobile firms and compare them on a common platform. To that end, a questionnaire-based survey was conducted. The questionnaire was designed after reviewing the available literature and extensive discussions with four executives attached with mobile firms and two academicians.

To increase the response rate and facilitate respondents, the questionnaire included close-ended questions. A five point Likert-scale was used for that purpose. However, there were some questions that had yes/no options as well. The questionnaire had three sections. Section A dealt with the organisational as well as personal profile of the respondents. Section B focused on issues related to various dimensions of distribution strategies. Section C assessed extent of implementation of specific dimensions of distribution strategies by the supply chain members in their operations.

**Questionnaire Administration**

Administration of the questionnaire was done in order to collect relevant data from the sources. The target population was analysed and samples were drawn accordingly. Before final collection of data, pilot study was carried out for questionnaire refinement.

**Target Respondents**

The respondents comprising of the executives working in the departments of supply chain, administration and operations of the top four mobile firms viz. Nokia,
Samsung, L.G. and Micromax (based on their respective market shares) were selected to participate in the survey for the administration of the questionnaire. The distributors and retailers for these brands were also approached for data collection.

**Sampling Technique**

For the selection of executives, simple random sampling was employed. The questionnaires were sent to respective heads of the departments of supply chain, administration and operations requesting them to get the questionnaires filled.

Since there are an umpteen number of retailers and distributors of these four brands, stratified random sampling was used. For this purpose, three broad geographical areas were covered that included retailers and distributors from NCR, eastern Uttar Pradesh and Pune-Mumbai regions.

**Classification of Target Respondents**

The respondents were classified on the basis of status, nature, brand association and ownership. These are explained below.

**Status:** Classification based on the status of the respondents as a supply chain member, i.e. Manufacturer, Distributor or Retailer.

**Nature:** Classification based on the nature of the respondents as a supply chain member, i.e. Small, Medium or Large. The supply chain members generating business worth up to Rupees Five Lakhs per month were classified as small, those generating more than Rupees Five Lakhs and up to Rupees Ten Lakhs per month were classified as medium, while the members generating income more than Rupees Ten Lakhs per month were classified as large supply chain members respectively.

**Brand Association:** Classification based on association with a particular brand viz. Nokia, Samsung, L.G. or Micromax.

**Type of Ownership:** Classification based on the type of ownership of the supply chain members, i.e. Sole Proprietary or Partnership.
Pilot Study

Before administering the questionnaire full scale, a pilot study was carried out among select companies. The pilot study aimed at:

- obtaining feedback of the executives of the mobile firms working in the area of supply chain, operations and environmental management;
- obtaining feedback from the suppliers, distributors and retailers;
- carrying out necessary additions in the questionnaire to make it even more comprehensive;
- deleting those questions that may be of limited significance; and
- refining/ rephrasing the existing questions to impart greater clarity.

A total of fifteen supply chain members were contacted to fill out the questionnaires. Accordingly, the questions were modified and the final questionnaire was crystallised.

Procedure for Data Collection

Data through a total of 325 questionnaires were either collected personally or through mails to the selected executives of the companies from the chosen sector. The survey was conducted during October 2010-January 2011. Four questionnaires each were sent to the selected companies. Questionnaires, including a covering letter and self-addressed stamped envelopes, were mailed to the respective heads of the departments of supply chain, administration and operations. Reminders were sent to all non-respondents, three weeks after the despatch of the questionnaires. In addition, personal visits, phone calls and e-mails were also resorted to for eliciting responses. Data from distributors and retailers were collected personally. Out of the 325 questionnaires, 163 were received back. Out of those, 12 questionnaires were either incomplete or ambiguous and hence, were discarded. So, only 151 questionnaires were analysed. This gave an overall response rate of 46.5%. A response rate of above 20% is considered desirable for survey findings (Yu and Cooper, 1983). Malhotra and Grover (1998) have also suggested a response rate of 20% for positive assessment of the surveys.
Tools of Analysis

The study used the specifically developed research questionnaire as the basic research instrument to collect the data. The organised data was then analysed using different statistical tools such as MS-Excel 2007, SPSS 17.0, and AMOS 16.0 software. Using these tools, different tests were applied depending on the nature of the data. The tests applied for analysing the data were:

- **Exploratory Factor Analysis**
  Exploratory factor analysis (EFA) attempts to discover the nature of the constructs influencing a set of responses. It is used to uncover the underlying structure of a relatively large set of variables. The researcher's *a priori* assumption is that any indicator may be associated with any factor. This is the most common form of factor analysis. There is no prior theory and one uses factor loadings to intuit the factor structure of the data.

- **Reliability Analysis**
  Reliability analysis is used to determine the internal consistency or average correlation of items in a survey instrument to gauge its reliability. Reliability analysis helps in determining whether the same set of items would elicit the same responses if the same questions are recast and re-administered to the same respondents. Variables derived from test instruments are declared to be reliable only when they provide stable and reliable responses over a repeated administration of the test. The reliability is tested on the basis of Cronbach's alpha value, which is a numerical coefficient of reliability.

- **Analysis of Variance**
  The Analysis of Variance (ANOVA) is a statistical method used for making simultaneous comparisons between means of two or more samples. It is a method that yields values that can be tested to determine whether a significant relation exists between variables. ANOVA is generally applied when comparison of means for more than two samples is to be drawn. However, this method can be applied in case of means for two samples as well.
• **The T-Test**
  The t-test is applied when the comparison of means of two samples is to be drawn. When we have only two samples we can use the t-test to compare the means of the samples but it might become unreliable in case of more than two samples. The t-test assesses whether the means of two samples are statistically different from each other.

• **Confirmatory Factor Analysis**
  Confirmatory factor analysis (CFA) is a technique which tests whether a specified set of constructs is influencing responses in a predicted way. CFA is conducted to examine the validity and reliability of the measurement model. Model fitness is determined on the basis of various factors such as GFI, AGFI, RMSEA, etc.

• **Structural Equation Modelling**
  The Structural Equation Modelling (SEM) is used in order to evaluate the measurement model. This is done to test the impact of independent variables on the dependent variable.

**Key Findings**

Key findings based on the results of the hypotheses testing as well as those results that have emerged out of qualitative analysis are as under:

• There exist significant differences with respect to Supply Chain Management, Relationship Management, Technology, Inventory Management, Marketing Strategies, Distribution Network and Distribution Strategies across the status of the supply chain members.

• Manufacturers pay greater importance to the management of the supply chain as compared to distributors or retailers.

• Manufacturers pay more importance to development of cordial relations among the members of the supply chain as compared to distributors or retailers.

• Manufacturers pay greater importance to adoption of modern technology as compared to distributors or retailers.
• Manufacturers pay higher importance to proper management of inventory for achieving desired distribution objectives as compared to distributors or retailers.

• Manufacturers are more committed to devising better marketing strategies for proper distribution as compared to distributors or retailers.

• Manufacturers pay highest importance to designing better distribution network as compared to distributors or retailers.

• Manufacturers are more committed for developing better distribution strategies as compared to distributors or retailers.

• There is no significant difference with respect to adoption of any of the dimensions of distribution strategies across the nature of the supply chain members.

• There exist significant differences with respect to implementation of Relationship Management, Technology, Marketing Strategies, Distribution Network and Risk Management across different handset brands.

• Supply chain members associated with Samsung pay greater importance to the development of cordial relations among each other as compared to members associated with other brands.

• Supply chain members associated with multiple brands pay more importance to adoption of newer technology as compared to supply chain members associated with other brands.

• Members dealing in multiple brands pay more importance to development of better marketing strategies as compared to members associated with other brands.

• Members associated with multiple brands pay higher importance to development of proper distribution network as compared to members associated with other brands.
• Supply chain members associated with Samsung pay more importance to management of risk as compared to members associated with other brands.

• Implementation of strategies for the management of inventory varies significantly across type of ownership.

• Supply chain members with sole proprietorship pay more importance to the management of inventory as compared to supply chain members working in partnership.

• There is a positive significant impact of Supply Chain Management, Relationship Management, Technology, Inventory Management, Marketing Strategies and Distribution Network on Distribution Strategies.

• Environmental Management and Financial Strategies have a negative but insignificant impact on Distribution Strategies.

• Risk Management has a positive but insignificant impact on Distribution Strategies.

• Most of the supply chain members associated with Nokia and L.G. receive help with regard to storage of inventory in the warehouses from other members of the supply chain. For Samsung and Micromax, this value is only moderately high.

• There is a low level of adoption with regard to use of electronic order forms for placing the orders among all the players.

• There is a low level of adoption regarding the use of GPS and GIS for tracking and locating the consignments among all the players.

• Barring Micromax, all other players make extensive use of warehouses for storage of inventory. For Micromax, there is a moderate level of adoption in this regard.

• There is a moderate level of research conducted by Nokia, Samsung and L.G. for understanding the buying behaviour of the customers. For Micromax, this value is low.
• Most of the members associated with each brand make use of Personal Interviews as a means of taking feedback from the customers.

• There is low level of adoption with regard to the use of data provided by different research organisations among all the players.

• All the players make extensive use of internet/e-mail for communicating with other channel members.

• All the players seek regular feedback from other channel partners.

• Nokia and Samsung make extensive use of third parties and other independent agencies in order to gather information from the market and make it available to other members in the supply chain. For L.G. and Micromax, this value is only moderately high.

• Majority of the supply chain members associated with each brand make use of Letter of Credit as a means of transferring the money.

• Most of the supply chain members associated with each brand have a credit repayment period between three to six months.

Summary

The growth of mobile telephony in India has been tremendous in the last decade. The mobile sector has contributed significantly to the GDP of the country. The increase in the mobile subscriber base has been substantial which has grown from 5 million subscribers in 2001 to over 884 million subscribers as of November 2011. This has been possible due to sharp decrease in calling rates and also due to availability of cheaper and advanced mobile handsets that offer customers various services such as online shopping, mobile ticketing, information services, mobile banking, browsing, and so on.

One of the most important aspects that the mobile handset manufacturers focus upon for the availability of better mobile handsets for customers’ use has been the development of optimal distribution strategies that ensure timely and proper delivery
of handsets. Further, devising such strategies guarantees lower levels of logistics costs which in turn allows manufacturers to offer handsets at considerably low prices.

The handset manufacturers need to appropriately manage their supply chains and work out plans to make sure that the distribution network is so designed that it benefits all the members of the supply chain, right from the suppliers to the end users.

The manufacturers also have to find out various factors that play a crucial role in the development of effective and proper distribution strategies for the distribution of mobile handsets.

The present research work focuses on the different dimensions that act as key factors aiding in planning and control of distribution strategies adopted by handset manufacturers.

The research also compares the different strategies adopted by top four mobile handset manufacturers in India selected on the basis of their respective market shares.
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ALIGARH, INDIA

2011
DEDICATED

TO

MY LOVING FAMILY
DECLARATION

I do hereby declare that the thesis titled "Distribution Strategies of Handset Manufacturers in India: Comparative Study of Major Players", submitted for the award of the degree of Doctor of Philosophy in Business Administration, is a record of original work done by me under the guidance of Dr. (Mrs.) Salma Ahmed, Associate Professor, Department of Business Administration, Aligarh Muslim University, Aligarh and it has previously not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate of any university.

Date: 27.12.2011
Place: ALIGARH

SAIF SAMI
CERTIFICATE

This is to certify that the thesis titled "Distribution Strategies of Handset Manufacturers in India: Comparative Study of Major Players", submitted for the award of the degree of Doctor of Philosophy in Business Administration, is a record of original work done by Mr. Saif Sami, during the period of his study in the Department of Business Administration, Faculty of Management Studies and Research, Aligarh Muslim University, Aligarh, under my supervision and guidance.

This thesis has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate of any university.

Date: 26.12.2011
Place: ALIGARH

Dr. (Mrs.) Salma Ahmed
(Supervisor)
Certificate

This is to certify that the thesis titled “Distribution Strategies of Handset Manufacturers in India: Comparative Study of Major Players”, submitted in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy in Business Administration, is a record of original work done by Mr. Saif Sami, during the period of his study in the Department of Business Administration, Faculty of Management Studies and Research, Aligarh Muslim University, Aligarh, under my supervision and guidance. This thesis has not formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title to any candidate of any university.

Date: 28th December 2011
Place: Jamshedpur

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Last but certainly not the least, I would like to express my gratefulness to my friends who were always there with me whenever I needed support, especially Mr. Farrukh Rafiq, Mr. Javed Ghaffar, Mr. Faiz Mohammad, Mr. Shahid Mushtaq and others.
One of the most important and significant developments in recent times is that of mobile communication. It is one of the fastest grown and fastest adopted technologies all over the world.

There has been a tremendous growth in mobile telephony over the past few decades. The mobile phone users are now well-versed with the latest technological advancements in the mobile communication sector.

One of the most important aspects that the mobile handset manufacturers focus upon for the availability of better mobile handsets for customers’ use has been the development of optimal distribution strategies that ensure timely and proper delivery of handsets. Further, devising such strategies guarantees lower levels of logistics costs which in turn allows manufacturers to offer handsets at considerably low prices.

Physical distribution is the set of activities concerned with efficient movement of finished goods from the end of the production operation to the consumer. Physical distribution of goods takes place within numerous wholesaling and retailing distribution channels.

Different dimensions of distribution strategies need to be looked into for devising an effective and efficient distribution network design.

Present research work looks into the different aspects of distribution strategies that affect the overall distribution process for the delivery of mobile handsets.

An attempt has been made through this study to explore those dimensions of distribution strategies that have a considerable impact on the development and eventual implementation of an appropriate distribution network.
# TABLE OF CONTENTS

Declaration  
Certificate – Supervisor  
Certificate – Co Supervisor  
Acknowledgements  
Preface  
Table of Contents  
List of Tables  
List of Figures  
List of Abbreviations Used

**Chapter 1: INTRODUCTION**

1.1 The Context 1-2  
1.2 The Objective of a Supply Chain 2-3  
1.3 The Role of Distribution in a Supply Chain 3-4  
1.4 Factors influencing Distribution Network Design 4-5  
1.5 Dimensions of Distribution Strategies adopted by Business Organisations 5-6  
1.6 Mobile Telephony in India 6  
1.7 Motivation for Research 7-8  
1.8 Scope of the Study 8-10  
1.9 Research Objectives 10-11  
1.10 Research Design 11  
1.11 Organisation of Research 12-13  
1.12 Chapter Summary 15

**Chapter 2: LITERATURE REVIEW**

2.1 Introduction 16-54  
2.2 Studies on Distribution, Logistics and Supply Chain 16-22  
2.3 Studies Focusing on Channel Structures of Some Industries 22  
   2.3.1 Automobile Industry 22-24  
   2.3.2 FMCG Industry 25-26  
   2.3.3 Textile Industry 26-28  
   2.3.4 Footwear Industry 28-30  
   2.3.5 Chemical Industry 30-32  
   2.3.6 Newspaper Industry 32
2.4 Studies Specific to Distribution of Mobile Handsets 33-39

2.5 Studies Addressing Different Dimensions Having an Impact on Distribution Strategies

2.5.1 Supply Chain Management and Distribution 39

2.5.2 Relationship Management and Distribution 41-42

2.5.3 Technology and Distribution 43-44

2.5.4 Inventory Management and Distribution 44-45

2.5.5 Environmental Management and Distribution 46-47

2.5.6 Marketing Strategies and Distribution 47-48

2.5.7 Distribution Network and Distribution 48-49

2.5.8 Financial Strategies and Distribution 49-51

2.5.9 Risk Management and Distribution 51-53

2.6 Gaps in Existing Literature 53

2.7 Chapter Summary 53-54

Chapter 3: RESEARCH METHODOLOGY 55-56

3.1 Introduction 55

3.2 Problem Statement 55-56

3.3 Scope of the Study 56-58

3.4 Research Objectives 58

3.5 Data Sources 58-59

3.6 Development of Conceptual Model 59-60

3.7 Formulation of Research Hypotheses 60-61

3.7.1 Hypotheses based on dimensions of distribution strategies across organisational variables 61-67

3.7.2 Hypothesis based on relationship among the dimensions of distribution strategies 67-69

3.8 Research Design 69

3.9 Questionnaire Development 69-70

3.9.1 Structure and Content Validity of the Questionnaire 70

3.9.2 Factor Analysis using KMO and Bartlett’s Test for testing the Validity of the Questionnaire 71-77

3.9.3 Reliability Analysis 77-91

3.10 Questionnaire Administration 91
<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10.1 Target Respondents</td>
<td>91-92</td>
</tr>
<tr>
<td>3.10.2 Sampling Technique</td>
<td>92</td>
</tr>
<tr>
<td>3.10.3 Classification of Target Respondents</td>
<td>92</td>
</tr>
<tr>
<td>3.10.4 Pilot Study</td>
<td>93</td>
</tr>
<tr>
<td>3.10.5 Procedure for Data Collection</td>
<td>93</td>
</tr>
<tr>
<td>3.11 Tools of Analysis</td>
<td>94</td>
</tr>
<tr>
<td>3.11.1 Exploratory Factor Analysis</td>
<td>94</td>
</tr>
<tr>
<td>3.11.2 Reliability Analysis</td>
<td>94</td>
</tr>
<tr>
<td>3.11.3 Analysis of Variance</td>
<td>94</td>
</tr>
<tr>
<td>3.11.4 The T-Test</td>
<td>95</td>
</tr>
<tr>
<td>3.11.5 Confirmatory Factor Analysis</td>
<td>95</td>
</tr>
<tr>
<td>3.11.6 Structural Equation Modelling</td>
<td>95</td>
</tr>
<tr>
<td>3.12 Limitations of the Study</td>
<td>95-96</td>
</tr>
<tr>
<td>3.13 Chapter Summary</td>
<td>96</td>
</tr>
<tr>
<td><strong>Chapter 4: DATA ANALYSIS</strong></td>
<td>97-142</td>
</tr>
<tr>
<td>4.1 Introduction</td>
<td>97</td>
</tr>
<tr>
<td>4.2 Hypotheses Testing</td>
<td>97</td>
</tr>
<tr>
<td>4.2.1 Hypotheses based on Dimensions of Distribution</td>
<td>97</td>
</tr>
<tr>
<td>4.2.1.1 Strategies across Organisational Variables</td>
<td></td>
</tr>
<tr>
<td>4.3 Chapter Summary</td>
<td>142</td>
</tr>
<tr>
<td><strong>Chapter 5: CONFIRMATORY FACTOR ANALYSIS</strong></td>
<td>143-147</td>
</tr>
<tr>
<td>5.1 Introduction</td>
<td>143</td>
</tr>
<tr>
<td>5.2 Analysis using Confirmatory Factor Analysis</td>
<td>143-145</td>
</tr>
<tr>
<td>5.3 Assessment of Model Fit</td>
<td>145-146</td>
</tr>
<tr>
<td>5.4 Chapter Summary</td>
<td>147</td>
</tr>
<tr>
<td><strong>Chapter 6: VALIDATION OF CONCEPTUAL MODEL</strong></td>
<td>148-156</td>
</tr>
<tr>
<td>6.1 Introduction</td>
<td>148</td>
</tr>
<tr>
<td>6.2 The Conceptual Model</td>
<td>148-150</td>
</tr>
<tr>
<td>6.3 Hypotheses Testing</td>
<td>151-155</td>
</tr>
<tr>
<td>6.4 Assessment of Model Fit</td>
<td>155-156</td>
</tr>
<tr>
<td>6.5 Chapter Summary</td>
<td>156</td>
</tr>
</tbody>
</table>
### Chapter 7: CASE DEVELOPMENT AND COMPARATIVE STUDY

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Introduction</td>
<td>157</td>
</tr>
<tr>
<td>7.2 Case Development</td>
<td></td>
</tr>
<tr>
<td>7.2.1 Nokia</td>
<td>157-161</td>
</tr>
<tr>
<td>7.2.2 Samsung</td>
<td>161-166</td>
</tr>
<tr>
<td>7.2.3 L.G.</td>
<td>166-171</td>
</tr>
<tr>
<td>7.2.4 Micromax</td>
<td>171-175</td>
</tr>
<tr>
<td>7.3 Comparative Study</td>
<td>175-190</td>
</tr>
<tr>
<td>7.4 Chapter Summary</td>
<td>190</td>
</tr>
</tbody>
</table>

### Chapter 8: FINDINGS, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Introduction</td>
<td>191</td>
</tr>
<tr>
<td>8.2 Key Findings</td>
<td>191-194</td>
</tr>
<tr>
<td>8.3 Recommendations to Supply Chain Members</td>
<td>194-195</td>
</tr>
<tr>
<td>8.4 Managerial Implications of the Study</td>
<td>195-196</td>
</tr>
<tr>
<td>8.5 Directions for Future Research</td>
<td>196-197</td>
</tr>
<tr>
<td>8.6 Chapter Summary</td>
<td>197</td>
</tr>
</tbody>
</table>

REFERENCES 198-216

APPENDIX
## LIST OF TABLES

### Chapter 2: LITERATURE REVIEW

Table 2.1: Growth of Mobile Phone Subscribers  

### Chapter 3: RESEARCH METHODOLOGY

Table 3.1: KMO and Bartlett's Test  
Table 3.2: Total Variance Explained  
Table 3.3: Rotated Component Matrix  
Table 3.4: Factor Loadings  
Table 3.5 (a) Case Processing Summary (All Variables)  
Table 3.5 (b) Reliability Statistics (All Variables)  
Table 3.5 (c) Scale Statistics (All Variables)  
Table 3.6 (a) Case Processing Summary (Supply Chain Management)  
Table 3.6 (b) Reliability Statistics (Supply Chain Management)  
Table 3.6 (c) Scale Statistics (Supply Chain Management)  
Table 3.7 (a) Case Processing Summary (Relationship Management)  
Table 3.7 (b) Reliability Statistics (Relationship Management)  
Table 3.7 (c) Scale Statistics (Relationship Management)  
Table 3.8 (a) Case Processing Summary (Technology)  
Table 3.8 (b) Reliability Statistics (Technology)  
Table 3.8 (c) Scale Statistics (Technology)  
Table 3.9 (a) Case Processing Summary (Inventory Management)  
Table 3.9 (b) Reliability Statistics (Inventory Management)  
Table 3.9 (c) Scale Statistics (Inventory Management)  
Table 3.10 (a) Case Processing Summary (Marketing Strategies)  
Table 3.10 (b) Reliability Statistics (Marketing Strategies)  
Table 3.10 (c) Scale Statistics (Marketing Strategies)  
Table 3.11 (a) Case Processing Summary (Distribution Network)  
Table 3.11 (b) Reliability Statistics (Distribution Network)  
Table 3.11 (c) Scale Statistics (Distribution Network)  
Table 3.12 (a) Case Processing Summary (Distribution Strategies)  
Table 3.12 (b) Reliability Statistics (Distribution Strategies)
Chapter 4: DATA ANALYSIS

Table 4.1: Supply Chain Management versus Status 97
Table 4.2: Supply Chain Management versus Nature 98
Table 4.3: Supply Chain Management versus Brands 99
Table 4.4: Supply Chain Management versus Ownership 100
Table 4.5: Relationship Management versus Status 101
Table 4.6: Relationship Management versus Nature 102
Table 4.7: Relationship Management versus Brands 103
Table 4.8: Relationship Management versus Ownership 104
Table 4.9: Technology versus Status 105
Table 4.10: Technology versus Nature 106
Table 4.11: Technology versus Brands 107
Table 4.12: Technology versus Ownership 108
Table 4.13: Inventory Management versus Status 109
Table 4.14: Inventory Management versus Nature 110
Table 4.15: Inventory Management versus Brands 111
Table 4.16: Inventory Management versus Ownership 112
Table 4.17: Environmental Management versus Status 113
Table 4.18: Environmental Management versus Nature 114
Table 4.19: Environmental Management versus Brands 115
Table 4.20: Environmental Management versus Ownership 116
Table 4.21: Marketing Strategies versus Status 117
Table 4.22: Marketing Strategies versus Nature
Table 4.23: Marketing Strategies versus Brands
Table 4.24: Marketing Strategies versus Ownership
Table 4.25: Distribution Strategies versus Status
Table 4.26: Distribution Strategies versus Nature
Table 4.27: Distribution Strategies versus Brands
Table 4.28: Distribution Strategies versus Ownership
Table 4.29: Distribution Network versus Status
Table 4.30: Distribution Network versus Nature
Table 4.31: Distribution Network versus Brands
Table 4.32: Distribution Network versus Ownership
Table 4.33: Financial Strategies versus Status
Table 4.34: Financial Strategies versus Nature
Table 4.35: Financial Strategies versus Brands
Table 4.36: Financial Strategies versus Ownership
Table 4.37: Risk Management versus Status
Table 4.38: Risk Management versus Nature
Table 4.39: Risk Management versus Brands
Table 4.40: Risk Management versus Ownership
Table 4.41: Summary of Hypotheses Testing

Chapter 5: CONFIRMATORY FACTOR ANALYSIS
Table 5.1: CMIN
Table 5.2: RMR, GFI
Table 5.3: Baseline Comparisons
Table 5.4: RMSEA
Table 5.5: Fit Indices for the Model

Chapter 6: VALIDATION OF CONCEPTUAL MODEL
Table: 6.1 Structure Parameters and Hypotheses Testing Results
Table 6.2: Assessment of Model Fit

Chapter 7: CASE DEVELOPMENT AND COMPARATIVE STUDY
Table 7.1: Comparative Matrix
LIST OF FIGURES

Chapter 1: INTRODUCTION
Figure 1.1: A Typical Supply Chain 2
Figure 1.2: Chapter-wise Plan of the Thesis 14

Chapter 3: RESEARCH METHODOLOGY
Figure 3.1: Major Dimensions of Distribution Strategies 60

Chapter 5: CONFIRMATORY FACTOR ANALYSIS
Figure 5.1: Path Diagram for Confirmatory Factor Analysis 144

Chapter 6: VALIDATION OF CONCEPTUAL MODEL
Figure 6.1: Major Dimensions of Distribution Strategies 149
Figure 6.2: Path Diagram for Structural Equation Modelling 150

Chapter 7: CASE DEVELOPMENT AND COMPARATIVE STUDY
Figure 7.1: Help in Storage of Inventory 176
Figure 7.2: Use of Electronic Order Forms 177
Figure 7.3: Use of GPS/GIS 178
Figure 7.4: Extensive Use of Warehouse 179
Figure 7.5: Mode of Transport 180
Figure 7.6: Survey for Customers’ Buying Behaviour 181
Figure 7.7: Feedback from Customers 182
Figure 7.8: Type of Feedback 183
Figure 7.9: Use of Data from Research Institutes 184
Figure 7.10: Use of E-mail/Internet 185
Figure 7.11: Feedback from Channel Members 186
Figure 7.12: Use of Third Parties for Data Collection 187
Figure 7.13: Mode of Money Transfer 188
Figure 7.14: Repayment Period 189
LIST OF ABBREVIATIONS USED

AGFI  Adjusted Goodness of Fit Index
AMOS  Analysis of Moment Structures
ANOVA Analysis of Variance
A/P   Accounts Payable
A/R   Accounts Receivable
ASSOCHAM The Associated Chambers of Commerce and Industry in India
BOP   Bottom of the Pyramid
BRL   Brazilian Real
CDMA  Code Division Multiple Access
CFA   Confirmatory Factor Analysis
CFI   Comparative Fit Index
CFS   Centaur Financial Services
CLE   Council for Leather Export
CLRI  Central Leather Research Institute
CLV   Customer Lifetime Value
COO   Country of Origin/Chief Operating Officer
DS    Distribution Strategies
DSO   Days Sales Outstanding
DSS   Decision Support System
DN    Distribution Network
EDI   Electronic Data Interchange
EFA   Exploratory Factor Analysis
EM    Environmental Management
EVA   Economic Value Added
EXIM  Export-Import
FDDI  Footwear Design and Development Institute
FMCG  Fast Moving Consumer Goods
FS    Financial Strategies
FY    Fiscal Year
GDP   Gross Domestic Product
GFI   Goodness of Fit Index
GRDI  Global Retail Development Index
GSM   Global System for Mobile Communication
IT    Information Technology
JIT   Just-in-Time
LCD   Liquid Crystal Display
LGEIL L.G. Electronics India Limited
LSP   Logistic Service Provider
MNC(s) Multinational Corporation(s)
MRP   Material Requirements Planning
MS    Marketing Strategies
NCR   National Capital Region
NFI   Normed Fit Index
OEM   Original Equipment Manufacturer
OICA  Organisation Internationale des Constructeurs d’Automobiles
       (International Organization of Motor Vehicle Manufacturers)
PC    Personal Computer
PDA   Personal Digital Assistant
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGFI</td>
<td>Parsimony Goodness of Fit Index</td>
</tr>
<tr>
<td>PPD</td>
<td>Plasma Panel Display</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>RM</td>
<td>Relationship Management</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root Mean Squared Error of Approximation</td>
</tr>
<tr>
<td>ROI</td>
<td>Return on Investment</td>
</tr>
<tr>
<td>RSM</td>
<td>Risk Management</td>
</tr>
<tr>
<td>SC</td>
<td>Scheduled Caste</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>SEM</td>
<td>Structural Equation Modelling</td>
</tr>
<tr>
<td>SEMs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SIAM</td>
<td>Society of Indian Automotive Manufacturing</td>
</tr>
<tr>
<td>SIM</td>
<td>Subscriber Identity Module</td>
</tr>
<tr>
<td>SISC</td>
<td>Samsung India Software Centre</td>
</tr>
<tr>
<td>SISO</td>
<td>Samsung India Software Operations</td>
</tr>
<tr>
<td>SITP</td>
<td>Scheme for Integrated Textile Parks</td>
</tr>
<tr>
<td>SoC</td>
<td>System on Chip</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>SSI</td>
<td>Small Scale Industries</td>
</tr>
<tr>
<td>ST</td>
<td>Scheduled Tribe</td>
</tr>
<tr>
<td>T</td>
<td>Technology</td>
</tr>
<tr>
<td>TRAI</td>
<td>Telecom Regulatory Authority of India</td>
</tr>
<tr>
<td>TUFS</td>
<td>Technology Upgradation Fund Scheme</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UMTS</td>
<td>Universal Mobile Telecommunications System</td>
</tr>
<tr>
<td>US/USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>VAS</td>
<td>Value Added Service(s)</td>
</tr>
<tr>
<td>W-CDMA</td>
<td>Wideband Code Division Multiple Access</td>
</tr>
<tr>
<td>WMS</td>
<td>Warehouse Management System</td>
</tr>
</tbody>
</table>
Chapter 1
INTRODUCTION

1.1 The Context
1.2 The Objective of a Supply Chain
1.3 The Role of Distribution in a Supply Chain
1.4 Factors influencing Distribution Network Design
1.5 Dimensions of Distribution Strategies adopted by Business Organisations
1.6 Mobile Telephony in India
1.7 Motivation for Research
1.8 Scope of the Study
1.9 Research Objectives
1.10 Research Design
1.11 Organisation of Research
1.12 Chapter Summary
Chapter 1
INTRODUCTION

1.1 The Context

One of the most important elements of marketing mix is place, i.e. product availability. Making a product/service available to customers is what distribution is all about.

Managing the supplies to ensure adequate and timely availability of products to the end users is one of the most challenging aspects of distribution. This requires proper management of all the activities that form the basis of product availability, right from the supplier to the end users.

The management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers is known as Supply Chain Management (Harland, 1996). Mentzer et. al. (2001) have defined supply chain management as, “Supply chain management is the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.”

Proper supply chain management guarantees efficient handling of goods from the point of origin to the point of consumption. Supply Chain Management encompasses the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management combines supply and demand management within and across companies.

A typical supply chain may involve a variety of stages. These supply chain stages include:
• Component/raw material suppliers
• Manufacturers
• Wholesalers/distributors
• Retailers
• Customers

Each stage in a supply chain is connected through the flow of products, information and funds. These flows often occur in both directions and may be managed by one of the stages or an intermediary. The suitable design of the supply chain depends on both the customer’s needs and the roles played by the stages involved.

![Diagram of a typical supply chain](source: www.sapientsage.com)

**Fig.1.1 A Typical Supply Chain**

*Source: www.sapientsage.com*

### 1.2 The Objective of a Supply Chain

The objective of every supply chain should be to maximise the overall value generated (Chopra and Meindl, 2004). The *value* a supply chain generates is the difference between what the final product is worth to the customer and the costs the supply chain incurs in filling the customer’s request. For most commercial supply chains, value will be strongly correlated with *supply chain profitability*, the difference between the revenue generated from the customer and the overall cost across the
supply chain.

Each phase in a supply chain must add some value to the product or the service, i.e. there must be some value addition at every stage starting from idea generation to point of delivery.

In general, a supply chain must focus on these objectives:

- Enhancing Customer Service
- Expanding Sales Revenue
- Reducing Inventory Cost
- Improving On-Time Delivery
- Reducing Order to Delivery Cycle Time
- Reducing Lead Time
- Reducing Transportation Cost
- Reducing Warehouse Cost
- Reducing / Rationalise Supplier Base
- Expanding Width / Depth of Distribution

Each of these objectives benefits each and every member of the supply chain, right from the suppliers to the end users.

1.3 The Role of Distribution in a Supply Chain

Distribution refers to the steps taken in order to move and store a product from the supplier stage to a customer stage in the supply chain. To put in the words of Ducker (1962), “Distribution is the last ‘Dark Continent’ for business to conquer.” This function has become a growing concern for many industries and is today regarded as the single most critical point which can leverage business towards success.

Distribution is a key driver of the overall profitability of a firm as it directly impacts both the supply chain cost and the customer experience. Good distribution can be used to achieve a variety of supply chain objectives ranging from low cost to high
responsiveness. As a result, companies in the same industry often select significantly different distribution networks.

Distribution is one of the basic elements for the success of any business. Though it sounds simple enough to make products available in sufficient quantities wherever the demand exists, the ground reality is rather complex. Customers are spread out in wide geographical regions; many customers prefer different channels at different points of time even within a single location. Different channels have different cost implications and customers seek consistency in service levels across all the channels.

Efficient management of distribution channels calls for decision regarding the right combination of channel options, better handling of finances, proper risk management, designing proper distribution network, selecting effective marketing strategies, fruitful relationship among channel partners, employment of advanced technology, proper inventory management, and efficient environmental management.

1.4 Factors influencing Distribution Network Design

At the highest level, performance of a distribution network should be evaluated along two dimensions:

1. Customer needs that are met

2. Cost of meeting customer needs

The customer needs that are met influence the company's revenues, which along with cost decide the profitability of the delivery network.

While customer service consists of many components, focus will be on those measures that are influenced by the structure of the distribution network. These include:

- Response time
- Product variety
- Product availability
- Customer experience
• Order visibility
• Returnability

Response time is the time between when a customer places an order and receives delivery. Product variety is the number of different products/configurations that a customer wishes from the distribution network. Availability is the likelihood of having a product in stock when a customer order arrives. Customer experience includes the ease with which the customer can place and receive their order. Order visibility is the ability of the customer to track their order right from placement up to the point of delivery. Returnability is the ease with which a customer can return substandard merchandise and the knack of the network to handle such returns.

It may seem at first that a customer always needs the highest level of performance along all these dimensions. In practice, however, this is not always the case. Customers ordering a book at Amazon.com are willing to wait longer than those that drive to a nearby book store to get the same book. On the other hand, customers can find a far larger variety of books at Amazon compared to the book store.

Firms that target customers who can tolerate a large response time require few locations that may be far from the customer and can focus on increasing the capacity of each location. On the other hand, firms that target customers who value short response times need to locate close to them. These firms must have many facilities, with each location having a low capacity.

1.5 Dimensions of Distribution Strategies adopted by Business Organisations

Developing effective distribution strategies requires amalgamation of various dimensions that may affect the sales and profitability of the organisation.

In the context of the present study, nine dimensions have been identified that affect the distribution process of an organisation in one way or the other. The identified dimensions are viz. Supply Chain Management (SCM), Relationship Management (RM), Environmental Management (EM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Network (DN), Financial Strategies (FS) and Risk Management (RSM).
All these dimensions need to be closely monitored and managed in order to design comprehensive and efficient distribution strategies.

1.6 Mobile Telephony in India

Mobile communication is one of the most important developments in the recent times. Mobile telephony is one of the fastest grown and fastest adopted technologies all over the world. The last decade saw a phenomenal increase in the number of mobile phone users. The mobile communications technology is evolving rapidly in the world as more and more people demand mobile services with larger bandwidth and new innovative services like connectivity anywhere, anytime for features like TV, multimedia, interoperability and seamless connectivity with all types of protocols and standards. The mobile communication has contributed more than any other technology to bridge the digital divide.

The handset has become an entertainer, an informer, a secretary and an undeniable part of customers’ lives. The world over, voice revenues are reducing and this is forcing operators to focus on non-voice revenues. The initial change is towards SMS and then rolling to other data services like ring-tones, sports updates, film gossip and astrology.

India has come to be regarded as the world’s most competitive and one of the fastest growing telecom markets. The market for mobile phone handsets in India in the year 2005 was estimated at 780 million units all over the world. The number of mobile phone users in India was estimated at 75.94 million* as on December 5, 2005. By March 2010 the country had 584.32 million* mobile phone subscribers, up from 346.89 million* just 15 months earlier. The mobile market was continuing to expand at an annual rate in excess of 40% coming into 2010. At present, with a subscriber base of more than 884.37 million* (as on November 30, 2011), the mobile telecommunications system in India is the second largest in the world and it was thrown open to private players in the 1990s. GSM is comfortably maintaining its position as the dominant mobile technology with 80% of the mobile subscriber market, but CDMA seems to have stabilised its market share at 20% for the time being (*Source: TRAI Report).
1.7 Motivation for Research

One of the fastest growing technological areas in the world is that of mobile telephony. In India too the growth has been rapid, particularly in the last decade. The subscriber base is adding more and more customers every year. Within almost ten years of introduction of mobile phones in India, i.e. by the end of 2005, the number of mobile phones was about 76 millions (Keskar, 2007). Also, mobile segment has welcomed more and more players every year. Liberalised policies have ensured lower tariffs and reduced roaming rentals. This has lead to increased usage of mobile phones.

Not only service providers but also handset manufacturers have contributed a lot towards the growth of the sector. Mobile telephony started up with bulky handsets and has now reached to smart phones with cameras, radio facility and lots of other multimedia applications. Also, PDA's have entered Indian markets with operating systems that have made mobile phone, a pocket PC.

There is a growing demand for latest cell phones that can virtually perform the task of a laptop. Business and corporate professionals want to keep track of their e-mails and other official proceedings which a mobile can easily provide today.

Today's customer has become more responsive and demanding and there is a tremendous potential for future research in the field of mobile communication.

Following developments indicate growing awareness towards the developments in the mobile phone sector and need for in-depth and thorough study in the current industrial scenario.

and Environment etc.

- Conferences, workshops and seminars are being globally organised to address the issues and strategies related to the mobile communication sector.

- All over the world, mobile firms are streamlining their business operations, specifically distribution networks and supply chains and improving their logistic operations.

- Companies are focusing on various aspects of distribution strategies that govern their overall operations and distribution management.

This research aims to find out the impact of various factors that administer the efficiency and extent of distribution strategies adopted by mobile handset manufacturers in order to assure adequate and timely delivery of products for the ultimate use of the customers. Efficient designing and proper management of the distribution strategies ensure improved quality of services, lower logistics costs, shorter lead times, increased profits and higher levels of customer satisfaction. The present research work tries to explore the differences in the strategies adopted by major mobile handset manufacturers and thus present an overview of different dimensions that play crucial roles concerned with proper distribution of mobile phones across different channels.

1.8 Scope of the Study

The present study aims to identify the current distribution strategies of mobile handset manufacturers in India with regard to the major players in the market based on their respective market shares.

For the present study, top four mobile handset manufacturers were chosen based on their respective market shares for FY 2009-2010*. They are:

1. **Nokia**, with a market share of 52.2%
2. **Samsung**, with a market share of 17.4%
3. **L.G.**, with a market share of 5.9%
4. **Micromax**, with a market share of 4.1%

(*Source: Voice & Data Journal)
The distribution process involves the efficient use of logistics and the supply chain. There are various components in the supply chain that need to be managed:

1. **Procurement**: The mobile companies either procure different components such as chipsets, consoles, batteries, etc. from the different outside sources or manufacture the same themselves. Proper management of purchase processes should be followed so that the right materials are available at the right place and at right time.

2. **Inventory Management**: Inventory must be properly managed so that there is adequate stock available for production always.

   Inventory must be managed in a way so as to ensure that the stock is neither too much nor too less, as both these conditions are adverse for the company.

3. **Warehousing & Storage**: After the production is done, the firm may store the handsets at proper locations so that the distribution to the retailers may be made convenient as it would be too cumbersome to transport the handsets directly to each retailer.

4. **Transportation**: The firm must take great care during the transportation of the handsets and must ensure timely delivery to the desired locations.

5. **Packaging**: The handsets must be properly packed so as to ensure proper safety during transportation.

   The firm may hire Third Party Logistics who specialize in the delivery operations so that the products reach the desired locations properly and in time.

6. **Information Management**: The company must have proper knowledge regarding the needs and wants of the customers.

   Proper communication between the channel members must be there so that useful information may be shared between them in order to cater to the customers’ needs.

   Further, the information regarding the various competitors, their strategies, market share, customer demographics, etc. must be possessed by the company.
7. **Returned Goods Handling:** This is one of the most important aspects in the entire logistic operations as the image in the minds of the customers regarding the product may be affected by not giving due respect to this aspect.

Few years back, Nokia Corporation recalled its defective BL-5C battery so that the customer may not suffer due to the danger it posed.

8. **Parts and Service Support:** The mobile companies make available the latest accessories as well as the spare parts to the customers in case they encounter any sort of problem with their handsets.

These firms also provide service for the handsets they sell to their customers so that the customer may remain loyal to the firms’ offerings.

9. **Customer Service Levels:** Nowadays, the mobile companies are trying to provide the best of products and services to their customers in order to stay ahead in market.

Various offers such as free service, gift vouchers, use of genuine parts, etc. are now being provided to the customers.

10. **Channel Management:** Proper management of the various channel members is the key to success. Proper and timely information sharing, proper communication and cooperation between the channel members ensure that the customers’ needs and wants are satisfied and may provide the firm a good market share.

1.9 **Research Objectives**

As discussed above, the mobile sector growth depends primarily on the distribution process as well as the management of the supply chain. This study attempts to analyse these processes as to how their betterment can enhance the sales and provide satisfactory service to the customers. Also, the study tries to find out approaches which can prove beneficial for the mobile firms in the context of market share and profitability. Specifically, the study aims:

- To identify the various factors that affect/influence distribution strategies of mobile handset manufacturers.
• To gain an insight into the current distribution dimensions adopted by the mobile handset manufacturers.

• To explore differences, if any, with regard to distribution strategies across different mobile handset manufacturers.

• To suggest distribution strategies to mobile handset manufacturers that may help them in reaching out to the customers in a better way.

1.10 Research Design

The research design used in this study is conclusive in nature which is divided into two parts. The initial phase of the study follows a descriptive research design in which a conceptual model is developed, covering the broad dimensions of the study.

However, the later part of the study is based on causal research design which is used to validate the cause-effect relationship among the different dimensions (variables) of the study.

The research techniques employed in this study were:

• **Questionnaire-based survey:** Questionnaire-based survey is an established approach to obtain respondents’ opinion on a range of issues related to a research problem. In the present research, it was used to gain an insight, in terms of breadth as well as depth, regarding the strategies adopted by Indian mobile manufacturers for the distribution of handsets.

• **Case Development and Comparative Study:** Case studies were developed for the target companies representing their structure, growth and distribution strategies adopted.

Further, a comparative analysis was done based on different dimensions as regards the selected companies.
1.11 Organisation of Research

The organisation of this thesis has been depicted in Figure 1.2. The study is divided into eight chapters.

Chapter 1 outlines an introduction to the research. It addresses various issues that are crucial for effective and timely distribution of products and services like distribution strategies, supply chain management, marketing strategies, inventory management, distribution network design, and so on. It highlights the research objectives and its scope in the current business scenario. It further provides information regarding various steps taken for the conduct of the research including the research methodology followed and different statistical techniques applied for data collection and analysis. This chapter also summarises the chapter schema of the research.

Chapter 2 reviews literature on relevant aspects of this research. Contributions of various researchers on broad distribution issues as also on specific issues such as supply chain management, inventory management, use of technology, marketing strategies, relationship management, risk management, financial strategies, etc. have been reviewed and presented. After literature review, the gaps in contemporary research have been identified. These gaps, then, have helped in the crystallisation of the problem statement for this research work.

Chapter 3 details out the problem statement, scope of the study, research objectives, development of conceptual model, formulation of research hypotheses, research design, questionnaire development and its administration. In addition, this chapter provides brief description on the research strategy, pattern of analysis employed and the limitations of the study.

Chapter 4 presents the results of the questionnaire based survey conducted with regard to four major mobile handset manufacturers in the Indian market. The questionnaire was administered across manufacturers, distributors and retailers of top four mobile handset brands in the country. The results of the formulated hypotheses have been presented in this chapter.

Chapter 5 describes the application of Confirmatory Factor Analysis which is a
statistical technique used to verify the factor structure of a set of observed variables. This method is used in order to test the validity of the conceptual model.

Chapter 6 presents the test results of the conceptual model crystallised for assessing the impact of different dimensions on the distribution strategies. The model was tested using Structural Equation Modelling technique. This research study has helped ascertain the impact of various dimensions on distribution strategies and the role of the supply chain members in the optimisation of various processes and techniques so as to ensure development of properly managed distribution network which guarantees shorter lead times, higher levels of customer satisfaction and low distribution costs.

Chapter 7 covers the case studies developed for the top four mobile handset manufacturers with regard to their inception, entry and growth in the Indian mobile sector. The distribution strategies and the market shares for each one of them have also been presented in the chapter. The chapter also compares the different strategies that each manufacturer adopts in order to make the products available to the customers in the shortest possible time and with lowest possible cost of distribution.

Chapter 8 covers key findings based on the results of the present research work. Some recommendations have been suggested to the supply chain members. Further, managerial implications have also been listed out. The chapter concludes with the directions for future research endeavour.
Figure 1.2: Chapter-wise Plan of the Thesis
1.12 Chapter Summary

The growth of mobile telephony in India has been tremendous in the last decade. The mobile sector has contributed significantly to the GDP of the country. The increase in the mobile subscriber base has been substantial which has grown from 5 million subscribers in 2001 to over 884 million* subscribers as of November 2011. This has been possible due to sharp decrease in calling rates and also due to availability of cheaper and advanced mobile handsets that offer customers various services such as online shopping, mobile ticketing, information services, mobile banking, browsing, and so on.

One of the most important aspects that the mobile handset manufacturers focus upon for the availability of better mobile handsets for customers’ use has been the development of optimal distribution strategies that ensure timely and proper delivery of handsets. Further, devising such strategies guarantees lower levels of logistics costs which in turn allows manufacturers to offer handsets at considerably low prices.

The handset manufacturers need to appropriately manage their supply chains and work out plans to make sure that the distribution network is so designed that it benefits all the members of the supply chain, right from the suppliers to the end users.

The manufacturers also have to find out various factors that play a crucial role in the development of effective and proper distribution strategies for the distribution of mobile handsets.

The present research work focuses on the different dimensions that act as key factors aiding in planning and control of distribution strategies adopted by handset manufacturers.

The research also compares the different strategies adopted by top four mobile handset manufacturers in India selected on the basis of their respective market shares.
Chapter 2
LITERATURE REVIEW

2.1 Introduction
2.2 Studies on Distribution, Logistics and Supply Chain
2.3 Studies Focusing on Channel Structures of Some Industries
   2.3.1 Automobile Industry
   2.3.2 FMCG Industry
   2.3.3 Textile Industry
   2.3.4 Footwear Industry
   2.3.5 Chemical Industry
   2.3.6 Newspaper Industry
2.4 Studies Specific to Distribution of Mobile Handsets
2.5 Studies Addressing Different Dimensions Having an Impact on Distribution Strategies
   2.5.1 Supply Chain Management and Distribution
   2.5.2 Relationship Management and Distribution
   2.5.3 Technology and Distribution
   2.5.4 Inventory Management and Distribution
   2.5.5 Environmental Management and Distribution
   2.5.6 Marketing Strategies and Distribution
   2.5.7 Distribution Network and Distribution
   2.5.8 Financial Strategies and Distribution
   2.5.9 Risk Management and Distribution
2.6 Gaps in Existing Literature
2.7 Chapter Summary
Chapter 2
LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature of working papers, published papers, both conceptual and empirical, and edited books sourced from different libraries and the internet.

This literature review is organised into four sections. First, a review of studies related to distribution strategies, supply chain and logistics has been presented. Second, studies focussing on the distribution strategies of different industries in the Indian context have been presented. In the third section, studies focussing on the distribution strategies adopted by organisations for the distribution of mobile handsets in India have been reviewed and presented. Lastly, studies addressing different dimensions that have an impact on distribution strategies have been reviewed and presented.

Based on the literature survey, an attempt has been made to identify the research gaps, which, then has become the basis for this research.

2.2 Studies on Distribution, Logistics and Supply Chain

Distribution is a fundamental virtue of marketing. Be it cigarettes, passenger cars, footwear, toothpaste, or any other product, proper distribution is essential for efficiently and effectively satisfying the needs and wants of the customers or the end users.

Distribution strategies play a crucial role in the launch of new products to the market. Distribution is crucial in the eventual acceptance and sales of a new product in the market as it determines the availability of the new product to customers.

Distribution and logistic operations are responsible for the efficient, effective and proper handling of a firm’s goods and services with the ultimate aim to minimise any cost, to improve customer service and to create a competitive advantage (Christopher,
Managing these operations has become a challenge for modern corporations considering the vast range of logistic functions, the inherent complexity when dealing with large product ranges and stock keeping units and the large capital investment needed for logistic operations. Principally, firms could perform the logistic operations by using their own assets or have the option to outsource part or the whole logistic functions to a specialised organisation called the logistics service provider (LSP) which becomes responsible for the provision of these logistic operations (Razzaque and Sheng, 1998). These LSP’s have become major organisations over the past few decades, have developed strong efficiency and expertise and support both the domestic and international expansion of various chain members such as manufacturers and retailers (Bourlakis, 1998; Bourlakis and Bourlakis, 2005).

Selecting the proper distribution channel strategy, as one of the key elements of a company’s success, has been a focal point in both supply chain and marketing channel structure research and managerial practices. The distribution channel strategy decision is usually based on finding the most profitable way to reach a market and serve the needs and wants of the customer.

Successful distribution channel strategy selection, implementation, and management cannot only help to meet the shopping needs and habits of the target customers efficiently under the cost constraints of the seller; they must also tone down the drawback caused by distribution channel conflicts such as double marginalisation.

Distribution decisions are crucial because changing them demands both resource and time and, therefore, firms have to take great care in designing their distribution strategies during the launch of innovations (Stern and Sturdivant, 1987). In this regard, it is worth mentioning that the fit between product and the delivery system is the single most vital variable, affecting the success of new products and services (Easingwood and Storey, 1991).

Supply chain management is one of the most important activities that establish the success of a company (Cambra and Polo, 2008; Quayle, 2003). Increasingly complex, dynamic and competitive markets require a global vision of the supply chain that integrates all the agents and elements of the system (Lee et al., 2010; Closs and
Mollenkopf, 2004; Alvarado and Kotzab, 2001). It is important to consider all the existing flows in the supply chain, from the origin to the final customer, and in the demand chain, from the market to the producers and suppliers (Collin et al., 2009).

Considering customers' preferences and needs is a key factor to understand the firms' success. Working together, demand and supply chains create the demand-supply chain and, when it is efficiently and properly managed, supply is well in line with demand and provides value for all consumers and suppliers (Cambra and Polo, 2008; Hoover et al., 2001).

It is well established that an important factor for the success of any company is the appropriate design and management of its supply chain (MacFarland et al., 2008). Factors such as customer service, supply chain integration, production and operations, distribution and storage, technology, reverse logistics and green supply chains and strategic alliances must be taken into account in the design of any supply chain system. These factors become even more critical in the case of multinational companies that have the option either to duplicate its supply chain in foreign countries or to adapt it to the new market.

One of the key and familiar concepts for the management of a supply chain is customer service: utilising the logistics system to provide the right product/service at the right place and time (Reiner, 2005; Vickery et al., 2003). It is highly related to the customer quality perception and company image and is directly linked to the company’s marketing strategy through the distribution variable. Armstrong et al. (2009) advocate the employment of demand-supply chain rather than distribution for a better managing of flows between the firm and its markets.

Supply chain integration represents the joint efforts of all the agents towards a common goal (Flynn et al., 2010; Kim, 2009). It implies activities such as joint planning, exchange of information, data and information systems, coordination, long-term partnership, and risks and benefits sharing, among others (Allesina et al., 2010; Kannan and Tan, 2010). Chain integration allows, for instance, reduction of the Bullwhip effect caused due to improper communication and lack of information flow among the channel partners.
Distribution and storage make a product or service available for use or consumption (Lowe, 2003). They help overcome differences in required quantities and timing, ensuring that products are available when customers are ready to buy them.

Some models normally comprise of activities such as transportation and inventory management, striving for efficiency in terms of customer service, prices, delivery performance (punctuality and reliability) and avoiding stocks-out.

Technology and information management represent the set of processes, people and technology that allow sharing of information and communication with market and between firms (Rao et al., 2006). Due to the progress made by technology in recent years (e.g. EDI, DSS, MRP), organisations have achieved significant advantages in the management of supply chains (e.g. e-commerce, e-logistics, JIT, traceability).

Reverse logistics controls activities such as faulty products, recycling activities, reuse and recollection of defective products and/or environmentally dangerous products (Genchev, 2008; Srivastava, 2008). Good reverse logistics practices and the application of green logistics principles could help an organisation to reduce the total management cost of the supply chain and allow up-gradation in market positioning and brand image. Green logistics takes in all the activities related with the selection of the best means of transportation, load carriers and transportation routes in order to reduce the environmental impact on whole of the supply chain. Both concepts may be crucial in order to create a sustainable supply chain.

Strategic alliances are taken as long-term accord with strategic partners for improving the entire Demand Supply Chain (Yang, 2009). Communication and the existence of a good relationship (flexible, personal and participative) with partners are essential. All members in the supply chain must look for excellence, interdependence, investment, integrity and integration.

Currently most of the supply chains are global, which means that raw materials and components are procured from all over the world, transformed into new products in some lucrative and competent regions, and ultimately sold on international markets (Christopher et al., 2006; Hilletofth, 2009). From a logistics point of view, globalisation started with the use of so-called focused factories. The idea behind these
factories is that each manufacturing unit produces only a limited range of products for the whole worldwide market (Skinner, 1974).

Lately, the globalisation has also led to enhanced competition, corresponding on increased product ranges, shorter product life cycles and increased customer specific adaptations of products (Christopher et al., 2004). Since suppliers still want to achieve economies of scale in production by the use of focused factories, and customers at the same time demand custom-made products and shorter lead-times, distribution becomes the important factor so as to ensure successful performance (Cohen and Lee, 1990; Fites, 1996; Waters, 2006).

Distribution is accomplished through a transportation-warehousing interface, which of late, has been under interest in global manufacturing research lately, due to ever larger manufacturing companies, transportation delays, accuracy, as well as new promising market opportunities (Tyworth and Zeng, 1998; Wilson, 2007; Taylor et al., 2008; Ivanova and Hilmola, 2009; Stalk, 2009).

In the logistics literature, there are conventionally two main strategies for distributing products to markets (Muckstadt and Thomas, 1983): the centralised distribution strategy and the decentralised one. The benefit of using the centralised distribution strategy is that it usually leads to higher service levels at lower cost; the disadvantage is that customers may have to wait longer for their products (Jonsson, 2008).

Decentralised distribution strategy often leads to shorter lead-times and higher flexibility, while as main disadvantage being that products may have to be stored at numerous places, which corresponds on considerably higher costs for warehousing (Harrison and van Hoek, 2008).

Depending upon how many central warehouses there are in the global distribution system, a change into distribution via local warehouses to central warehouses might have a significant effect on the lead-time, but could still be interesting from the point of view of cost and tied-up capital (Claesson and Hilletofth, 2010). In markets, where the customer is used to and might also be asking for short lead-times, there could often emerge disagreements. When these disagreements occur, it would be beneficial to have a substitute to the two main strategies that combine their advantages. In recent
times, the question has arisen about whether or not the in-transit distribution strategy might be exactly this sought after alternative (Hilletofth et al., 2010).

The ultimate goals of effective supply-chain management are to reduce cycle times, reduce inventory levels and, perhaps most significantly, increase customer awareness.

Distribution plays a significant role in a company’s performance in each of these areas and can represent a significant segment of logistics costs.

Distribution is an important logistics activity and contributes, on an average, the highest portion to the total logistics-related costs (Ballou, 1999). Distributors face complex problems of:

- Determining the optimal number, capacity, and location of facilities catering to more than one customers; and

- Discovering the optimal set of vehicle schedules and routes (Min et al., 1998).

The customer of the twenty-first century asks for products and services that are fast, right, cheap and easy (Dangayach & Deshmukh 2001). Advanced manufacturing technologies and distribution strategies have been heralded as a novel way for manufacturing companies to gain a competitive advantage (Pagell et al. 2000).

While processes such as stock control and warehouse management have been comprehensively investigated and supported by applications such as warehouse management systems (WMS), improvement opportunities still lie in the area of distribution management (Min et al., 1998; Ghiani et al., 2003; Ioannou et al., 2003). Companies require ample strategies for moving information and products quickly throughout their supply chain network. Supply chain management is currently viewed as an effective means of accomplishing successful competitive advantage.

Supply chain management involves controlling the flow of material, information, cash and services through several echelons of a supply chain network. Owing to the recent trends in international procurement, new technologies, increasing pressure from customers on responsiveness and dependability, and globalisation of operations as well as markets, supply chain management has become an increasing challenge and a
bigger opportunity. As the competitive context of business changes, it brings with it new complexities and concerns for the management of business (Christopher, 2003).

In a survey of supply chain practices in Indian industries, it was found that enhancing customer service/satisfaction outscores other supply chain objectives like expanding revenues, reducing inventory costs, lower product cost and improving on-time delivery, in terms of their effectiveness to the supply chain management (Sahay et al. 2001). A number of authors (Bowersox and Closs 1996; Cavinato 1991; Langley and Halcomb 1992; Stevens 1989) suggest that meeting customer demand is the eventual objective of supply chain management. To satisfy customers, industrial organisations have to reduce product development time, improve product quality, and reduce production costs and lead-times.


These texts discuss functions and flows in very common terms, and more often than not focus on a single industry/sector. Not only the focus is contracted, but also the organisation of texts is an issue with chapters organised around different sectors. An instance would be a chapter that focuses on retailing, industrial marketing or consumer goods channels. This action, as an opinion, does not recognise fully the similarities and differences that one finds across sectors in marketing channels. A thorough identification and recognition of these commonalities or lack thereof may prove beneficial to businesses in making strategic and operational decisions concerning leveraging existing channels to their “fullest potential” by adding or deleting products and services. They may also decide to adjust channels to suit their product and service portfolios.

2.3 Studies Focussing on Channel Structures of Some Industries

2.3.1 Automobile Industry

The Automobile industry in India is one of the largest in the world and globally one of the fastest growing. India's passenger car and commercial vehicle manufacturing
industry is the seventh largest in the world, with an annual production of more than 3.7 million* units in 2010. According to recent reports, India is set to go past Brazil to become the sixth largest passenger vehicle manufacturer in the world, growing 16-18 per cent to sell around three million units in the course of 2011-12*. In 2009, India became Asia's fourth largest exporter of passenger cars, behind only Japan, South Korea, and Thailand.* (*Source: OICA Report)

As of 2010, India is home to 40 million passenger vehicles. More than 3.7 million automotive vehicles were manufactured in India in 2010 (an increase of 33.9%)*, thereby making the country the second fastest growing automobile market across the globe (Gulati, 2010). According to the Society of Indian Automobile Manufacturers, annual vehicle sales are projected to increase to 5 million by 2015 and more than 9 million by 2020. By 2050, the country is expected to top the world in car volumes with approximately 611 million vehicles on the country's roads.

The Indian Automobile industry has observed major changes in the past few years. India has become a favourable destination for foreign companies to establish their facilities and form alliances with domestic companies. Low cost of manufacturing and conducive environment have been the major drivers for foreign companies investing in India. (www.Cygnudindia.com/ Background note on Supply Chain management In Automotive Industry, Auto SCM India 2006, Chennai). Particularly after liberalisation of the market, many global automobile manufacturers such as Ford, General Motors, Suzuki, Honda, Mercedes (in the car segment) and Piaggio, Suzuki, Honda, Yamaha, Kawasaki (in the motorbike segment) have established production bases or international purchase centres in India (Dangayach and Deshmukh, 2001).

The Indian Automobile Industry manufactures over 11 million vehicles and exports about 1.5 million each year.* The dominant products of the industry are two wheelers with a market share of over 75% and passenger cars with a market share of about 16%.* Commercial vehicles and three wheelers share about 9% of the market between them. About 91% of the vehicles sold are used by households and only about 9% for commercial purposes*. The industry has a turnover of more than US $35 billion and provides direct and indirect employment to over 13 million people.* (*Source: SIAM)
The distribution network of automotive industry in India is very akin to that of Europe and America. The orders of the industry arise from the bottom of the supply chain i.e., from the consumers and go through the automakers and climbs up until the third tier suppliers. The products, as channelled in every conventional automotive industry, flow from the top of the supply chain to reach the consumers. Automakers in India are the key to the supply chain and are responsible for the products and modernisation in the industry. However, there are many problems existing in the management of supply chain. For instance the issue of high logistic cost is pre-dominant. In this respect many companies have implemented supply chains and were able to accomplish a reduction of inventory by 50% and also reduce lead time from 52 to 19 days (www.cygnudindia.com).

Automotive manufacturers have been investing in the use of internet for managing and controlling the upstream supply chain but its use in the downstream supply chain has been very restricted (Adebanjo, 2008). Customers are now making use of the internet for gathering information on automobiles (Morita and Nishimura, 2006; Morton et. al., 2006). It is understood that the use of internet is also driven by their uncertainty about dealers and lower satisfaction with previous dealers (Dellaert and Haubl, 2004). The internet seems like a threat to dealers mainly because it has increased visibility, reduced difficulty in purchasing and getting better deals which eventually lead to dealers' profits being reduced in the face of amplified competition (Yoon and Kim 2001; Janson and Cecez-Kecmanovic 2005; Morita and Nishimura 2006; Zettelmeyer et al 2006).

With competition increasing in the Indian automotive market and the automobile industry becoming more globalised, much change is desired not only at the manufacture (assembler) level but also at the level of OEMs. Critical issues involve to become more competitive are managing JIT in in-bound logistics, frequent upgradation of product and increasing frequency of new product introductions, process improvements, outsourcing of warehousing, packaging and inbound logistics and above all an end to end supply chain management.(www.kmpg.doc/Indian Automotive Supply Chain)
2.3.2 FMCG Industry

The Indian Fast Moving Consumer Goods (FMCG) industry is more than Rupees 1300 billion in size. It touches the life of every Indian and therefore has perhaps the widest reach among all industries in India. The industry has tripled in size over the last 10-12 years, growing much faster than in past decades. The industry’s prospective to grow further and faster is tremendous, given the low penetration of most categories and rising consumer incomes (*CFS Report, 2010).

The industry began to shape during the last fifty odd years. The FMCG sector is a foundation of the Indian economy. This sector touches every part of human life. Indian FMCG market has been divided for a long time between the organised and unorganised sectors. Unlike the US market for FMCG which is dominated by a handful of international players, India’s Rs. 1300 billion FMCG market* remains highly fragmented with roughly half the market going to unbranded, unpackaged home made products. This presents a fantastic opportunity for makers of branded products who can motivate consumers to buy branded products.

India is currently rated the twelfth most lucrative emerging retail market and by 2025, it is poised to become the world's fifth-largest consuming country^\. It has been ranked second in the Global Retail Development Index (GRDI) of 30 developing countries (AT Kearney). Well-established distribution networks, as well as strong competition between the organised and unorganised segments are the characteristics of this sector. In India it has a strong and competitive presence of MNCs across the entire value chain. (^FMCG, India Brand Equity Foundation, November, 2010).

FMCG companies are among the most visible across the globe. Unlike several other sectors where multinationals have entered after 1991, they have been active in India for a long time in this sector. Distribution and channel management has been the competitive advantage for this sector ever since. The FMCG sector is the fourth largest sector in the Indian economy with a total market size in excess of Rs. 1300 billion*. The FMCG industry today has a substantial presence in every part of the country.
Given the uneven nature of the Indian retailing industry and the problems of infrastructure, FMCG companies have to develop far-reaching distribution networks to achieve a high level of access in both the urban and rural markets. Distribution in this sector was pioneered in India in the 1940’s by Hindustan Lever Limited.

Distribution and channel management has been the competitive advantage for this sector ever since. The $6.1 billion Indian foods industry, which forms 44 per cent of the entire FMCG sales, is growing at nine per cent. In the second quarter of 2006, the branded food segment was among the top movers in the FMCG category.

FMCG’s have a short shelf life, either as a result of high consumer demand or because the product deteriorates rapidly. Some FMCG’s – such as meat, fruits and vegetables, dairy products and baked goods – are extremely perishable. Other goods such as alcohol, toiletries, pre-packaged foods, soft drinks and cleaning products have high turnover rates.

The following are the main characteristics of FMCGs (Majumdar, 2004):

From the consumers' perspective:

- Frequent purchase
- Low involvement (little or no effort to choose the item – products with strong brand loyalty are exceptions to this rule)
- Low price

From the marketers' angle:

- High volumes
- Low contribution margins
- Extensive distribution networks
- High stock turnover

2.3.3 Textile Industry

The Indian Textiles Industry has an overwhelming presence in the economic life of the country. Apart from providing one of the basic necessities of life, the textiles
industry also plays a pivotal role through its contribution to industrial output, employment generation, and the export earnings of the country.

In the one trillion dollar Indian economy, the textile and garment industry has emerged as one of the key sectors in the Indian Economy in terms of investment, production and employment. It is directly linked to the rural economy and to the agriculture sector. It has been calculated that one of every six households in the country, either directly or indirectly depends upon this sector (Dhanabhakyam and Shanthi, 2008).

This industry is robust and well established, enjoying huge demand in domestic as well as the global market. Its capacity has been incessantly increasing after dismantling of quota regime. The major factors in determining success of this industry are economies of scale with higher productivity and low cost. India has a plus point with the existence of a complete value chain of textiles with the production of yarn, fibre, fabric, and readymade garments.

Only 5% of fabric emanates from the organised mills and 57% comes from the disorganised power looms. In an industry, which is dynamic and ever changing because of volatile demand (uncertainty of demand), which is significantly seasonal, where short product life cycles dominate, competitive intensity is high, only those companies that can organise for functional integration (right from sourcing to final sale) would excel. Flexibility is need and that too in small lots. Power looms are better suited as suppliers as compared to organised mills as they cannot competitively produce. Yet the textile and garment sector is characterised by low productivity because of a highly fragmented supply chain (Varma, 2002).

Indian textile industry has one of the most complex and lengthy supply chains in the world with 15 intermediaries between the farmer (grower) and the final consumer (of garments). This leads to increased costs and higher lead times.

It is also highly fragmented mainly because of its policies and lack of coordination between industry and relevant trade bodies. The government policy favouring SSI, preventing modernisation, quality investment, scale adoption, and change in product mix from exclusive reliance on cotton garments to mass clothing items based on
synthetics and man-made fibres has added to its woes. Further, inadequate development of retail industry in India, has added to the low level of competitiveness in the entire manufacturing value chain. Countries which have a robust supply chain have proved to be successful (Varma, 2002).

Currently, it contributes about 14 percent to industrial production, 4 percent to the GDP, and 17 percent to the country’s export earnings*. It provides direct employment to over 35 million people, which includes a substantial number of SC/ST, and women. The Textiles sector is the second largest provider of employment after agriculture. Thus, the growth and all-round development of this industry has a direct bearing on the improvement of the economy of the nation. (*Ministry of Textiles, Annual Report, 2009-10). This sector is the second largest employment provider after agriculture employing about 35 million people in the country*. Moreover, it is also estimated that 50 million people are associated with this industry for related activities. The industry attracted investment of Rs.33000 crore in the financial year 2006-07, which rose by 51% from the investment in previous year. The textile industry in India is worth $47 billion which constitutes $30 billion in domestic market and $17 billion for exports market (Report by ASSOCHAM, 2007).

Textile and garments is the second largest export sector in value terms in India after engineering goods. They jointly contribute 15.56% in the total merchandise exports which comprises of 7.51% textiles and 8.15% readymade garments. In the financial year 2006-2007, this industry grew by 6.76% and 0.83% amounting to $8.3 billion and $8.6 billion in comparison to 9% and 28% growth in fiscal 2005-2006 (Apparel Export Promotion Council, 2008). It is also India’s largest earner of foreign exports accounting for 35% of the gross export earnings in trade (Report by ASSOCHAM, 2007). Government has made commendable efforts to boost this sector by developing various schemes such as Technology Upgradation Fund Scheme (TUFS), and Scheme for Integrated Textile Parks (SITP) which will further fortify the manufacturing base in textile and garment sector as a whole.

**2.3.4 Footwear Industry**

During the 1980s and 1990s, an increasing number of footwear producers engaged in contract manufacturing for a declining number of global buyers. In this overall
constellation, captive relationships became the custom. This came out clearly in a study on how global buyers source footwear from Brazil, China and India (Schmitz and Knorringa, 2000).

However, not all chains were or are captive. Hsing (1999) shows that some Indian fashion shoe companies export through small trading companies with whom they seem to have more smooth interactions. Bazan and Navas-Aleman (2004) in particular stress that there are huge variations in the organisation of chains. In their analysis of Indian footwear producers they found that: producers exporting to the US (main market) belong to captive chains; relationships with European buyers are also uneven but less so; exporters to Latin American countries are not dominated by their buyers, relationships are more market-based and some manufacturers have managed to operate simultaneously in different kinds of chains.

Footwear is said to be the engine of growth for the entire leather industry as it comprises of 60% of total leather exports. India is the second largest global producer of footwear after China, accounting for 14% of global footwear production of 14.52 billion pairs. India exports about 115 million pairs. Nearly 95% of its production goes to meet its own domestic demand. There is high domestic consumption of footwear within India, due to an expanding middle class, especially within urban areas (www.leathermag.com).

Supply chain in footwear is quite complex and different from supply chain of other industry. (Ioannou, 2010) It starts from raw hide production to cleaning to final sale through retail network. Though modern format for footwear retail is one of the most organised retail formats in India, there exists poor visibility in the supply chain.

Supply chain of footwear industry in India is highly fragmented (60% of companies are proprietorship or partnership firms which are highly labour intensive, and who lack scale, management know-how, IT deployment low). 4000 units are engaged in the manufacture of footwear which is dominated by SSI which contribute to 55% of overall production. Further, the supply chain is characterized by long lead time of 3-6 months, delayed deliveries (on-time deliveries being less than 70%; because of poor infrastructure-power, delay at ports), and lack of flexibility in product mix and
volume, and low visibility (companies do not share buyer information) and a very low level of collaboration among the various entities of the supply chain.

The footwear market in India is growing steadily and local manufacturers need to keep abreast of the latest trends happening in this industry to tap on the growing demand in the domestic as well as international market. This sector has received substantial support from the Indian government. There has been technology inflow and foreign direct investment. The entire leather sector is now 'de-licensed' and 'de-reserved'. Also setting up of Central Leather Research Institute (CLRI), Council for Leather Export (CLE), Footwear Design and Development Institute (FDDI), to name a few, is giving the right direction to this sector.

Bata has 60% share of the organised shoe market and sells 60 million pairs a year. The company has a network of 1600 showrooms (1100 owned and 500 franchised), 500 wholesalers and 30,000 small dealer shops to which it supplies 1200 product lines. Brand loyalty and reach have been the vital factors in the success of the firm for the 70 years of its existence.

To counter old fashioned image perceptions of the firm is a challenge that Bata is struggling with at the moment. The entry of several well known foreign brands has also had its impact although some of the firm’s showrooms stock Reebok, Nike etc. A large number of new footwear showrooms have opened up in the recent years and many of them are linked with and are dedicated to brands that compete with Bata. Sports and casual wear market is branded and differentiated, and this is an area that Bata cannot match the investments and promotion of multinationals like Nike and others.

2.3.5 Chemical Industry

The chemical industry, which comprises of basic chemicals and their products, petrochemicals, fertilisers, paints and varnishes, gases, soaps, perfumes and toiletries, and pharmaceuticals, is one of the most diversified of all industrial sectors covering thousands of commercial products. It plays an important role in the overall development of the Indian economy by contributing about 3% to the GDP of the country (Ministry of Chemicals and Fertilisers, Annual Report, 2010-11).
Chemical industry is one of the oldest industries in India which contributes significantly towards industrial and economic development of the country. The industry, comprising both small scale and large units (including MNC’s), produces several thousands of products and bi-products, ranging from plastics and petrochemicals to cosmetics and toiletries.

This industry is sixth largest in the world and third largest in Asia (next to China and Japan) in the year 2008, providing important chemicals for a vide variety of products such as textiles, paper, paint and varnishes, and leather, etc. According to the latest available estimates of the UNIDO, the size of the Indian chemical industry in the year 2005 was $54.92 million. The chemical industry produced around 8 million metric tonnes each of basic chemicals and basic petrochemicals, and around 10 million metric tonnes of petrochemical intermediaries in 2005-06 (EXIM Bank of India, 2007).

Indian chemical sector has come a long way since its early days of independence. The sector has grown from a small-scale sector to multi-dimensional sector, which is taking on the challenges of globalisation. Now, Indian chemical industry holds a recognised position on the global map. However, there are few factors, which hinder the growth of the industry. These include:

**High prices of basic feed stock:** Basic raw materials add up to major portion of cost of production (30% to 60%) in the chemical industry. Indian chemical industry either uses natural gas or crude oil as feedstock for manufacturing process. The fluctuations in oil prices, therefore, affect the growth assessment of the firms.

**Fragmented nature of industry:** The Indian chemical industry is having a fragmented structure with more number of units in small-scale sectors spread in various parts of the country. The installed capacities in most of the small-scale units are smaller as compared to global scales. The limitation in capacity in the small scale industries sector put them in disadvantageous position while tapping export opportunities with large volume.

**Low R&D levels:** R&D intensity is assuming greater significance for many of the manufacturing segments. Since, chemical industry is a knowledge based industry, the
competitiveness of the units can be strengthened only through supply of new and innovative products. The areas for R&D in chemical industry include improvements in manufacturing process for reduction in cost of production, application development to diversify demand, and new product development.

2.3.6 Newspaper Industry

The Indian press is more than two centuries old. Its strengths have largely been shaped by its historical experience and, in particular, by its association with the freedom struggle as well as movements for social emancipation, reform, and amelioration. The long struggle for national emancipation; controversies and battles over social reform; radical and revolutionary aspirations and movements; compromising as well as fighting tendencies; and the competition between self-serving and public service visions of journalism – these have all found reflection in the character and performance of the Indian press over the long term (Ram, 2000).

Newspapers are sold in India at prices as low as Rs.2. Advertising revenue is said to be the main source of income for businesses in this sector. Margins to distributors, wholesalers, retailers, and hawkers account for as much as 50% of sale prices. This business requires “direct-to-consumer’s-door-delivery”.

India is a linguistically diverse country and the large array of languages in which newspapers are published is indicative of this. Hindi and English are the two languages that have greater national coverage, the others tending to be concentrated in particular states. There has been a remarkable rise in circulation of newspapers published in these regional languages with growing literacy following independence (Jeffrey, 2000).

In India, the growth trends in circulation and readership are especially strong in the Indian language sectors of the press, led by Hindi. But the buoyancy and implications of this development need not be exaggerated, as it comes on the back of extreme under pricing of cover prices and the dumping of hundreds of thousands of copies that go straight to the radhi market (Ram, 2011).
Timely delivery is essential, and unsold copies have little value. Firms clash for circulation figures which help in raising advertising revenues. Movement of goods is a key sales and distribution function. Main cities and towns are easy to serve when production (local editions) is local. The only precondition is minimum volumes or circulation levels as it reduces overhead costs.

Literacy, basic communications and adequate technology are essential to the development of a daily newspaper culture but momentous events provide the link between these developments and politics – the link that seems to send circulations shooting upwards. People need the stimulus of exciting times to hook large numbers of them on the daily newspaper habit (Jeffrey, 1987).

2.4 Studies Specific to Distribution of Mobile Handsets

Mobile telephony was introduced in India in 1995. The first call was made by Nokia 2110 on its own network. The start to this industry in India, however, was very slow. The Indian government was not supportive to the new companies of the industry. As a result of unfriendly telecom policies, high licensing fees and absence of a proper telecom regulatory body lead to exit of these private players in the next few years.

The industry emerged again in 1999, when the Government of India announced a new telecom policy. The plan was to provide telephones on demand by 2002. A major point of the policy was to allow unhindered private entry into almost all mobile service sectors. The mobile service providers were allowed to share their infrastructures with other operators. It also helped the private operators to break even faster by allowing them to migrate from fixed license to one-time entry fee with revenue sharing.

However, by 2001, there was steady increase in the demand for mobile services. The private companies concentrated on providing basic telephonic services to consumers.

By 2002, the industry was on a high, and with the attractiveness of mobile phones the customers started demanding better services and lower prices. This led to new innovations with better products and services. In 2002, the industry’s growth got
fuelled as incoming calls on mobile phones were made free. The sudden increase in growth on mobile phone subscriber can be seen in the following table:

<table>
<thead>
<tr>
<th>No. of Mobile Phone Subscribers</th>
<th>Time Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 1 Million</td>
<td>1995-1998</td>
</tr>
<tr>
<td>1 – 5 Million</td>
<td>1998-2001</td>
</tr>
<tr>
<td>5 – 10 Million</td>
<td>2001-2002</td>
</tr>
<tr>
<td>10 – 50 Million</td>
<td>2002-2005</td>
</tr>
<tr>
<td>50-100 Million</td>
<td>2005-2007</td>
</tr>
<tr>
<td>100-400 Million</td>
<td>2007-2009</td>
</tr>
<tr>
<td>400-&gt; 850 Million</td>
<td>2009-2011</td>
</tr>
</tbody>
</table>

Table 2.1 Growth of Mobile Phone Subscribers*

There were a few points noted in 2004 that showed great potential in Indian mobile phone market. Firstly, the mobile phones sales growth was amongst fastest in world by June 2005 with additional 2.57 million* subscribers being added. Further, in 2004, the mobile subscribers in India were 5 per hundred, which was meagre as compared to China (25.9 per hundred), Russia (42 per hundred), Brazil (37.5 per hundred) and other developing countries (Indu. P, 2005). (*Source: TRAI)

The benefits that come from the mobile usage can be functional, such as mobility, ease, availability, timeliness, practical-ness and/or psychological and social, above all security which, in turn, can be rational, emotional or experiential (Holbrook, 1999).

This is predominantly apparent in the mobile phone market, in which the very differentiating factors are no longer the core product innovations, that can be easily commoditised, but the additional attributes that bring added value. A wide range of value-added services, such as call-divert and mail box facilities, are now becoming standard. However, the intense competition has led to a sharp fall in prices, which have enhanced the commonality of mobile phone usage, and have led to the mobile phone becoming an increasingly common part of everyday life in most developed countries.

Branding offers the marketers the escape mechanisms from the commodity coil. It provides a higher value appealing the product with new dimensions. In fact, when the
product as driver of customer values begins to get commoditised, brand helps enhancing value by adding dimension and promotes discrimination (Verma, 2007).

The mobile phone industry has experienced an unanticipated growth rate due to the combination of various factors, such as technological change, market demand and the evolution of competition. Approximately 95 per cent of all nations have mobile phone networks, and the majority of these countries have more mobile phone than landline subscribers, and perhaps today more mobile phones than TVs (Botelho and Pinto, 2004).

Unlike any prior technology, mobile phone is now looked upon as a social necessity, especially among teenagers (Kasesniemi and Rautianinen, 2002; Skog, 2002).

The mobile phone has become a true “extension of man” (Castells et al., 2004). Its use and adoption in everyday routine fosters the positive attitude towards its role in life.

This might be credited to self-reinforcement and re-affirmation involved in attitude change and the adoption of innovations (Rogers, 1995). The rapid global adoption and use of the mobile phone challenge the traditional gender boundaries and other traditional dichotomies, such as work versus leisure, freedom versus control; old versus young; technology versus nature, etc.

From a simple status symbol positioning, mass mobile embracing has been repositioned in relation to the benefits it provides. In fact, it enables people to widen their communication capacity, creating new time and space relations. It grants omnipresent access to services (Watson et al., 2002). The status-symbol system itself has become experiential, where objects communicate as symbols since they are linked to status-symbolic experience (Kelly, 1987). Certainly, the mobile phone has become an everyday, highly regarded, multipurpose interpersonal communication device rather than a working tool (Levinson, 2004; Ling, 2004). Subscribers show heterogeneous demand influenced by significant variables, such as price sensitivity, specific product attributes, brand notoriety and individual lifestyle.

Previous studies on consumer behaviour related to mobile technology, although scarce, highlighted that, since mobile devices have become multi-functional consumer
products, bundling with other consumer products such as MP3 players and digital cameras, consumers’ choices are oriented to acquire different entertainment opportunities. As a consequence, trust on technology, which can be reinforced through a strong brand, proves to be a primary factor affecting consumers’ intentions of using a mobile system for enjoyment, that are representative of hedonic outcomes (Nah et al., 2003).

The uncertainty or perceived risk related to the usage of newly emerging technology raises the issue of trust of the technology (Doney and Cannon, 1997). The strength of influence of hedonic and utilitarian value is expected to depend on the mobile trust level. When highlighting the role of trust of technology, mobile technology trust lets customers shape their attitudes and behaviours on the utilitarian basis.

In this market corporate brands compete through distribution and promotion strategies, based mostly on a co-marketing approach with the service providers. In fact, the handset manufacturers, despite their strong brand identity, choose to strategically cooperate with the service providers in order to create a unique selling proposition. The strong relationship and interaction between firms and customers redesign the competitive advantage; the constant innovation driven approach, which is based on the technological paradigm, is combined with strong marketing actions to develop loyalty relationship with the market.

However, even though the mobile market is greatly subject to the commoditisation phenomenon, the brand is one of the most strategic elements in distinguishing the products as well as the consumer.

In developing a corporate imagery of a product, the importance of various marketing mix variables (e.g. product appearance, brand name, price) is firmly established, as well as that of the imagery elicited by a product’s Country of Origin (COO). In the words of Mort & Duncan (2000), “COO effects can be summarised as the effects generated by a product’s perceived geographic origin on the part of the customer and how it affects the latter’s purchasing patterns.” It’s a tendency of consumers to generalise their attitudes and opinions across products from a given country. The basis of this generalisation is product’s familiarity and background with the country, and
their own personal experiences of product attributes such as “technological superiority”, “product quality”, “design”, “value for money”, “status and esteem”, and “credibility of country-of-origin” of a brand (Kinra, 2006). Thakor and Lavack (2003) believed that perceived origin associations are a powerful source of brand appeal. This can be noted as marketers have focused on origin associations in many product categories in the advertisements of their products. Brand has been considered as a purely extrinsic variable in COO effects and consumer perceptions of origin have been manipulated almost through “made in” label information (Mohamad et. al., 2007).

According to research works, COO image plays an important role in consumer’s evaluation of foreign products and brands. It is also noted that product attributes such as product quality have favourable perception, if country perceptions are favourable. This indicates that consumer evaluations are governed by influences other than the quality of the product (Peterson and Jolibert, 1995). “Common sense has it that the stronger a country’s national image, the more useful is it likely to be as a marketing tool in that it may then be used more extensively in the export promotion of products originating from that country” (Niss, 1996).

Indians give very high value to brands. In India, a brand is a cue to quality because the quality of the unbranded products varies widely (Johansson, 1997).

Mobile phones today have moved beyond their fundamental role of communications and have graduated to become an extension of the persona of the user. We are witnessing an era when users buy mobile phones not just to be in touch, but to express themselves, their attitude, feelings and interests.

Customers continuously want more from their phone. They use their cellular phones to play games, read news headlines, surf the Internet, keep a tab on astrology, and listen to music, make others listen to their music, or check their bank balance. Thus, there exists a vast world beyond voice that needs to be explored and tapped and the entire cellular industry is heading towards it to provide innovative options to their customers. Spoilt by choice, the mobile phone subscribers are beginning to choose their operators on the basis of the value added services they offer. The increased
importance of VAS has also made content developers burn the midnight oil to come up with better and newer concepts and services.

India is the world’s 12th largest consumer market. It is projected that by 2025, it will be ahead of Germany and will become the fifth largest economy of the world. There is an explosive growth in almost all the areas of consumer goods and services. Communication that accounts for 2 percent of consumer’s spending today will be one of the fastest expanding categories with growth of about 13 percent (McKinsey, 2007).

The market for the mobile handset is also growing with the growing demand for mobile telecom services. This demand will continue to grow in future also. India at present is the second largest market for mobile handsets (Indian Brand Equity Foundation, 2005). The growth in this sector has been improved due to liberalization of telecommunication laws and policies. The consumers of both rural and urban areas, from college-going students to mature elders, of almost all income groups have started using mobile telecom services.

According to Indian Brand Equity Foundation (2005), the mobile handset market, which was worth about $2 billion two years ago, had shown a growth of 60% per annum. The GSM (Global System for Mobile Communications) handsets had 84% share and CDMA (Code Division Multiple Access) handsets has 16% market share. There are various players in the GSM market. Nokia was leading the market with 59% market share (Prashant, 2005). Among the other players, the prominent are Sony Ericsson, Samsung, Motorola and LG. They are offering wide range of models for the users of different preferences.

Approximately one-sixth of the total mobile phone customers are at the ‘very base of the economic pyramid’ (BOP), with per capita incomes of less than $1 per day.

A recent study by London Business School found that, in a typical developing country, a rise of ten mobile phones per 100 people boosts GDP growth by 0.6 percentage points (Waveman et al., 2005).

Most of the mobile manufacturers do not try entering the low income group markets; some others have quietly pursued strategies of experimentation in developing unique
product and service propositions for some of the world’s most needy consumers (Prahalad and Hammond, 2004).

One of the world’s biggest challenges of serving BOP markets is to ensure availability of mobile products and services throughout the country, and not just in cities. Unlike in the developed world, distribution channels in BOP markets can be fragmented or non-existent and the task of simply getting products to people can be a major hurdle to overcome.

Mobile firms face a lot of problems reaching out to low income consumers in India’s 627,000 villages, spread over 3.2 million square kilometres, which do not even have proper roads and are not well connected to other cities. During monsoons these rutted dirt tracks are completely washed away. In such conditions, the time taken to reach out to these consumers, living in the poorest of villages, increases significantly leading to stretched supply chains and adding cost. So while there might be a significant BOP market of more than 700 million Indians, delivering mobile telecommunication services to them is not easy.

Further, BOP consumers have low disposable incomes. These consumers receive their income on a daily rather than weekly or monthly basis. Two-thirds of the Indian villagers are in the bottom income band making them acutely sensitive to price, and more than two-thirds of their income is typically spent on food. Other products such as soaps, shampoos, medicines and even telecommunication services must be purchased with the meagre income that is left over.

2.5 Studies Addressing Different Dimensions Having an Impact on Distribution Strategies

2.5.1 Supply Chain Management and Distribution

The definition of “supply chain” seems to be more common across authors than the definition of “supply chain management” (Cooper and Ellram 1993; La Londe and Masters 1994; Lambert, Stock, and Ellram 1998). La Londe and Masters (1994) proposed that a supply chain is a set of firms that pass materials forward. Normally, several independent firms are involved in manufacturing a product and placing it in the hands of the end user in a supply chain (i.e., distribution)—raw material and
component producers, product assemblers, wholesalers, retailer merchants and transportation companies are all members of a supply chain (La Londe and Masters 1994). In a similar context, Lambert, Stock, and Ellram define a supply chain as the alignment of firms that brings products or services to market. Note that these concepts of supply chain include the final consumer as part of the supply chain.

Another definition notes a supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer (Christopher 2003). In other words, a supply chain consists of multiple firms, both upstream (i.e., supply) and downstream (i.e., distribution), and the ultimate consumer.

Supply chain management (SCM) has been receiving the attention of managers, consultants and researchers since the early 1980s, thus, it cannot be considered a completely new field of research. Various authors (Christopher, 2003; Harland, 1996; Cooper et al., 1997; Croom et al., 2000) cite the work of Oliver and Webber (1982), entitled “Supply Chain Management: Logistics Catches Up with Strategy”, as the publication in which the term “Supply Chain Management” was used for the first time. In both this and other early publications (Houlihan, 1985; Jones and Riley, 1985) the term was used with reference to management techniques which sought to reduce the stocks held in firms of the same supply chain, linked by customer–supplier relationships.

Recent years have witnessed a renewed growing excitement and top management attention on the subject of SCM in consequence of the impressive results of successful SCM programmes achieved in supply networks co-ordinated by large, high performing focal firms, such as Hewlett-Packard (Davis, 1993; Lee et al., 1993), Compaq (Sweeney, 1995; Zarley and DaMore, 1995), Digital Equipment Corporation (Arntzen et al., 1995), Xerox (Camp and Colbert, 1996; Hewitt, 1997), and Benetton Group (Camuffo et al., 2001).

Numerous examples of companies who appear to be successfully managing their supply network witness how, according to a SCM approach, organisations do not seek
to achieve cost reductions or profit improvements at the expense of their supply
network partners, but rather seek to make the supply network more competitive as a
whole. Thus, SCM can help firms to improve supply by devising better distribution
strategies, which should translate into improved competitiveness and benefits for all
parties involved, in terms of more efficient use of resources in achieving the final
customer service goals, improved relationships between supply network members,
more precise planning and control of materials and information flows from suppliers
to end users, reduction in supply network inventories, lead time compression, etc.
(Ellram, 1991; Cooper and Ellram, 1993; Cooper et al., 1997; Simchi-Levi et al.,
2000).

As some authors noted (New, 1995; Saunders, 1995; Harland, 1996), the concept of
SCM has gradually been developed from the original one—centred on inventory
management across supply networks—into a concept with a broad span of concern
and a holistic approach which aims to "...integrate all the key business processes,
from end users to original suppliers, which provide products, services and information
that add value for the customers" (Cooper et al., 1997).

2.5.2 Relationship Management and Distribution

Companies world-wide recognise the importance of meeting customers' needs to
succeed in the competitive market-place. They realise that optimising operations
within the four walls of their enterprises is not enough to achieve business excellence.
They understand that the involvement of suppliers, distributors and retailers, which is
critical to improve quality and meet customer specifications, can enhance their
performance.

Christopher (2003) defines a supply chain as the network of organisations that are
involved, through upstream and downstream linkages, in the different processes and
activities that produce value in the form of products and services in the hands of the
ultimate consumer.

According to Ellram (1991), SCM is an integrative approach to dealing with the
planning and control of the materials flow from suppliers to end-users. It manages the
distribution of goods and services in the supply chain as well as the flow of cash and
information. It is an approach aimed at cooperatively managing and controlling distribution channel relationships for the benefit of all parties involved, to maximise efficient use of resources in achieving the supply chain’s customer service goals.

Channel management research and practice has long recognised the importance of managing relationships between the people and firms performing distribution functions-functions that create value by making products and services available to customers in an appropriate form at the right place and time.

Macneil (1980) indicates that pure discrete transactions are rare in business exchanges. Almost all channel transactions have some relational elements that can be used to coordinate channel activities and manage relationships between channel members (Frazier, 1983; Gaski, 1984; Reve & Stern, 1979; Hunt, Ray & Wood, 1985).

Manufacturers, distributors and retailers have recognised that the management of distribution activities offers significant opportunities for firms to create strategic advantage and achieve extraordinary financial performance.

Empirical research shows that channel members who are committed to a relationship perceive the relationship to be characterised by trust, commitment and idiosyncratic investments as well as perceived benefits, good communications, satisfactory prior interactions, shared values and goals, functional conflict, balanced power or dependency and limited opportunistic behaviour (Anderson & Weitz, 1992; Anderson & Narus, 1990; Ganesan, 1994; Heide & John, 1998; Morgan & Hunt, 1994).

Further, risk reduction is a potential benefit of channel relationships (Achrol & Stern, 1988).

Thus, an important aspect of distribution strategies is to lay emphasis on better channel relationships for it may help each and every member involved in the supply chain in achieving their targets easily and may guarantee better returns and improved coordination.
**2.5.3 Technology and Distribution**

Whilst mid in an era of rapid development in technology, companies face increasing need to coordinate their logistics activities with their up and downstream counterparts, that is, in their supply chains. New technological solutions have provided companies with completely new ways for information sharing in support of coordination and on the other hand, for handling of transactions with less friction.

Technology has had a substantial impact on supply chains and distribution. Scanners collect sales data at the point-of-sale and electronic data interchange (EDI) allows these data to be shared immediately with all stages of the supply chain. The application of these technologies has substantially lowered the time and cost to process an order, leading to impressive improvements in supply chain performance (Cachon and Fisher 1997, Clark and Hammond 1997, Kurt Salmon Associates 1993).

It is now a general belief within industry that capturing and sharing real-time demand information is the key to improved supply chain performance. Sharing demand and inventory data can improve the supplier’s order quantity decisions in models with known and stationary retailer demand (Bourland et al., 1996; Chen, 1998; Gavirneni et al., 1999; Aviv and Federgruen, 1998). Lee et al. (2000) use shared information to improve the supplier’s order quantity decisions in a serial system with a known autoregressive demand process. Liljenberg (1996) studies how to use shared information to improve the supplier’s allocation of inventory among the retailers.

Recently with development of technology, the concepts of supply chain design and management have become a popular operations paradigm. The complexity of SCM has also forced companies to go for online communication systems. For example, the internet increases the richness of communications through greater interactivity between the firm and the customer (Walton & Gupta, 1999).

Supply chain management emphasizes the long-term benefit of all parties on the chain through cooperation and information sharing. This confirms the importance of technology in SCM which is largely caused by variability of ordering (Yu et. al., 2001).
To keep costs down, an organisation must have a high level of discipline: each person knows what needs to be done, knows how to do it and does it quickly and efficiently. This argues for the organisation to have a high degree of standardised procedures and for everyone to be trained in these procedures and to execute them without question. Yet, in an ever-changing market place, it is important to also be able to innovate, to offer new service packages and new organisational linkages with the customer. To do this requires a discipline of change which encourages innovation and yet retains the stability of existing procedures until innovations are ready for wide spread adoption. Improved technology can address these problems and ensure better distribution.

2.5.4 Inventory Management and Distribution

Inventory management has become an integral part of distribution and supply chain management today. Proper management of the inventory ensures effective distribution, reduced costs and enhanced customer satisfaction.

Determining an optimal policy for an inventory system configuration is a difficult choice. Too often, the estimation of the costs of carrying inventory in a distribution system is limited because they are considered to be only a minor portion of the total distribution costs. However, inventory can represent a significant proportion of distribution costs.

Van Beek (1981) investigated different strategies for locating inventories in a two-level distribution system that consisted of a central manufacturing plant, a central distribution centre and four local distribution centres. The objective of the model was to determine the "best" distribution strategy that minimized the sum of inventory carrying and ordering cost over all stocking points in the system. Davis and Davidson (1991) observed a significant difference in cost between order sales and stock sales manufacturing in finished goods inventory for the auto industry around the world and concluded that the opportunity to shrink this inventory holds immense potential. Rajagopalan and Kumar (1994) analysed the issue of providing the customer with the option of purchasing from stock or by placing an order and found that the optimal quantity of stock to be held by the retailer decreases when the option of placing an order is offered. The basic design problem in any production and distribution network
is to match supply and demand at the output points of the system in the most economical way.

Most of the existing mathematical models have focused on individual components of the network design like warehouse location. They fail to include inventory cost as a component of their objective function and have assumed pre-specified transportation choices. The evaluation of strategic changes to a distribution system configuration involves the estimation of several costs and benefit measures, including the impact on the amount of inventory carried in the total distribution network. Perl and Sirisoponsilp (1989) proposed the only existing work on the interdependence between location, transportation and inventory decisions. In their paper, they provide a schematic representation of the interdependence between facility location, transportation and inventory decisions.

Strategic distribution centre location decisions can include determination and location of number of warehouses and plants, warehouse and plant capacity load ratio, assignment of customer demands to open warehouses and assignment of open warehouses to open plants among others. Strategic transportation decisions include choice of transportation mode (rail, truck, air, ship) and choice of type of carriage (common, contract, private). Other decisions can include the size of shipments (or shipment frequency), and assignment of loads to vehicles. Inventory decisions are concerned with total inventory level in the system, location of inventories, and levels of cycle stock at various locations. There is a strong interdependence among all three decisions. An increase in the number of distribution centres increases total system inventory. The location of inventories also determines the transportation mode choices, type, and choice of carrier. A decision to maintain good customer service would require the use of faster and more reliable transportation mode. A decision to change the average level of cycle stock held at a facility would lead to a change in shipment size. Due to recent trends in emerging technologies and competition, companies are convinced that it is no longer valid to assume that a single unit transportation cost is sufficient when we analyse among distribution centre locations, or to consider inventory decisions as related only to number and location of warehouses and independent from transportation decisions.
2.5.5 Environmental Management and Distribution

The decisions related to managing the supply chain and supply chain strategy are already considered important in many organizations. As more executives adopt environmental practices, supply chain strategies will only increase in importance.

With companies increasingly relying on their supplier’s environmental performance (Narasimhan and Carter, 1998), managers are coming to understand that environmental compliance is not sufficient; governments and consumers require better environmental stewardship. Environmental performance and the move to lean manufacturing, with its incumbent focus on cost effectiveness, exert greater pressure on materials departments to seek cost reductions in all materials-oriented processes, including disposal (Womack et al., 1990).

Discussions of environmental performance have usually focused on industries such as chemicals, petrochemicals, mining and semiconductors. Recently, though, managers have come to realise that a large and increasing amount of environmental risk can be found in nearly every company’s supply chain. The increasing interest in integrating environmental practices and business finds researchers considering ‘ecological sustainability’ as a framework for studying management practices (Sarkis and Rasheed, 1995; Klassen, 1993; Klassen and McLaughlin, 1993; Wood, 1991). ‘Environmentally conscious business’ now influences product design (Allenby, 1993; Sroufe et al., 2000), process design (Porter and van der Linde, 1995), manufacturing practices (Gupta, 1995; Klassen and McLaughlin, 1996; Thierry et al., 1995; Winsemius and Guntram, 1992) and more recently purchasing.

Integration of environmental performance with business and functional strategies is a dynamic, two-way process that relies on a number of information sources, including corporate objectives, business unit and functional capabilities, market objectives, competitive pressures and customer requirements.

The direct environmental input provided by functional and business-level executives to the business strategy development process drives strategic integration. In the end, a top-down communication structure cannot result in an integrated business and functional strategy. Linking environmental business strategy to each functional
strategy has the added advantage of linking all the functional strategies to one another, which helps to remove many of the barriers to environmental integration.

The process of linking purchasing and business strategy results in clear functional objectives that drive the formulation of specific environmental strategies for purchased materials, or commodities.

However, these strategies are never truly ‘implemented’ until they are integrated at the commodity or product family level.

2.5.6 Marketing Strategies and Distribution

Effective distribution of goods calls for proper marketing strategies so that the losses are reduced and productivity is increased. Top managers are constantly faced with the problem of how to trade off competing strategic marketing initiatives. For example, should the firm increase advertising, invest in a loyalty program, improve service quality, or none of the above? Such high-level decisions are typically left to the judgment of the chief marketing or chief executive officers, but these executives frequently have little to base their decisions on other than their own experience and intuition.

Some of the aspects that need to be assessed in order to form a marketing strategy may be Financial Accountability and Customer Equity.

Financial Accountability

Although techniques exist for evaluating the financial return from particular marketing expenditures (e.g., advertising, direct mailings, sales promotion) given a longitudinal history of expenditures (Berger et al. 2002), the approaches have not produced a practical, high-level model that can be used to trade off marketing strategies in general. Furthermore, the requirement of a lengthy history of longitudinal data has made the application of return on investment (ROI) models fairly rare in marketing. As a result, top management has too often viewed marketing expenditures as short-term costs rather than long-term investments and as financially unaccountable (Schultz and Gronstedt 1997). Leading marketing companies consider this problem so important that the Marketing Science Institute has established its highest priority for
2002–2004 as “Assessing Marketing Productivity (Return on Marketing) and Marketing Metrics.” The firms should achieve this financial accountability by considering the effect of strategic marketing expenditures on their customer equity and by relating the improvement in customer equity to the expenditure required to achieve it.

**Customer Equity**

Although the marketing concept has reflected a customer-centred viewpoint since the 1960s (Kotler 1999), marketing theory and practice have become increasingly customer-centred during the past 40 years (Vavra 1997). For example, marketing has decreased its emphasis on short-term transactions and has increased its focus on long term customer relationships (e.g., Håkansson 1982; Storbacka 1994). The customer-centred viewpoint is reflected in the concepts and metrics that drive marketing management, including such metrics as customer satisfaction (Oliver 1980), market orientation (Narver and Slater 1990), and customer value (Bolton and Drew 1991). In recent years, customer lifetime value (CLV) and its implications have received increasing attention (Berger and Nasr 1998; Mulhern 1999; Reinartz and Kumar 2000). For example, brand equity, a fundamentally product-centred concept, has been challenged by the customer-centred concept of customer equity (Blattberg and Deighton 1996; Blattberg, Getz and Thomas 2001). Customers and customer equity are more central to many firms than brands and brand equity are, though current management practices and metrics do not yet fully reflect this shift. The shift from product centred thinking to customer centred thinking implies the need for an accompanying shift from product-based strategy to customer-based strategy (Gale 1994; Kordupleski, Rust, and Zahorik 1993). In other words, a firm’s strategic opportunities might be best viewed in terms of the firm’s opportunity to improve the drivers of its customer equity.

**2.5.7 Distribution Network and Distribution**

Distribution refers to the steps taken to move and store a product from the supplier stage to a customer stage in the supply chain. Distribution channels are sets of interdependent organisations involved in the process of making a product or service available for use or consumption (Stern and Ansary, 1988). Distribution management
is an overarching term that refers to numerous activities and processes such as packaging, inventory, warehousing, supply chain and logistics (www.investopedia.com).

Very few products are sold by their producers directly to the end customer (McKinnon, 1989). For most of the part, products travel through one or more intermediaries, such as company-owned distribution functions, wholesalers, dealers, brokers and retailers.

Distribution is a key driver of the overall profitability of a firm because it directly impacts both the supply chain cost and the customer experience. Good distribution can be used to achieve a variety of supply chain objectives ranging from low cost to high responsiveness. As a result, companies in the same industry often select very different distribution networks. Effectively managing the entire distribution process is critical to financial success and corporate longevity. The larger a corporation or the greater the number of supply points a company has, the more it will need to rely on automation to effectively manage the distribution process (www.investopedia.com).

Distribution management decisions are at the core of marketing decisions for any company. This aspect is magnified in a country like India where high retail density, multitude of consumer classes and huge disparity between purchasing power, infrastructure, culture etc. makes sales and distribution very complex (Venugopal, 2008).

Dell distributes its PCs directly to end consumers, while companies like Hewlett Packard distributes through resellers (Magretta, 1998). Both companies have different distribution networks and are chosen keeping in mind various factors such as the cost, viability, customer base, location facilities, availability of raw material, etc.

2.5.8 Financial Strategies and Distribution

Great opportunities and challenges lie ahead in managing financial flows in supply chains. In the past thirty years, tremendous strides have been made regarding supply chain efficiencies—sharply reduced lead times, lower inventories, more responsiveness, increased variety, more collaboration on planning and forecasting, and improved customer service (Hausman, 2005).
In many business entities, financial, information and physical flows are often not synchronised. Managers take decisions from an operational or financial point of view and do not recognise the impact of supply chain management on financial performance or vice versa. Growth, profitability and capital utilisation are better optimised managed through information, financial and physical supply chains amalgamation. Operations and finance departments have to collaborate to reach to a common platform for achieving organisational goals (Saikrishna, 2011).

The value of supply chain initiatives should be measured in terms of impact on cash flow and market value, and on key internal financial performance metrics such as economic profit (EVA), return on capital, return on equity, working capital, etc.

Finances should be taken care in terms of labour management, hiring of transport, storage of inventory, secure warehousing and delivery on time. Optimising of finances is necessary because the supply chain forms a chain between the retailer and the customer and a lot depends on them, hence a need to understand the sensitivity of their job is a must for logistics personnel. This can be achieved with sensible hiring and optimisation of finances (www.indianretailer.com).

The supply chain financial flow is at a critical threshold of evolution. Current trends in supply chain and financial flow management clearly favour the use of automated payment solutions. Continued expansion in this area offers high potential for (Hausman, 2005):

- Reducing significantly purchasing processing costs.
- Accelerating payment and invoice reconciliation.
- Reducing collections costs significantly and minimising the number Days Sales Outstanding (DSO).
- Creating greater processing efficiencies in the procurement of goods.
- Enhancing visibility, which means less uncertainty in accounts receivable (A/R) and accounts payable (A/P) and a reduction in Working Capital needs.
In order to optimise the overall performance of the company, it is vital to help establish the link between effective supply chain management and enhanced financial performance.

2.5.9 Risk Management and Distribution

Manufacturing supply chains today tend to be global in nature, comprising of complex interactions and flows between tens, even hundreds and thousands of companies and facilities geographically distributed across regions and countries (Gaonkar and Viswanadham, 2004). Such chains are currently in operation in a variety of industries such as electronics, automotive, aerospace, etc. Despite their complexity, most manufacturing supply chains are structurally similar. The member companies in a typical manufacturing supply chain network include the suppliers and their suppliers, assembly plants, distributors, retailers, inbound and out bound logistics providers and financing institutions. In fact under the intense competitive scenario prevalent today, competition is no longer between companies but between supply chain networks with similar product offerings, serving the same customer.

Because supply chain performance is inherently unpredictable and chaotic, supply chain practitioners often must seek safety mechanisms to protect against unforeseen events (Tang et. al., 2007). Significant efforts are expended to expedite orders, to check order status at frequent intervals, to deploy inventory "just-in-case" and to add safety margins to lead times. These are some of the creative ways employed to counter the occurrence of unforeseen events. These time and material inventories along with limited communications among supply chain partners hide the problems until they lead to serious consequences. Whilst risk has always been present in the process of reconciling supply with demand, there are a number of factors, which have emerged in the last decade or so, which might be considered to have increased the level of risk. These include - a focus on efficiency rather than effectiveness; the globalisation of supply chains; focused factories and centralized distribution; the trend towards outsourcing; reduction of the supplier base; volatility of demand; lack of visibility and control procedures. As a result, it has become extremely important for channel masters to employ risk management tools in the management of their supply chains (Tang, et. al., 2007).
Supply chain risk is defined by the distribution of the loss resulting from the variation in possible supply chain outcomes, their likelihood, and their subjective values (Ponis, 2010). Supply chain risks comprise risks due to variations in information, material and product flows, which originate at the original supplier and lead to the delivery of the final product to the end user. Thus supply chain risks refer to the possibility and effect of a mismatch between supply and demand. Furthermore, risk consequences can also be associated with specific supply chain outcomes like supply chain costs or quality. Within this context, we can identify the following basic constructs of supply chain risk management:

- Risk sources,
- Risk consequences,
- Risk drivers
- Risk mitigating strategies.

An increased awareness of the existence of the disturbances and their sources of origin in the supply chain may enable better preparedness for handling or preventing them.

In the field of business logistics, these important risk-sharing issues are often mentioned but not further elaborated on (Cooper and Ellram 1993; Cooper et al., 1997; Motwani et al., 1998; Skjoett-Larsen, 1999; Mentzer et al., 2001).

One complication for supply chain risk sharing is that the companies involved often have different business logic, e.g. in terms of how their revenues and costs are generated, and the size, specificity and life span of investments. The firms have individual relations between revenue and product life cycles, “clock-speed” (Fine, 2000), and the design of products and processes. The differences in business logic and clock-speed might reduce truthful information sharing and introduce production inefficiency as well as risks of technological inefficiency. In other words, although the need for joint coordination and risk sharing might be larger, the increased asymmetry of information and business logic would probably result in the separate companies of a supply chain trying to myopically reduce their own risk. A lack of effective incentive structure to induce global supply chain optimization may promote the
opportunistic and myopic behaviour of the chain firms. This behaviour is Pareto-dominated, i.e. it implies a suboptimal overall chain profit and it may even threaten the long-term viability of the chain.

2.6 Gaps in Existing Literature

The review of literature brings out the following gaps:

- Majority of the studies reported in the literature are carried out in the context of developed countries. The number of studies carried out in the Indian context is scanty.

- When seen in the context of distribution strategies studies in different sectors, most studies be it in national or international context, pertain to auto and auto component sector.

- Scanty literature was available for mobile handsets. Most of the literature available referred to focussed case studies of industrial players. There is, therefore, an acute shortage of literature related to distribution strategies of mobile handsets in the Indian context.

The present research is an attempt to fulfil these gaps. Keeping in view the importance and relevance of distribution strategies for any product, a comparative study, which is undertaken, may prove to be useful in identifying where each player lacks and why one player scores over the other. An analysis of their strategies might be an eye opener for other players.

The identified gaps have provided direction and motivation for the present research, which is reported in the subsequent chapter.

2.7 Chapter Summary

In this chapter, extensive review of literature related to different aspects of distribution was presented. In line with the nature and scope of present research product development, studies related to distribution, logistics and supply chain management were reviewed and presented. Further, studies focusing on distribution as regards different industries in India were reported. Studies related to mobile handset
distribution were also presented. Lastly, studies linking different dimensions with distribution strategies were reviewed and compiled. Subsequently, the gaps in the literature were identified and reported. The identified gaps have provided direction and motivation for the present research, which is reported in the next chapter.
Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction
3.2 Problem Statement
3.3 Scope of the Study
3.4 Research Objectives
3.5 Data Sources
3.6 Development of Conceptual Model
3.7 Formulation of Research Hypotheses
  3.7.1 Hypotheses based on dimensions of distribution strategies across organisational variables
  3.7.2 Hypothesis based on relationship among the dimensions of distribution strategies
3.8 Research Design
3.9 Questionnaire Development
  3.9.1 Structure and Content Validity of the Questionnaire
  3.9.2 Factor Analysis using KMO and Bartlett’s Test for testing the Validity of the Questionnaire
  3.9.3 Reliability Analysis
3.10 Questionnaire Administration
  3.10.1 Target Respondents
  3.10.2 Sampling Technique
  3.10.3 Classification of Target Respondents
  3.10.4 Pilot Study
  3.10.5 Procedure for Data Collection
3.11 Tools of Analysis
  3.11.1 Exploratory Factor Analysis
  3.11.2 Reliability Analysis
  3.11.3 Analysis of Variance
  3.11.4 The T-Test
  3.11.5 Confirmatory Factor Analysis
  3.11.6 Structural Equation Modelling
3.12 Limitations of the Study
3.13 Chapter Summary
Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the problem statement, scope of the study, research objectives, development of conceptual model, formulation of research hypotheses, research design, questionnaire development and its administration. Further, this chapter briefly describes the research strategy and tools of analysis employed in this study. Finally, the limitations of the study are also discussed.

3.2 Problem Statement

Mobile telephony has become an integral part of the society today. India continues to be one of the fastest growing major telecom markets in the world. Sweeping reforms introduced by successive Indian governments over the decade have dramatically changed the nature of telecommunications in the country. The mobile sector has grown from around 10 million subscribers in 2002 to 884.37 million* by November 2011.

Further, it is estimated that approximately 2.97 million* subscribers are added to the mobile subscriber base every month. (*Source: TRAI)

But with this development, mobile manufacturers continually need to improve and enhance their distribution network and build a strong supply chain so as to be able to cater to the ever-growing needs and demands of the customers.

As soon as a brand new model of a popular mobile phone is launched and its promotion is done through different media, a customer wants that particular model to be available at the nearest mobile store the very next moment.

The mobile manufacturers need to follow the demands of the customers. For that, it is required that the distribution networks and strategies are so formed that there is virtually no time between the launch and availability of a particular handset.
In all marketing channels the product must move in the right quantity at the right time to a specific place in order to be delivered most efficiently to the customer.

In a time of shortening product life cycles, complex corporate joint ventures, and stiffening requirements for customer service, it is important to consider the complete scope of supply-chain management, from the supplier of raw materials, through factories and warehouses, to the demand from the customer for a finished product.

3.3 Scope of the Study

The present study aims to identify the current distribution strategies of mobile handset manufacturers in India with regard to the major players in the market based on their respective market shares.

For the present study, top four mobile handset manufacturers were chosen based on their respective market shares for FY 2009-2010*. They are:

1. **Nokia**, with a market share of 52.2%
2. **Samsung**, with a market share of 17.4%
3. **L.G.**, with a market share of 5.9%
4. **Micromax**, with a market share of 4.1%

(*Source: Voice&Data Journal)

The distribution process involves the efficient use of logistics and the supply chain. There are various components in the supply chain that need to be managed:

1. **Procurement**: The mobile companies either procure different components such as chipsets, consoles, batteries, etc. from the different outside sources or manufacture the same themselves. Proper management of purchase processes should be followed so that the right materials are available at the right place and at right time.

2. **Inventory Management**: Inventory must be properly managed so that there is adequate stock available for production always.
Inventory must be managed in a way so as to ensure that the stock is neither too much nor too less, as both these conditions are adverse for the company.

3. **Warehousing & Storage:** After the production is done, the firm may store the handsets at proper locations so that the distribution to the retailers may be made convenient as it would be too cumbersome to transport the handsets directly to each retailer.

4. **Transportation:** The firm must take great care during the transportation of the handsets and must ensure timely delivery to the desired locations.

5. **Packaging:** The handsets must be properly packed so as to ensure proper safety during transportation.

The firm can make use of **Third Party Logistic** firms specialising in the delivery operations so that the products reach the desired locations properly and in time.

6. **Information Management:** The manufacturer must have proper knowledge regarding the needs and wants of the customers. Proper communication between the channel members must exist so that useful information is shared between them in order to cater to the customers’ needs.

Further, the information regarding the various competitors, their strategies, market share, customer demographics, etc. must be possessed by the company.

7. **Returned Goods Handling:** This is one of the most important aspects in the entire logistic operations as the image in the minds of the customers regarding the product may be affected by not giving due respect to this aspect.

Few years back, Nokia Corporation recalled its defective BL-5C battery so that the customer may not suffer due to the danger it posed.

8. **Parts and Service Support:** The mobile companies make available the latest accessories as well as the spare parts to the customers in case they encounter any sort of problem with their handsets.
These firms also provide service for the handsets they sell to their customers so that the customer may remain loyal to the firms’ offerings.

9. **Customer Service Levels**: Nowadays, the mobile companies are trying to provide the best of products and services to their customers in order to stay ahead in market.

Various offers such as free service, gift vouchers, use of genuine parts, etc. are now being provided to the customers.

10. **Channel Management**: Proper management of the various channel members is the key to success. Proper and timely information sharing, proper communication and cooperation between the channel members ensure that the customers’ needs and wants are satisfied and may provide the firm a good market share.

### 3.4 Research Objectives

As discussed above, the mobile sector growth depends primarily on the distribution process as well as the management of the supply chain. This study attempts to analyse these processes as to how their betterment can enhance the sales and provide satisfactory service to the customers. Also, the study tries to find out approaches which can prove beneficial for the mobile firms in the context of market share and profitability. Specifically, the study aims:

- To identify the various factors that affect/influence distribution strategies of mobile handset manufacturers.
- To gain an insight into the current distribution dimensions adopted by the mobile handset manufacturers.
- To explore differences, if any, with regard to distribution strategies across different mobile handset manufacturers.
- To suggest distribution strategies to mobile handset manufacturers that may help them in reaching out to the customers in a better way.

### 3.5 Data Sources

Primary as well as secondary data sources have been used for this study. The primary data for this study have been collected from the manufacturers, distributors and
retailers associated with the chosen mobile handset companies. The mode of data collection from primary sources has been explained in Section 3.8. For secondary data, various studies were perused at different libraries. Much of the data have been collected from the libraries of Indian Institute of Technology, Delhi, Management Development Institute, Gurgaon and Faculty of Management Studies, University of Delhi. Various international journals published by Emerald, Science Direct, Springer, Inderscience, etc. were also accessed and were very helpful to the researcher. A substantial part of the data was also sourced from Maulana Azad Library, AMU, Aligarh and Seminar Library of the Department of Business Administration, AMU, Aligarh.

3.6 Development of Conceptual Model

The conceptual model has been crystallised after a thorough review of literature. This review covered various aspects of business operations. It helped in identifying nine different distribution dimensions that govern different aspects of distribution strategies. These nine dimensions of distribution strategies are Supply Chain Management (SCM), Relationship Management (RM), Environmental Management (EM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Network (DN), Financial Strategies (FS) and Risk Management (RSM).

A conceptual model indicating the impact of these dimensions on Distribution Strategies is presented in Figure 3.1
3.7 Formulation of Research Hypotheses

For the purpose of the present study, two sets of hypotheses were formulated. There are forty-nine hypotheses in all. The first set comprises of forty hypotheses formulated on the basis of different dimensions varying across different organisational variables. Based on review of literature, ten dimensions viz. Supply Chain Management, Relationship Management, Technology, Environmental Management, Inventory Management, Marketing Strategies, Distribution Strategies, Distribution Network, Distribution

Figure 3.1: Major Dimensions of Distribution Strategies*

(*Source: Developed by Researcher)
Strategies, Financial Strategies and Risk Management were identified that affect the overall distribution policies and strategies adopted by the members of the distribution network. The effect of these dimensions was tested against four different organisational variables viz. status of supply chain members (whether manufacturer, distributor or retailer), nature of the supply chain members (whether operation volume is small, medium or large), different handset brands (whether dealing in Nokia, Samsung, L.G., Micromax or multiple brands) and type of ownership of the supply chain members (sole proprietary or partnership). Second set comprising of nine hypotheses deals with statements that are formulated to test the effects of the nine independent dimensions on the dependent dimension i.e. Distribution Strategies.

The proper management of the distribution network helps in the proper flow of cash, information and physical goods. Further, it becomes important for the mobile manufacturers to follow JIT approach in the distribution network which may reduce the inventory holding times considerably.

Exhaustive literature review and discussions with industry experts and academicians have led to the development of the following hypotheses:

3.7.1 Hypotheses Based on Dimensions of Distribution Strategies across Organisational Variables

**H⁰₁:** There is no significant difference in the mean value of Supply Chain Management across the status of the supply chain members.

**H₁₁:** There exists a significant difference in the mean value of Supply Chain Management across the status of the supply chain members.

**H⁰₂:** There is no significant difference in the mean value of Supply Chain Management across the nature of the supply chain members.

**H₁₂:** There exists a significant difference in the mean value of Supply Chain Management across the nature of the supply chain members.

**H⁰₃:** There is no significant difference in the mean value of Supply Chain Management across different handset brands.

**H₁₃:** There exists a significant difference in the mean value of Supply Chain Management across different handset brands.
H13: There exists a significant difference in the mean value of Supply Chain Management across different handset brands.

H04: There is no significant difference in the mean value of Supply Chain Management with respect to type of ownership.

H14: There exists a significant difference in the mean value of Supply Chain Management with respect to type of ownership.

H05: There is no significant difference in the mean value of Relationship Management across the status of the supply chain members.

H15: There exists a significant difference in the mean value of Relationship Management across the status of the supply chain members.

H06: There is no significant difference in the mean value of Relationship Management across the nature of the supply chain members.

H16: There exists a significant difference in the mean value of Relationship Management across the nature of the supply chain members.

H07: There is no significant difference in the mean value of Relationship Management across different handset brands.

H17: There exists a significant difference in the mean value of Relationship Management across different handset brands.

H08: There is no significant difference in the mean value of Relationship Management with respect to type of ownership.

H18: There exists a significant difference in the mean value of Relationship Management with respect to type of ownership.

H09: There is no significant difference in the mean value of Technology across the status of the supply chain members.

H19: There exists a significant difference in the mean value of Technology across the status of the supply chain members.
**H₀10:** There is no significant difference in the mean value of Technology across the nature of the supply chain members.

**H₁10:** There exists a significant difference in the mean value of Technology across the nature of the supply chain members.

**H₀11:** There is no significant difference in the mean value of Technology across different handset brands.

**H₁11:** There exists a significant difference in the mean value of Technology across different handset brands.

**H₀12:** There is no significant difference in the mean value of Technology with respect to type of ownership.

**H₁12:** There exists a significant difference in the mean value of Technology with respect to type of ownership.

**H₀13:** There is no significant difference in the mean value of Inventory Management across the status of the supply chain members.

**H₁13:** There exists a significant difference in the mean value of Inventory Management across the status of the supply chain members.

**H₀14:** There is no significant difference in the mean value of Inventory Management across the nature of the supply chain members.

**H₁14:** There exists a significant difference in the mean value of Inventory Management across the nature of the supply chain members.

**H₀15:** There is no significant difference in the mean value of Inventory Management across different handset brands.

**H₁15:** There exists a significant difference in the mean value of Inventory Management across different handset brands.

**H₀16:** There is no significant difference in the mean value of Inventory Management with respect to type of ownership.
\textbf{H_{16}}: There exists a significant difference in the mean value of Inventory Management with respect to type of ownership.

\textbf{H_{017}}: There is no significant difference in the mean value of Environmental Management across the status of the supply chain members.

\textbf{H_{117}}: There exists a significant difference in the mean value of Environmental Management across the status of the supply chain members.

\textbf{H_{018}}: There is no significant difference in the mean value of Environmental Management across the nature of the supply chain members.

\textbf{H_{118}}: There exists a significant difference in the mean value of Environmental Management across the nature of the supply chain members.

\textbf{H_{019}}: There is no significant difference in the mean value of Environmental Management across different handset brands.

\textbf{H_{119}}: There exists a significant difference in the mean value of Environmental Management across different handset brands.

\textbf{H_{020}}: There is no significant difference in the mean value of Environmental Management with respect to type of ownership.

\textbf{H_{120}}: There exists a significant difference in the mean value of Environmental Management with respect to type of ownership.

\textbf{H_{021}}: There is no significant difference in the mean value of Marketing Strategies across the status of the supply chain members.

\textbf{H_{121}}: There exists a significant difference in the mean value of Marketing Strategies across the status of the supply chain members.

\textbf{H_{022}}: There is no significant difference in the mean value of Marketing Strategies across the nature of the supply chain members.

\textbf{H_{122}}: There exists a significant difference in the mean value of Marketing Strategies across the nature of the supply chain members.
\textbf{H}_0^{23}: \text{There is no significant difference in the mean value of Marketing Strategies across different handset brands.} \\
\textbf{H}_1^{23}: \text{There exists a significant difference in the mean value of Marketing Strategies across different handset brands.} \\
\textbf{H}_0^{24}: \text{There is no significant difference in the mean value of Marketing Strategies with respect to type of ownership.} \\
\textbf{H}_1^{24}: \text{There exists a significant difference in the mean value of Marketing Strategies with respect to type of ownership.} \\
\textbf{H}_0^{25}: \text{There is no significant difference in the mean value of Distribution Strategies across the status of the supply chain members.} \\
\textbf{H}_1^{25}: \text{There exists a significant difference in the mean value of Distribution Strategies across the status of the supply chain members.} \\
\textbf{H}_0^{26}: \text{There is no significant difference in the mean value of Distribution Strategies across the nature of the supply chain members.} \\
\textbf{H}_1^{26}: \text{There exists a significant difference in the mean value of Distribution Strategies across the nature of the supply chain members.} \\
\textbf{H}_0^{27}: \text{There is no significant difference in the mean value of Distribution Strategies across different handset brands.} \\
\textbf{H}_1^{27}: \text{There exists a significant difference in the mean value of Distribution Strategies across different handset brands.} \\
\textbf{H}_0^{28}: \text{There is no significant difference in the mean value of Distribution Strategies with respect to type of ownership.} \\
\textbf{H}_1^{28}: \text{There exists a significant difference in the mean value of Distribution Strategies with respect to type of ownership.} \\
\textbf{H}_0^{29}: \text{There is no significant difference in the mean value of Distribution Network across the status of the supply chain members.}
**H₂₉:** There exists a significant difference in the mean value of Distribution Network across the status of the supply chain members.

**H₀₃₀:** There is no significant difference in the mean value of Distribution Network across the nature of the supply chain members.

**H₁₃₀:** There exists a significant difference in the mean value of Distribution Network across the nature of the supply chain members.

**H₀₃₁:** There is no significant difference in the mean value of Distribution Network across different handset brands.

**H₁₃₁:** There exists a significant difference in the mean value of Distribution Network across different handset brands.

**H₀₃₂:** There is no significant difference in the mean value of Distribution Network with respect to type of ownership.

**H₁₃₂:** There exists a significant difference in the mean value of Distribution Network with respect to type of ownership.

**H₀₃₃:** There is no significant difference in the mean value of Financial Strategies across the status of the supply chain members.

**H₁₃₃:** There exists a significant difference in the mean value of Financial Strategies across the status of the supply chain members.

**H₀₃₄:** There is no significant difference in the mean value of Financial Strategies across the nature of the supply chain members.

**H₁₃₄:** There exists a significant difference in the mean value of Financial Strategies across the nature of the supply chain members.

**H₀₃₅:** There is no significant difference in the mean value of Financial Strategies across different handset brands.

**H₁₃₅:** There exists a significant difference in the mean value of Financial Strategies across different handset brands.
**H₀₃⁶:** There is no significant difference in the mean value of Financial Strategies with respect to type of ownership.

**H₁₃⁶:** There exists a significant difference in the mean value of Financial Strategies with respect to type of ownership.

**H₀₃⁷:** There is no significant difference in the mean value of Risk Management across the status of the supply chain members.

**H₁₃⁷:** There exists a significant difference in the mean value of Risk Management across the status of the supply chain members.

**H₀₃⁸:** There is no significant difference in the mean value of Risk Management across the nature of the supply chain members.

**H₁₃⁸:** There exists a significant difference in the mean value of Risk Management across the nature of the supply chain members.

**H₀₃⁹:** There is no significant difference in the mean value of Risk Management across different handset brands.

**H₁₃⁹:** There exists a significant difference in the mean value of Risk Management across different handset brands.

**H₀₄⁰:** There is no significant difference in the mean value of Risk Management with respect to type of ownership.

**H₁₄⁰:** There exists a significant difference in the mean value of Risk Management with respect to type of ownership.

### 3.7.2 Hypothesis based on Relationship among the Dimensions of Distribution Strategies

**H₀₄¹:** There is no significant impact of Supply Chain Management on Distribution Strategies.

**H₁₄¹:** There exists a significant impact of Supply Chain Management on Distribution Strategies.
\(H_{042}\): There is no significant impact of Relationship Management on Distribution Strategies.

\(H_{142}\): There exists a significant impact of Relationship Management on Distribution Strategies.

\(H_{043}\): There is no significant impact of Environmental Management on Distribution Strategies.

\(H_{143}\): There exists a significant impact of Environmental Management on Distribution Strategies.

\(H_{044}\): There is no significant impact of Technology on Distribution Strategies.

\(H_{144}\): There exists a significant impact of Technology on Distribution Strategies

\(H_{045}\): There is no significant impact of Inventory Management on Distribution Strategies.

\(H_{145}\): There exists a significant impact of Inventory Management on Distribution Strategies.

\(H_{046}\): There is no significant impact of Marketing Strategies on Distribution Strategies.

\(H_{146}\): There exists a significant impact of Marketing Strategies on Distribution Strategies.

\(H_{047}\): There is no significant impact of Distribution Network on Distribution Strategies.

\(H_{147}\): There exists a significant impact of Distribution Network on Distribution Strategies.

\(H_{048}\): There is no significant impact of Financial Strategies on Distribution Strategies.

\(H_{148}\): There exists a significant impact of Financial Strategies on Distribution Strategies.
There is no significant impact of Risk Management on Distribution Strategies.

There exists a significant impact of Risk Management on Distribution Strategies.

3.8 Research Design

The research design used in this study is conclusive in nature which is divided into two parts. The initial phase of the study follows a descriptive research design in which a conceptual model is developed, covering the broad dimensions of the study.

However, the later part of the study is based on causal research design which is used to validate the cause-effect relationship among the different dimensions (variables) of the study.

The research techniques employed in this study were:

- **Questionnaire-based survey**: Questionnaire-based survey is an established approach to obtain respondents’ opinion on a range of issues related to a research problem. In the present research, it was used to gain an insight, in terms of breadth as well as depth, regarding the strategies adopted by Indian mobile manufacturers for the distribution of handsets.

- **Case Development and Comparative Study**: Case studies were developed for the select companies highlighting their structure, growth and distribution strategies adopted.

  Further, a comparative analysis was done based on different dimensions as regards the selected companies.

3.9 Questionnaire Development

The Indian mobile phone sector has grown significantly in the last decade. The mobile subscriber base has increased significantly and has paved way for new entrants in the mobile phone market.

There is a lack of enough research regarding the comparative study of mobile firms for distribution of handsets in the Indian context. This study attempts to address this
shortcoming. It is aimed at assessing the current distribution strategies adopted by mobile firms and compare them on a common platform. To that end, a questionnaire-based survey was conducted. The questionnaire was designed after reviewing the available literature and extensive discussions with four executives attached with mobile firms and two academicians.

To increase the response rate and facilitate respondents, the questionnaire included close-ended questions. A five point Likert-scale was used for that purpose. However, there were some questions that had yes/no options as well. The questionnaire had three sections. Section A dealt with the organisational as well as personal profile of the respondents. Section B focused on issues related to various dimensions of distribution strategies. Section C assessed extent of implementation of specific dimensions of distribution strategies by the supply chain members in their operations.

3.9.1 Structure and Content Validity of the Questionnaire

The questionnaire was tested for content as well as construct validity. The determination of content validity is subjective and judgmental. It indicates the accuracy with which a specific domain of content is sampled and that the instruments has items covering all aspects of the variables being measured (Nunally, 1978). Content validity primarily depends on an appeal to the proprietary of the content and the way it is presented (Nunally, 1978). The selection of measurement items in the questionnaire was based on exhaustive review of available literature and evaluation by executives and academicians, thus ensuring the content validity of the questionnaires. The content validity was further tested during pilot survey as per the guidelines provided by Forza (2002). After a careful review of responses during the pilot survey, some questions were modified to convey their intended meaning. A few questions were deleted as well. The construct validity was tested through an exploratory factor analysis. Factor analysis was conducted to test the unidimensionality of the multi-items perceptual measures. As per the suggestions of Kim and Mueller (1978), only those items, which had a factor loading of more than 0.4 were retained in the questionnaire. Factor analysis and reliability tests were also conducted for the survey questionnaire findings of which are reported in the sections that follow.
3.9.2 Factor Analysis using KMO and Bartlett's Test for Testing the Validity of the Questionnaire

Factor Analysis was carried out to test and verify the dimensionality, construct validity as well as the reliability of the scale items. These items are Supply Chain Management (SCM), Relationship Management (RM), Environmental Management (EM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Strategies (DS), Distribution Network (DN), Financial Strategies (FS) and Risk Management (RSM).

The factor analysis was carried out with SPSS through factor extraction and rotation method and the results are presented below.

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .582 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1636.264 |
| | Df | 780 |
| | Sig. | .000 |

Table 3.1: KMO and Bartlett's Test

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Extraction Method: Principal Component Analysis.

Table 3.2: Total Variance Explained
It is observed from the above analysis results that the eigen value for the first factor is quite large, i.e. 4.628, than the eigen value for the next factor and this factor accounts for 11.569% of the total variance. This suggests that the scale item of this variable is uni-dimensional.

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<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Better relations with other channel partners help in getting location advantages</td>
<td>RM</td>
<td>0.476</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Long-term contracts with other channel members help in better distribution management (RM)</td>
<td>RM</td>
<td>0.531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>Making use of the latest technology (e-mail, phone, fax, etc.) for taking-up the orders helps in proper management of the Supply Chain</td>
<td>T</td>
<td>0.787</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Use of GIS and GPS helps in tracking the consignment</td>
<td>T</td>
<td>0.566</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Use of warehouses for managing the inventory is of great help in distribution</td>
<td>IM</td>
<td>0.655</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Surveys should be conducted for understanding the needs and wants of the channel members</td>
<td>MS</td>
<td>0.686</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Customers’ feedback helps in designing better distribution network</td>
<td>DN</td>
<td>0.664</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Data from institutes and research organisations is of much help for devising better distribution strategies</td>
<td>DS</td>
<td>0.415</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Feedback from other channel partners enhance the efficiency of the distribution network</td>
<td>DN</td>
<td>0.620</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Using third parties for logistics improves supply and helps in better distribution</td>
<td>DN</td>
<td>0.474</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Transfer of funds electronically saves time and improves distribution</td>
<td>T</td>
<td>0.678</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Adoption of environment friendly methods for production and distribution may prove beneficial in the long run</td>
<td>EM</td>
<td>0.583</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Conducting trainings for raising awareness towards adoption of environmental-friendly techniques can be helpful</td>
<td>EM</td>
<td>0.655</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Use of railways instead of roads will help in bringing down pollution levels significantly</td>
<td>EM</td>
<td>0.600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Relationship management with customers as well as with other channel partners is a tool for better management of the distribution network</td>
<td>RM</td>
<td>0.437</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Use of JIT will help in better distribution management</td>
<td>IM</td>
<td>0.723</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>EM</td>
<td>0.673</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>21.</td>
<td>Use of recycled paper for packaging is a good way to make distribution environmental friendly</td>
<td>EM</td>
<td>0.511</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Mechanism for proper disposal of batteries and old handsets ensures healthier environment</td>
<td>EM</td>
<td>0.556</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Adoption of pollution controlling measures such as use of battery operated trucks inside manufacturing premises should be encouraged</td>
<td>EM</td>
<td>0.717</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Proper training of the staff regarding adoption of eco-friendly practices in distribution will be an added benefit</td>
<td>EM</td>
<td>0.511</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Role of media has been significant in educating the customers and channel partners</td>
<td>T</td>
<td>0.518</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>An educated customer knows exactly what to buy and thus helps in the development of better distribution networks</td>
<td>DN</td>
<td>0.602</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>27.</td>
<td>Location of warehouses close to distribution centres saves time and helps in timely distribution</td>
<td>IM</td>
<td>0.505</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Various promotional schemes at different levels of the supply chain ensure a motivated and dedicated team</td>
<td>MS</td>
<td>0.402</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Most of the channel members are aware of the benefits of proper distribution and supply chain management</td>
<td>SCM</td>
<td>0.490</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>30.</td>
<td>The supply chain members should be trained for imparting various skills and knowledge in order to enhance the productivity of the distribution network</td>
<td>DN</td>
<td>0.636</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Credit policy should be encouraged for supporting small but dedicated channel partners</td>
<td>FS</td>
<td>0.408</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Effective distribution strategies boost sales and increase market share</td>
<td>DS</td>
<td>0.76</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Modern marketing tools such as use of electronic and print media help in the design of proper distribution network

Efficient handling of the finances enhances the productivity of the distribution network

Each and every member involved in the distribution must have a clear understanding of the working of the distribution network

The firms must continually strive for betterment in the distribution strategies

The finances must be appropriately allocated to every process of the supply chain for achieving desired results

Importance should be given to customer satisfaction rather than just profit making

The distribution risk has changed significantly over the past few years

Employment of proper risk management techniques is a must for effective distribution

Table 3.4: Factor Loadings

<table>
<thead>
<tr>
<th>Factor Analysis</th>
<th>MS</th>
<th>0.444</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>FS</td>
<td>0.485</td>
</tr>
<tr>
<td>Design</td>
<td>DN</td>
<td>0.651</td>
</tr>
<tr>
<td>Strategy</td>
<td>DS</td>
<td>0.671</td>
</tr>
<tr>
<td>Finance</td>
<td>FS</td>
<td>0.616</td>
</tr>
<tr>
<td>Customer</td>
<td>MS</td>
<td>0.520</td>
</tr>
<tr>
<td>Distribution</td>
<td>RSM</td>
<td>0.504</td>
</tr>
<tr>
<td>Risk Management</td>
<td>RSM</td>
<td>0.517</td>
</tr>
</tbody>
</table>

3.9.3 Reliability Analysis

Reliability analysis was carried out to test the reliability of the survey instrument using Cronbach's Alpha value. The analysis results are presented below in Table 3.5.

Scale: All Variables

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded\a</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 3.5 (a) Case Processing Summary
The Cronbach’s Alpha value is 0.711 which is more than 0.7, hence the reliability of the questionnaire is proved, i.e., the questionnaire is reliable for the purpose of collecting the data.

This is because of personal interaction with managers in organisations, interactions at seminars and workshops and also personal discussions undertaken during data collection phase and also because of care taken during data entry and analysis process.

The achievement of Cronbach’s Alpha’s value of more than 0.7 could be attributed to the systematic methodology of data collection and equally systematic method of analysis followed in the research endeavour.

Cronbach’s Alpha values have also been found out for individual scale variables and are presented below.

Scale: Supply Chain Management

The questionnaire was tested for reliability statistics for five items of Supply Chain Management for 151 responses. The Cronbach’s Alpha’s value was found to be 0.843 and is exhibited in Table 3.6 below.
### Table 3.6 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded(^a)</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\(^a\) Listwise deletion based on all variables in the procedure.

### Table 3.6 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.843</td>
<td>5</td>
</tr>
</tbody>
</table>

### Table 3.6 (c) Scale Statistics

<table>
<thead>
<tr>
<th>Mean</th>
<th>Variance</th>
<th>Std. Deviation</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.70</td>
<td>3.920</td>
<td>1.980</td>
<td>5</td>
</tr>
</tbody>
</table>

### Scale: Relationship Management

The questionnaire was tested for reliability statistics for three items of Relationship Management for 151 responses. The Cronbach’s Alpha’s value was found to be 0.684 and is exhibited in Table 3.7 below.

### Table 3.7 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded(^a)</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\(^a\) Listwise deletion based on all variables in the procedure.
Table 3.7 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.684</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3.7 (c) Scale Statistics

Scale: Technology

The questionnaire was tested for reliability statistics for four items of Technology for 151 responses. The Cronbach’s Alpha’s value was found to be 0.756 and is exhibited in Table 3.8 below.

Table 3.8 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded*</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. List wise deletion based on all variables in the procedure.

Table 3.8 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.756</td>
<td>4</td>
</tr>
</tbody>
</table>
Table 3.8 (c) Scale Statistics

Scale: Inventory Management

The questionnaire was tested for reliability statistics for three items of Inventory Management for 151 responses. The Cronbach’s Alpha’s value was found to be 0.705 and is exhibited in Table 3.9 below.

Table 3.9 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded<code>a</code></td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

`a. Listwise deletion based on all variables in the procedure.`

Table 3.9 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.705</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3.9 (c) Scale Statistics

Scale: Marketing Strategies

The questionnaire was tested for reliability statistics for four items of Marketing Strategies for 151 responses. The Cronbach’s Alpha’s value was found to be 0.802 and is exhibited in Table 3.10 below.
Table 3.10 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded*</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 3.10 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.802</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 3.10 (c) Scale Statistics

**Scale: Distribution Network**

The questionnaire was tested for reliability statistics for six items of *Distribution Network* for 151 responses. The Cronbach’s Alpha’s value was found to be 0.727 and is exhibited in Table 3.11 below.

Table 3.11 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded*</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.
Table 3.11 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.727</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3.11 (c) Scale Statistics

Scale: Distribution Strategies

The questionnaire was tested for reliability statistics for three items of *Distribution Strategies* for 151 responses. The Cronbach’s Alpha’s value was found to be 0.657 and is exhibited in Table 3.12 below.

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excludeda</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 3.12 (a) Case Processing Summary

Table 3.12 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.657</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 3.12 (c) Scale Statistics

Scale: Environmental Management

The questionnaire was tested for reliability statistics for seven items of *Environmental Management* for 151 responses. The Cronbach’s Alpha’s value was found to be 0.789 and is exhibited in Table 3.13 below.

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excludeda</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 3.13 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.789</td>
<td>7</td>
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</tbody>
</table>

Table 3.13 (b) Reliability Statistics

Table 3.13 (c) Scale Statistics

Scale: Financial Strategies

The questionnaire was tested for reliability statistics for three items of *Financial Strategies* for 151 responses. The Cronbach’s Alpha’s value was found to be 0.746 and is exhibited in Table 3.14 below.
Table 3.14 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded*</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.

Table 3.14 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha*</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.746</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3.14 (c) Scale Statistics

<table>
<thead>
<tr>
<th>Mean</th>
<th>Variance</th>
<th>Std. Deviation</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.67</td>
<td>1.276</td>
<td>1.130</td>
<td>3</td>
</tr>
</tbody>
</table>

Scale: Risk Management

The questionnaire was tested for reliability statistics for two items of *Risk Management* for 151 responses. The Cronbach’s Alpha’s value was found to be 0.698 and is exhibited in Table 3.15 below.

Table 3.15 (a) Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>151</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded*</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. Listwise deletion based on all variables in the procedure.
### Table 3.15 (b) Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.698</td>
<td>2</td>
</tr>
</tbody>
</table>

### Table 3.15 (c) Scale Statistics

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Items</th>
<th>Factor Loading</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Management</td>
<td>S1: Proper management of the supply chain is important for the productivity of an organisation</td>
<td>0.550</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S2: Taking steps for proper management of the supply chain is necessary for growth of the organisation</td>
<td>0.426</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S3: Proper management of the supply chain can add to our success</td>
<td>0.502</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S4: The politico-legal aspects help in the proper implementation of supply chain techniques</td>
<td>0.633</td>
<td>0.843</td>
</tr>
<tr>
<td></td>
<td>S29: Most of the channel members are aware of the benefits of proper distribution and supply chain management</td>
<td>0.476</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Items</td>
<td>Factor Loading</td>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Relationship Management</strong></td>
<td>S5: Better relations with other channel partners help in getting location advantages</td>
<td>0.531</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S6: Long-term contracts with other channel members help in better distribution management</td>
<td>0.787</td>
<td>0.684</td>
</tr>
<tr>
<td></td>
<td>S19: Relationship management with customers as well as with other channel partners is a tool for better management of the distribution network</td>
<td>0.566</td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>S7: Making use of the latest technology (e-mail, phone, fax, etc.) for taking-up the orders helps in proper management of the Supply Chain</td>
<td>0.655</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S8: Use of GIS and GPS helps in tracking the consignment</td>
<td>0.686</td>
<td>0.756</td>
</tr>
<tr>
<td></td>
<td>S15: Transfer of funds electronically saves time and improves distribution</td>
<td>0.664</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S25: Role of media has been significant in educating the customers and channel partners</td>
<td>0.415</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Items</td>
<td>Factor Loading</td>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>**Inventory</td>
<td>S9: Use of JIT will help in better distribution management</td>
<td>0.620</td>
<td>0.705</td>
</tr>
<tr>
<td>Management</td>
<td>S20: Use of warehouses for managing the inventory is of great help in distribution</td>
<td>0.474</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S27: Location of warehouses close to distribution centres saves time and helps in timely distribution</td>
<td>0.678</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S10: Surveys should be conducted for understanding the needs and wants of the channel members</td>
<td>0.583</td>
<td></td>
</tr>
<tr>
<td>**Marketing</td>
<td>S28: Various promotional schemes at different levels of the supply chain ensure a motivated and dedicated team</td>
<td>0.655</td>
<td>0.802</td>
</tr>
<tr>
<td>Strategies</td>
<td>S33: Modern marketing tools such as use of electronic and print media help in the design of proper distribution network</td>
<td>0.600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S38: Importance should be given to customer satisfaction rather than just profit making</td>
<td>0.437</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Items</td>
<td>Factor Loading</td>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Distribution Network</strong></td>
<td>S11: Customers’ feedback helps in designing better distribution network</td>
<td>0.723</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S13: Feedback from other channel partners enhance the efficiency of the distribution network</td>
<td>0.673</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S14: Using third parties for logistics improves supply and helps in better distribution</td>
<td>0.511</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S26: An educated customer knows exactly what to buy and thus helps in the development of better distribution networks</td>
<td>0.556</td>
<td>0.727</td>
</tr>
<tr>
<td></td>
<td>S30: The supply chain members should be trained for imparting various skills and knowledge in order to enhance the productivity of the distribution network</td>
<td>0.717</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S35: Each and every member involved in the distribution must have a clear understanding of the working of the distribution network</td>
<td>0.511</td>
<td></td>
</tr>
<tr>
<td><strong>Distribution Strategies</strong></td>
<td>S12: Data from institutes and research organisations is of much help for devising better distribution strategies</td>
<td>0.518</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S32: Effective distribution strategies boost sales and increase market share</td>
<td>0.602</td>
<td>0.657</td>
</tr>
<tr>
<td></td>
<td>S36: The firms must continually strive for betterment in the distribution strategies</td>
<td>0.505</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Items</td>
<td>Factor Loading</td>
<td>Cronbach’s Alpha</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Environmental</td>
<td>S16: Adoption of environment friendly methods for production and distribution may prove beneficial in the long run</td>
<td>0.402</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>S17: Conducting trainings for raising awareness towards adoption of environmental-friendly techniques can be helpful</td>
<td>0.490</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S18: Use of railways instead of roads will help in bringing down pollution levels significantly</td>
<td>0.636</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S21: Use of recycled paper for packaging is a good way to make distribution environmental friendly</td>
<td>0.408</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S22: Mechanism for proper disposal of batteries and old handsets ensures healthier environment</td>
<td>0.444</td>
<td>0.789</td>
</tr>
<tr>
<td></td>
<td>S23: Adoption of pollution controlling measures such as use of battery operated trucks inside manufacturing premises should be encouraged</td>
<td>0.485</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S24: Proper training of the staff regarding adoption of eco-friendly practices in distribution will be an added benefit</td>
<td>0.651</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.16: Summary Table for Factor Loadings and Cronbach's Alpha

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Items</th>
<th>Factor Loading</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Strategies</td>
<td>S31: Credit policy should be encouraged for supporting small but dedicated channel partners</td>
<td>0.671</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S34: Efficient handling of the finances enhances the productivity of the distribution network</td>
<td>0.616</td>
<td>0.746</td>
</tr>
<tr>
<td></td>
<td>S37: The finances must be appropriately allocated to every process of the supply chain for achieving desired results</td>
<td>0.520</td>
<td></td>
</tr>
<tr>
<td>Risk Management</td>
<td>S39: The distribution risk has changed significantly over the past few years</td>
<td>0.504</td>
<td>0.698</td>
</tr>
<tr>
<td></td>
<td>S40: Employment of proper risk management techniques is a must for effective distribution</td>
<td>0.517</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.10 Questionnaire Administration

Administration of the questionnaire was done in order to collect relevant data from the sources. The target population was analysed and samples were drawn accordingly. Before final collection of data, pilot study was carried out for questionnaire refinement.

#### 3.10.1 Target Respondents

The respondents comprising of the executives working in the departments of supply chain, administration and operations of the top four mobile firms viz. Nokia, Samsung, L.G. and Micromax (based on their respective market shares) were selected to
participate in the survey for the administration of the questionnaire. The distributors and retailers for these brands were also approached for data collection.

### 3.10.2 Sampling Technique

For the selection of executives, simple random sampling was employed. The questionnaires were sent to respective heads of the departments of supply chain, administration and operations requesting them to get the questionnaires filled.

Since there are an umpteen number of retailers and distributors of these four brands, stratified random sampling was used. For this purpose, three broad geographical areas were covered that included retailers and distributors from NCR, eastern Uttar Pradesh and Pune-Mumbai regions.

### 3.10.3 Classification of Target Respondents

The respondents were classified on the basis of status, nature, brand association and ownership. These are explained below.

**Status:** Classification based on the status of the respondents as a supply chain member, i.e. Manufacturer, Distributor or Retailer.

**Nature:** Classification based on the nature of the respondents as a supply chain member, i.e. Small, Medium or Large. The supply chain members generating business worth up to Rupees Five Lakhs per month were classified as *small*, those generating more than Rupees Five Lakhs and up to Rupees Ten Lakhs per month were classified as *medium*, while the members generating income more than Rupees Ten Lakhs per month were classified as *large* supply chain members respectively.

**Brand Association:** Classification based on association with a particular brand viz. Nokia, Samsung, L.G. or Micromax.

**Type of Ownership:** Classification based on the type of ownership of the supply chain members, i.e. Sole Proprietary or Partnership.
3.10.4 Pilot Study

Before administering the questionnaire full scale, a pilot study was carried out among select companies. The pilot study aimed at:

- obtaining feedback of the executives of the mobile firms working in the area of supply chain, operations and environmental management;
- obtaining feedback from the suppliers, distributors and retailers;
- carrying out necessary additions in the questionnaire to make it even more comprehensive;
- deleting those questions that may be of limited significance; and
- refining/ rephrasing the existing questions to impart greater clarity.

A total of fifteen supply chain members were contacted to fill out the questionnaires. Accordingly, the questions were modified and the final questionnaire was crystallised.

3.10.5 Procedure for Data Collection

Data through a total of 325 questionnaires were either collected personally or through mails to the selected executives of the companies from the chosen sector. The survey was conducted during October 2010-January 2011. Four questionnaires each were sent to the selected companies. Questionnaires, including a covering letter and self-addressed stamped envelopes, were mailed to the respective heads of the departments of supply chain, administration and operations. Reminders were sent to all non-respondents, three weeks after the despatch of the questionnaires. In addition, personal visits, phone calls and e-mails were also resorted to for eliciting responses. Data from distributors and retailers were collected personally. Out of the 325 questionnaires, 163 were received back. Out of those, 12 questionnaires were either incomplete or ambiguous and hence, were discarded. So, only 151 questionnaires were analysed. This gave an overall response rate of 46.5%. A response rate of above 20% is considered desirable for survey findings (Yu and Cooper, 1983). Malhotra and Grover (1998) have also suggested a response rate of 20% for positive assessment of the surveys.
3.11 Tools of Analysis

The study used the specifically developed research questionnaire as the basic research instrument to collect the data. The organised data was then analysed using different statistical tools such as MS-Excel 2007, SPSS 17.0, and AMOS 16.0 software. Using these tools, different tests were applied depending on the nature of the data. The tests applied for analysing the data were:

3.11.1 Exploratory Factor Analysis
Exploratory factor analysis (EFA) attempts to discover the nature of the constructs influencing a set of responses. It is used to uncover the underlying structure of a relatively large set of variables. The researcher's a priori assumption is that any indicator may be associated with any factor. This is the most common form of factor analysis. There is no prior theory and one uses factor loadings to intuit the factor structure of the data.

3.11.2 Reliability Analysis
Reliability analysis is used to determine the internal consistency or average correlation of items in a survey instrument to gauge its reliability. Reliability analysis helps in determining whether the same set of items would elicit the same responses if the same questions are recast and re-administered to the same respondents. Variables derived from test instruments are declared to be reliable only when they provide stable and reliable responses over a repeated administration of the test. The reliability is tested on the basis of Cronbach's alpha value, which is a numerical coefficient of reliability.

3.11.3 Analysis of Variance
The Analysis of Variance (ANOVA) is a statistical method used for making simultaneous comparisons between means of two or more samples. It is a method that yields values that can be tested to determine whether a significant relation exists between variables. ANOVA is generally applied when comparison of means for more than two samples is to be drawn. However, this method can be applied in case of means for two samples as well.
3.11.4 The T-Test
The t-test is applied when the comparison of means of two samples is to be drawn. When we have only two samples we can use the t-test to compare the means of the samples but it might become unreliable in case of more than two samples. The t-test assesses whether the means of two samples are statistically different from each other.

3.11.5 Confirmatory Factor Analysis
Confirmatory factor analysis (CFA) is a technique which tests whether a specified set of constructs is influencing responses in a predicted way. CFA is conducted to examine the validity and reliability of the measurement model. Model fitness is determined on the basis of various factors such as GFI, AGFI, RMSEA, etc.

3.11.6 Structural Equation Modelling
The Structural Equation Modelling (SEM) is used in order to evaluate the measurement model. This is done to test the impact of independent variables on the dependent variable.

3.12 Limitations of the Study
- Participation and cooperation of the respondents is a serious problem in a survey based research. The same was observed in this study. Some respondents appeared reluctant to participate in the survey. They apprehended that a study on distribution strategies may bring out the weak points in their respective supply chains and distribution networks that can be a threat to their competitive strategies.

- The study assumed that the respondents were reflecting the state of the responding companies. However, their individual perceptions might have influenced their responses and their views might not have represented the entire organisational reality. The responses to the questionnaire reflect only the opinions of the responding individuals who have filled up the questionnaire and could have some element of bias.

- There was a lack of empirical studies in this field, specifically in the Indian context. This limitation also affected the research. Such previous studies could
have laid a robust and strong foundation for carrying out the present research work.

- The study focussed upon key dimensions of distribution strategies viz. Supply Chain Management, Relationship Management, Environmental Management, Technology, Inventory Management, Marketing Strategies, Distribution Network, Financial Strategies and Risk Management only. However, there are other business processes also that have a bearing on the distribution strategies. For example, processes like planning and forecasting, channel availability, nature and extent of market, etc. too might impact the distribution process. The inclusion of all these factors would have made the study unwieldy. Therefore, only key business processes were focussed upon. This too may be considered as a limitation of the study.

- The study was also restricted to limited geographical areas. The data from the distributors and retailers present in the National Capital Region, Eastern Uttar Pradesh and Pune-Mumbai regions were collected. Exploring other areas of the country might have made the task of data collection a tedious one.

- Time limit was also a constraint with regard to data collection as personally approaching the distributors and retailers consumed a lot of time and required considerable effort.

3.13 Chapter Summary

This chapter elucidated the problem statement, scope of the study, research objectives, research design and the steps involved in questionnaire development and administration. Research hypotheses framed were also listed. Further, tools used for the analysis were discussed and some limitations as regards collection of data were listed. In the next chapter, analysis of the survey findings has been presented.
Chapter 4
DATA ANALYSIS

4.1 Introduction
4.2 Hypotheses Testing
   4.2.1 Hypotheses based on Dimensions of Distribution
       Strategies across Organisational Variables
4.3 Chapter Summary
Chapter 4
DATA ANALYSIS

4.1 Introduction

In this chapter, results of the questionnaire based survey conducted with regard to four major mobile handset manufacturers in the Indian market have been presented. This survey was carried out to examine the current strategies and practices adopted related to the distribution of mobile handsets. In this chapter, the key findings that have emerged out of the survey have been discussed. The framed hypotheses have been tested with the application of statistical tools such as ANOVA and t-test using SPSS 17.0.

4.2 Hypotheses Testing

Formulated hypotheses were tested in order to analyse the data. Statistical techniques such as ANOVA and t-test were applied with the help of SPSS 17.0 software. The results of hypotheses testing have been presented in tabular form and are discussed in detail.

4.2.1 Hypotheses based on Dimensions of Distribution Strategies across Organisational Variables

H01: There is no significant difference in the mean value of Supply Chain Management across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>3.78</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.30</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.31</td>
<td>.33</td>
<td>8.138</td>
<td>0.000*</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.33</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 95% confidence level

Table 4.1: Supply Chain Management versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Supply Chain Management as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.1 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain. Further, results of ANOVA test show significant difference in the mean value of Supply Chain Management.

It was observed that there exists a difference in the mean value of Supply Chain Management as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 3.78 followed by distributors and retailers with mean values of 3.31 and 3.30 respectively.

The results further show that $F = 8.138$ and sig. $= 0.000$, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Supply Chain Management as a dimension of distribution strategies. Moreover, the mean values indicate that manufacturers pay more importance to supply chain activities and all their efforts are in the direction of effective management of the supply chain in order to achieve desired distribution objectives.

Hence, hypothesis $H_01$: There is no significant difference in the mean value of Supply Chain Management across the status of the supply chain members is rejected while alternate hypothesis $H_11$ is not rejected.

$H_02$: There is no significant difference in the mean value of Supply Chain Management across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>3.36</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.32</td>
<td>.39</td>
<td>0.211</td>
<td>0.810</td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.37</td>
<td>.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.34</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2: Supply Chain Management versus Nature
**Discussion**: ANOVA was applied in order to find out the difference in the mean value obtained in Supply Chain Management as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.2 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the supply chain.

It was found that there exists a difference in the mean value of Supply Chain Management as a key dimension of distribution strategies.

Members with large operations obtained the highest mean value of 3.37 followed by members with small and medium operations with mean values of 3.36 and 3.32 respectively.

However, the results show that $F = 0.211$ and sig. = 0.810, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Supply Chain Management as a dimension of distribution strategies with regard to nature of operations of the supply chain members

Hence, hypothesis $H_02$: *There is no significant difference in the mean value of Supply Chain Management across the nature of the supply chain members* is **not rejected** while alternate hypothesis $H_12$ is **rejected**.

$H_03$: *There is no significant difference in the mean value of Supply Chain Management across different handset brands.*

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>3.33</td>
<td>.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.24</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>3.27</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>3.35</td>
<td>.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>3.38</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.34</td>
<td>.39</td>
<td>0.707</td>
<td>0.589</td>
</tr>
</tbody>
</table>

Table 4.3: Supply Chain Management versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Supply Chain Management as an important dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.3 presents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain as well as the results of ANOVA which show the significant difference in the mean value of Supply Chain Management.

It was observed that there exists a difference in the mean value of Supply Chain Management as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 3.38 followed by Micromax dealers with mean value of 3.35. Members associated with Nokia, Samsung and L.G. obtained mean values of 3.33, 3.27 and 3.24 respectively, which are low as compared to mean value obtained by members dealing in multiple brands.

However, the results show that F = 0.707 and sig. = 0.589, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Supply Chain Management as a dimension of distribution strategies with regard to different handset brands.

Hence, hypothesis $H_3$: There is no significant difference in the mean value of Supply Chain Management across different handset brands is not rejected while alternate hypothesis $H_{3\text{a}}$ is rejected.

$H_4$: There is no significant difference in the mean value of Supply Chain Management with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.33</td>
<td>.38</td>
<td>-0.248</td>
<td>0.805</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.35</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4: Supply Chain Management versus Ownership
Discussion: In order to ascertain the difference in the mean value obtained in Supply Chain Management as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.4 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the supply chain as well as the results of t-test which is applied to find out the significant difference in the mean value of Supply Chain Management.

It revealed that there exists a difference in the mean value of Supply Chain Management as an important dimension of distribution strategies.

Members working in partnership obtained the highest mean value of 3.35 followed by members with sole proprietorship having mean value of 3.33.

However, the results show that \( t = -0.248 \) and \( \text{sig.} = 0.805 \), which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Supply Chain Management as a dimension of distribution strategies.

Hence, hypothesis \( H_04: \) There is no significant difference in the mean value of Supply Chain Management with respect to type of ownership is **not rejected** while alternate hypothesis \( H_14 \) is **rejected**.

**H05: There is no significant difference in the mean value of Relationship Management across the status of the supply chain members.**

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.06</td>
<td>.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.51</td>
<td>.47</td>
<td>6.717</td>
<td>0.002*</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.59</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.56</td>
<td>.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* Significant at 95% confidence level

**Table 4.5: Relationship Management versus Status**
Discussion: In order to ascertain the difference in the mean value obtained in Relationship Management as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.5 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicates that there exists a difference in the mean value of Relationship Management as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.06 followed by distributors and retailers with mean values of 3.59 and 3.51 respectively.

Moreover, the results show that $F = 6.717$ and sig. = 0.002, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Relationship Management as a dimension of distribution strategies. Further, the mean values indicate that manufacturers pay more importance to relationship management activities and they plan their strategies in such a way so as to ensure better relationship management in order to achieve the distribution objectives.

Hence, hypothesis $H_05$: There is no significant difference in the mean value of Relationship Management across the status of the organisation is rejected while alternate hypothesis $H_15$ is not rejected.

$H_06$: There is no significant difference in the mean value of Relationship Management across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>3.60</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.48</td>
<td>.47</td>
<td>2.891</td>
<td>0.059</td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.67</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.56</td>
<td>.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6: Relationship Management versus Nature
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Relationship Management as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.6 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was observed that there exists a difference in the mean value of Relationship Management as an important dimension of distribution strategies.

Members with large operations obtained the highest mean value of 3.67 followed by members with small and medium operations with mean values of 3.60 and 3.48 respectively.

However, the results show that $F = 2.891$ and sig. = 0.059, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Relationship Management as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_06$: *There is no significant difference in the mean value of Relationship Management across the nature of the supply chain members* is not rejected while alternate hypothesis $H_16$ is rejected.

$H_07$: *There is no significant difference in the mean value of Relationship Management across different handset brands.*

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nokia</td>
<td>18</td>
<td>3.27</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.43</td>
<td>.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samsung</td>
<td>16</td>
<td>3.70</td>
<td>.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micromax</td>
<td>21</td>
<td>3.65</td>
<td>.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>70</td>
<td>3.63</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.56</td>
<td>.48</td>
<td>3.054</td>
<td>0.019*</td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.7: Relationship Management versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Relationship Management as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.7 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was noted that there exists a difference in the mean value of Relationship Management as an important dimension of distribution strategies.

Samsung dealers obtained the highest mean value of 3.70 followed by Micromax dealers with mean value of 3.65. Members dealing in multiple brands got mean value of 3.63. Members associated with L.G. and Nokia obtained mean values of 3.43 and 3.27 respectively.

The results further show that F = 3.054 and sig. = 0.019, which is less than 0.05 (at 95% confidence level).

This implies that there is a significant difference in Relationship Management as a dimension of distribution strategies with regard to different handset brands. Moreover, the mean values indicate that members associated with Samsung pay more importance to relationship building activities in order to achieve the distribution objectives.

Hence, hypothesis $H_{07}$: There is no significant difference in the mean value of Relationship Management across different handset brands is rejected while alternate hypothesis $H_{17}$ is not rejected.

$H_{08}$: There is no significant difference in the mean value of Relationship Management with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.58</td>
<td>.48</td>
<td>0.543</td>
<td>0.588</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.52</td>
<td>.52</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8: Relationship Management versus Ownership
Discussion: In order to ascertain the difference in the mean value obtained in Relationship Management as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.8 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicates that there exists a difference in the mean value of Relationship Management as an important dimension of distribution strategies.

Members with sole proprietorship obtained the highest mean value of 3.58 followed by members working in partnership having mean value of 3.52.

However, the results show that $t = 0.543$ and $\text{sig.} = 0.588$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Relationship Management as a dimension of distribution strategies.

Hence, hypothesis $H_{08}$: There is no significant difference in the mean value of Relationship Management with respect to type of ownership is not rejected while alternate hypothesis $H_{18}$ is rejected.

$H_{09}$: There is no significant difference in the mean value of Technology across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.29</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.96</td>
<td>.30</td>
<td>11.632</td>
<td>0.000*</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.76</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.95</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.9: Technology versus Status
Discussion: ANOVA was applied in order to establish the difference in the mean value obtained in Technology as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers.

Table 4.9 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was observed that there exists a difference in the mean value of Technology as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.29 followed by retailers and distributors with mean values of 3.96 and 3.76 respectively.

The results further show that \( F = 11.632 \) and \( \text{sig.} = 0.00 \), which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Technology as a dimension of distribution strategies. Further, the mean values indicate that manufacturers pay more importance to adoption of modern technology and all their efforts are in the direction of proper implementation of technology in order to achieve the distribution objectives.

Hence, hypothesis \( H_{09} \): There is no significant difference in the mean value of Technology across the status of the organisation is rejected while alternate hypothesis \( H_{19} \) is not rejected.

\( H_{010} \): There is no significant difference in the mean value of Technology across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>4.05</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.92</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.97</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.95</td>
<td>.32</td>
<td>0.826</td>
<td>0.440</td>
</tr>
</tbody>
</table>

Table 4.10: Technology versus Nature
**Discussion:** ANOVA was applied in order to find out the difference in the mean value obtained in Technology as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.10 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Technology as an important dimension of distribution strategies.

Members with small operations obtained the highest mean value of 4.05 followed by members with large and medium operations with mean values of 3.97 and 3.92 respectively.

However, the results show that $F = 0.826$ and $\text{sig.} = 0.440$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Technology as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{010}$: There is no significant difference in the mean value of Technology across the nature of the organisation is **not rejected** while alternate hypothesis $H_{011}$ is **rejected**.

$H_{011}$: There is no significant difference in the mean value of Technology across different handset brands.

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>3.83</td>
<td>.35</td>
<td>3.343</td>
<td>0.012*</td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.81</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>3.93</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>3.94</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>4.04</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.95</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

**Table 4.11: Technology versus Brands**
**Discussion:** ANOVA was applied in order to find out the difference in the mean value obtained in Technology as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.11 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was noted that there exists a difference in the mean value of Technology as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 4.04 followed by Micromax dealers with mean value of 3.94. Members associated with Samsung, Nokia and L.G. obtained mean values of 3.93, 3.83 and 3.81 respectively.

The results further show that $F = 3.343$ and sig. = 0.012, which is less than 0.05 (at 95% confidence level).

This implies that there is a significant difference in Technology as a dimension of distribution strategies with regard to different handset brands. Moreover, the mean values indicate that members dealing in multiple brands pay more importance to adoption of technology and its proper management in order to achieve the distribution objectives.

Hence, hypothesis $H_{011}$: There is no significant difference in the mean value of Technology across different handset brands is **rejected** while alternate hypothesis $H_{11}$ is **not rejected**.

$H_{012}$: There is no significant difference in the mean value of Technology with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.95</td>
<td>.34</td>
<td>0.223</td>
<td>0.824</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.94</td>
<td>.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.12: Technology versus Ownership
**Discussion:** In order to ascertain the difference in the mean value obtained in Technology as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.12 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicates that there exists a difference in the mean value of Technology as an important dimension of distribution strategies.

Members with sole proprietorship obtained the highest mean value of 3.95 followed by members working in partnership having mean value of 3.94.

However, the results show that $t = .223$ and $\text{sig.} = 0.824$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Technology as a dimension of distribution strategies.

Hence, hypothesis $H_{012}$: There is no significant difference in the mean value of Technology with respect to type of ownership is **not rejected** while alternate hypothesis $H_{112}$ is **rejected**.

$H_{013}$: There is no significant difference in the mean value of Inventory Management across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.42</td>
<td>.30</td>
<td>4.486</td>
<td>0.013*</td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>4.08</td>
<td>.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>4.01</td>
<td>.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>151</td>
<td>4.09</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

**Table 4.13: Inventory Management versus Status**
Discussion: In order to ascertain the difference in the mean value obtained in Inventory Management as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.13 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

Results revealed that there exists a difference in the mean value of Inventory Management as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.42 followed by retailers and distributors with mean values of 4.08 and 4.01 respectively.

The results further show that $F = 4.486$ and sig. = 0.013, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Inventory Management as a dimension of distribution strategies. Further, the mean values indicate that manufacturers pay more importance to inventory management activities in order to ensure effective management of inventory for achieving the desired distribution objectives.

Hence, hypothesis $H_{013}$: There is no significant difference in the mean value of Inventory Management across the status of the organisation is rejected while alternate hypothesis $H_{113}$ is not rejected.

$H_{014}$: There is no significant difference in the mean value of Inventory Management across the nature of the organisation.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>4.20</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>4.08</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>4.09</td>
<td>.41</td>
<td>0.347</td>
<td>0.707</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.10</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.14: Inventory Management versus Nature
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Inventory Management as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.14 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicated that there exists a difference in the mean value of Inventory Management as an important dimension of distribution strategies.

Members with small operations obtained the highest mean value of 4.20 followed by members with large and medium operations with mean values of 4.10 and 4.08 respectively.

However, the results show that $F = 0.347$ and $\text{sig.} = 0.707$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Inventory Management as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{014}$: There is no significant difference in the mean value of Inventory Management across the nature of the supply chain members is not rejected while alternate hypothesis $H_{114}$ is rejected.

$H_{015}$: There is no significant difference in the mean value of Inventory Management across different handset brands

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>4.18</td>
<td>.41</td>
<td>0.738</td>
<td>0.567</td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>4.07</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>4.08</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>3.98</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>4.12</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.09</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.15: Inventory Management versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Inventory Management as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.15 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was observed that there exists a difference in the mean value of Inventory Management as an important dimension of distribution strategies.

Nokia dealers obtained the highest mean value of 4.18 followed by members associated with multiple brands with mean value of 4.12. Members associated with Samsung, L.G. and Micromax obtained mean values of 4.07, 4.08 and 3.98 respectively.

However, the results show $F = 0.738$ and sig. $= 0.567$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Inventory Management as a dimension of distribution strategies with regard to different handset brands.

Hence, hypothesis $H_{015}$: There is no significant difference in the mean value of Inventory Management across different handset brands is not rejected while alternate hypothesis $H_{115}$ is rejected.

$H_{016}$: There is no significant difference in the mean value of Inventory Management with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>4.13</td>
<td>.39</td>
<td>2.089</td>
<td>0.038*</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.96</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.16: Inventory Management versus Ownership
Discussion: In order to ascertain the difference in the mean value obtained in Inventory Management as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.16 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Inventory Management as an important dimension of distribution strategies.

Members with sole proprietorship obtained the highest mean value of 4.13 followed by members working in partnership having mean value of 3.96.

Table 16 further shows that t = 2.089 and sig. = 0.038, which is less than 0.05 (at 95% confidence level).

This implies that there is a significant difference in Inventory Management as a dimension of distribution strategies. Moreover, the mean values indicate that sole proprietary firms pay more importance to inventory management activities as compared to partnership firms and all their efforts are in the direction of effective management of the inventory in order to achieve the distribution objectives.

Hence, hypothesis $H_{016}$: There is no significant difference in the mean value of Inventory Management with respect to type of ownership is rejected while alternate hypothesis $H_{116}$ is not rejected.

$H_{017}$: There is no significant difference in the mean value of Environmental Management across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.18</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>4.14</td>
<td>.22</td>
<td>2.240</td>
<td>0.110</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>4.25</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.16</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.17: Environmental Management versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Environmental Management as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.17 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Environmental Management as an important dimension of distribution strategies.

Distributors obtained the highest mean value of 4.25 followed by manufacturers and retailers with mean values of 4.18 and 4.14 respectively.

However, the results show that $F = 2.240$ and $\text{sig.} = 0.110$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Environmental Management as a dimension of distribution strategies.

Hence, hypothesis $H_{017}$: There is no significant difference in the mean value of Environmental Management across the status of the supply chain members is not rejected while alternate hypothesis $H_{117}$ is rejected.

$H_{018}$: There is no significant difference in the mean value of Environmental Management across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>4.11</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>4.17</td>
<td>.22</td>
<td>0.355</td>
<td>0.702</td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>4.16</td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.16</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.18: Environmental Management versus Nature
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Environmental Management as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.18 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Environmental Management as an important dimension of distribution strategies.

Members with medium operations obtained the highest mean value of 4.17 followed by members with large and small operations with mean values of 4.16 and 4.11 respectively.

However, the results show that $F = 0.355$ and sig. = 0.702, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Environmental Management as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{018}$: There is no significant difference in the mean value of Environmental Management across different handset brands is not rejected while alternate hypothesis $H_{118}$ is rejected.

$H_{019}$: There is no significant difference in the mean value of Environmental Management across different handset brands.

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>4.19</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>4.21</td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>4.14</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>4.14</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>4.16</td>
<td>.21</td>
<td>0.679</td>
<td>0.608</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.16</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.19: Environmental Management versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Environmental Management as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.19 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Environmental Management as an important dimension of distribution strategies.

L.G. dealers obtained the highest mean value of 4.21 followed by Nokia dealers with mean value of 4.19. Members dealing in multiple brands obtained mean value of 4.15 while Samsung and Micromax dealers had the same mean value of 4.14.

The results, however, show $F = 0.679$ and sig. $= 0.608$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Environmental Management as a dimension of distribution strategies with regard to different handset brands.

Hence, hypothesis $H_{019}$: There is no significant difference in the mean value of Environmental Management across different handset brands is not rejected and alternate hypothesis $H_{119}$ is rejected.

$H_{020}$: There is no significant difference in the mean value of Environmental Management with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>4.17</td>
<td>.22327</td>
<td>0.120</td>
<td>0.905</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>4.16</td>
<td>.21741</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.20: Environmental Management versus Ownership
**Discussion:** In order to ascertain the difference in the mean value obtained in Environmental Management as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.20 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It showed that there exists a difference in the mean value of Environmental Management as an important dimension of distribution strategies.

Members with sole proprietorship obtained the highest mean value of 4.17 followed by members working in partnership having mean value of 4.16.

The results, however, show that \( t = 0.120 \) and \( \text{sig.} = 0.905 \), which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Environmental Management as a dimension of distribution strategies.

Hence, hypothesis \( H_{020} \): *There is no significant difference in the mean value of Environmental Management with respect to type of ownership* is not rejected while alternate hypothesis \( H_{120} \) is rejected.

\( H_{021} \): *There is no significant difference in the mean value of Marketing Strategies across the status of the supply chain members.*

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.40</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>4.12</td>
<td>.40</td>
<td>6.467</td>
<td>0.002*</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.92</td>
<td>.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.11</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.21: Marketing Strategies versus Status
**Discussion:** In order to ascertain the difference in the mean value obtained in Marketing Strategies as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.21 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicated that there exists a difference in the mean value of Marketing Strategies as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.40, which is significantly higher, followed by retailers and distributors with mean values of 4.12 and 3.92 respectively.

The results further show that $F = 6.467$ and $\text{sig.} = 0.002$, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Marketing Strategies as a dimension of distribution strategies. Moreover, the mean values indicate that manufacturers pay more importance to marketing strategies as compared to retailers and distributors and all their efforts are in the direction of effective management of the adopted strategies in order to achieve the distribution objectives.

Hence, hypothesis $H_021$: *There is no significant difference in the mean value of Marketing Strategies across the status of the supply chain members* is rejected while alternate hypothesis $H_121$ is not rejected.

$H_022$: *There is no significant difference in the mean value of Marketing Strategies across the nature of the supply chain members.*

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>4.20</td>
<td>.40</td>
<td>0.533</td>
<td>0.588</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>4.08</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>4.13</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.11</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.22: Marketing Strategies versus Nature
**Discussion:** ANOVA was applied in order to find out the difference in the mean value obtained in Marketing Strategies as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.22 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicates that there exists a difference in the mean value of Marketing Strategies as an important dimension of distribution strategies.

Members with small operations obtained the highest mean value of 4.20 followed by members with large and medium operations with mean values of 4.13 and 4.08 respectively.

However, the results show that $F = 0.533$ and $\text{sig.} = 0.588$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Marketing Strategies as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{022}$: *There is no significant difference in the mean value of Marketing Strategies across the nature of the supply chain members* is *not rejected* while alternate hypothesis $H_{122}$ is *rejected*.

$H_{023}$: *There is no significant difference in the mean value of Marketing Strategies across different handset brands.*

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>4.01</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.91</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>4.03</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>4.09</td>
<td>.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>4.23</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.11</td>
<td>.38</td>
<td>4.325</td>
<td>0.002*</td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.23: Marketing Strategies versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Marketing Strategies as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple.

Table 4.23 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It revealed that there exists a difference in the mean value of Marketing Strategies as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 4.23 followed by Micromax dealers with mean value of 4.09. Members associated with Samsung, Nokia and L.G. obtained mean values of 4.03, 4.01 and 3.91 respectively.

Moreover, the results show that $F = 4.325$ and $\text{sig.} = 0.002$, which is less than 0.05 (at 95% confidence level).

This implies that there is a significant difference in Marketing Strategies as a dimension of distribution strategies with regard to different handset brands. Further, the mean values indicate that members dealing in multiple brands pay more importance to adoption of proper marketing strategies and all their efforts are in the direction of effective management of those activities in order to achieve the distribution objectives.

Hence, hypothesis $H_{023}$: There is no significant difference in the mean value of Marketing Strategies across different handset brands is rejected while alternate hypothesis $H_{123}$ is not rejected.

$H_{024}$: There is no significant difference in the mean value of Marketing Strategies with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>4.11</td>
<td>.39</td>
<td>-0.005</td>
<td>0.996</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>4.12</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.24: Marketing Strategies versus Ownership
**Discussion:** In order to ascertain the difference in the mean value obtained in Marketing Strategies as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.24 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Marketing Strategies as an important dimension of distribution strategies.

Members working in partnership obtained the highest mean value of 4.12 followed by members with sole proprietorship having mean value of 4.11.

The results, however, show that $t = -0.005$ and $\text{sig.} = 0.996$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Marketing Strategies as a dimension of distribution strategies.

Hence, hypothesis $H_{024}$: *There is no significant difference in the mean value of Marketing Strategies with respect to type of ownership* is not rejected while alternate hypothesis $H_{124}$ is rejected.

$H_{025}$: *There is no significant difference in the mean value of Distribution Strategies across the status of the supply chain members.*

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.30</td>
<td>.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.91</td>
<td>.36</td>
<td>10.835</td>
<td>0.000*</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.69</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>151</td>
<td>3.90</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.25: Distribution Strategies versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Distribution Strategies as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.25 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It revealed that there exists a difference in the mean value of Distribution Strategies as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.30 followed by retailers and distributors with mean values of 3.91 and 3.69 respectively.

Further, the results show F = 10.835 and sig. = 0.000, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Distribution Strategies as a dimension of distribution strategies. Moreover, the mean values indicate that manufacturers pay more importance to distribution strategies and all their efforts are in the direction of effective distribution management in order to achieve the distribution objectives.

Hence, hypothesis $H_{025}$: There is no significant difference in the mean value of Distribution Strategies across the status of the organisation is rejected while alternate hypothesis $H_{125}$ is not rejected.

$H_{026}$: There is no significant difference in the mean value of Distribution Strategies across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>3.93</td>
<td>.34</td>
<td>1.601</td>
<td>0.205</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.84</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.96</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.90</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.26: Distribution Strategies versus Nature
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Distribution Strategies as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.26 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Distribution Strategies as an important dimension of distribution strategies.

Members with large operations obtained the highest mean value of 3.96 followed by members with small and medium operations with mean values of 3.93 and 3.84 respectively.

However, the results show that $F = 1.601$ and sig. = 0.205, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Distribution Strategies as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{026}$: *There is no significant difference in the mean value of Distribution Strategies across the nature of the organisation* is not rejected while alternate hypothesis $H_{126}$ is rejected.

$H_{027}$: *There is no significant difference in the mean value of Distribution Strategies across different handset brands.*

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>3.77</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.78</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>3.85</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>3.88</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>3.99</td>
<td>.34</td>
<td>2.184</td>
<td>0.074</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.90</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.27: Distribution Strategies versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Distribution Strategies as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.27 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It revealed that there exists a difference in the mean value of Distribution Strategies as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 3.99 followed by Micromax dealers with mean value of 3.88. Members associated with Samsung, L.G and Nokia obtained mean values of 3.85, 3.78 and 3.77 respectively.

The results, however, show $F = 2.184$ and sig. $= 0.074$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Distribution Strategies as a dimension of distribution strategies with regard to different handset brands.

Hence, hypothesis $H_{027}$: There is no significant difference in the mean value of Distribution Strategies across different handset brands is not rejected while alternate hypothesis $H_{127}$ is rejected.

$H_{028}$: There is no significant difference in the mean value of Distribution Strategies with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.90</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.89</td>
<td>.43</td>
<td>0.133</td>
<td>0.894</td>
</tr>
</tbody>
</table>

Table 4.28: Distribution Strategies versus Ownership
Discussion: In order to ascertain the difference in the mean value obtained in Distribution Strategies as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.28 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

Mean values reveal that there exists a difference in the mean value of Distribution Strategies as an important dimension of distribution strategies.

Members with sole proprietorship obtained the highest mean value of 3.90 followed by members working in partnership having mean value of 3.89.

However, the results show that t = 0.133 and sig. = 0.894, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Distribution Strategies as a dimension of distribution strategies.

Hence, hypothesis \( H_{028} \): There is no significant difference in the mean value of Distribution Strategies with respect to type of ownership is not rejected while alternate hypothesis \( H_{128} \) is rejected.

\( H_{029} \): There is no significant difference in the mean value of Distribution Network across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>3.95</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.69</td>
<td>.36</td>
<td>5.806</td>
<td>0.004*</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.52</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.69</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.29: Distribution Network versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Distribution Network as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.29 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicates that there exists a difference in the mean value of Distribution Network as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 3.95 followed by retailers and distributors with mean values of 3.69 and 3.52 respectively.

Moreover, the results show that $F = 5.806$ and $\text{sig.} = 0.004$, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Distribution Network as a dimension of distribution strategies. Mean values further indicate that manufacturers pay more importance to distribution activities as compared to retailers and distributors and all their efforts are in the direction of effective management of the distribution network in order to achieve the distribution objectives.

Hence, hypothesis $H_{029}$: There is no significant difference in the mean value of Distribution Network across the status of the organisation is rejected while alternate hypothesis $H_{129}$ is not rejected.

$H_{030}$: There is no significant difference in the mean value of Distribution Network across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>3.63</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.64</td>
<td>.38</td>
<td>1.570</td>
<td>0.211</td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.75</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.69</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.30: Distribution Network versus Nature
**Discussion:** ANOVA was applied in order to find out the difference in the mean value obtained in Distribution Network as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.30 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Distribution Network as an important dimension of distribution strategies.

Members with large operations obtained the highest mean value of 3.75 followed by members with medium and small operations with mean values of 3.64 and 3.63 respectively.

However, the results show that $F = 1.570$ and $\text{sig.} = 0.211$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Distribution Network as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{030}$: There is no significant difference in the mean value of Distribution Network across the nature of the supply chain members is not rejected while alternate hypothesis $H_{130}$ is rejected.

$H_{031}$: There is no significant difference in the mean value of Distribution Network across different handset brands.

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nokia</td>
<td>18</td>
<td>3.4630</td>
<td>.32113</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.5705</td>
<td>.35955</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samsung</td>
<td>16</td>
<td>3.5729</td>
<td>.41708</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micromax</td>
<td>21</td>
<td>3.7063</td>
<td>.31581</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>70</td>
<td>3.8167</td>
<td>.32247</td>
<td>5.763</td>
<td>0.000*</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.6909</td>
<td>.35973</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.31: Distribution Network versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Distribution Network as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.31 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Distribution Network as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 3.816 followed by Micromax dealers with mean value of 3.706. Members associated with Samsung, L.G. and Nokia obtained mean values of 3.572, 3.570 and 3.463 respectively.

Further, the results show that $F = 5.763$ and sig. = 0.000, which is less than 0.05 (at 95% confidence level).

This implies that there is a significant difference in Distribution Network as a dimension of distribution strategies with regard to different handset brands. The mean values further indicate that members dealing in multiple brands pay more importance to distribution activities and all their efforts are in the direction of effective management of the distribution network in order to achieve the distribution objectives.

Hence, hypothesis $H_{031}$: *There is no significant difference in the mean value of Distribution Network across different handset brands* is rejected while alternate hypothesis $H_{131}$ is not rejected.

$H_{032}$: *There is no significant difference in the mean value of Distribution Network with respect to type of ownership.*

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.67</td>
<td>.38</td>
<td>-0.885</td>
<td>0.378</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.74</td>
<td>.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.32: Distribution Network versus Ownership
**Discussion:** In order to ascertain the difference in the mean value obtained in Distribution Network as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.32 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Distribution Network as an important dimension of distribution strategies.

Members working in partnership obtained the highest mean value of 3.74 followed by members with sole proprietorship having mean value of 3.67.

The results, however, show that \( t = -0.885 \) and \( \text{sig.} = 0.378 \), which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Distribution Network as a dimension of distribution strategies.

Hence, hypothesis \( H_{032} \): *There is no significant difference in the mean value of Distribution Network with respect to type of ownership* is not rejected while alternate hypothesis \( H_{132} \) is rejected.

\( H_{033} \): *There is no significant difference in the mean value of Financial Strategies across the status of the supply chain members.*

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>( F )</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>11</td>
<td>4.39</td>
<td>.33</td>
<td>1.227</td>
<td>0.296</td>
</tr>
<tr>
<td>Retailer</td>
<td>116</td>
<td>4.21</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributor</td>
<td>24</td>
<td>4.20</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.22</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.33: Financial Strategies versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Financial Strategies as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.33 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Financial Strategies as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.39 followed by retailers and distributors with mean values of 4.21 and 4.20 respectively.

The results, however, show that $F = 1.227$ and sig. = 0.296, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Financial Strategies as a dimension of distribution strategies.

Hence, hypothesis $H_{033}$: There is no significant difference in the mean value of Financial Strategies across the status of the organisation is not rejected and alternate hypothesis $H_{133}$ is rejected.

$H_{034}$: There is no significant difference in the mean value of Financial Strategies across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>4.33</td>
<td>.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>4.20</td>
<td>.36</td>
<td>0.557</td>
<td>0.574</td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>4.23</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.22</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.34: Financial Strategies versus Nature
**Discussion:** ANOVA was applied in order to find out the difference in the mean value obtained in Financial Strategies as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.34 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Financial Strategies as an important dimension of distribution strategies.

Members with small operations obtained the highest mean value of 4.33 followed by members with large and medium operations with mean values of 4.23 and 4.20 respectively.

However, the results show that $F = 0.557$ and $\text{sig.} = 0.574$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Financial Strategies as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{34}$: *There is no significant difference in the mean value of Financial Strategies across the nature of the organisation* is not rejected while alternate hypothesis $H_{134}$ is rejected.

$H_{35}$: *There is no significant difference in the mean value of Financial Strategies across different handset brands.*

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>4.11</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>4.16</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>4.21</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>4.20</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>4.28</td>
<td>.35</td>
<td>0.973</td>
<td>0.424</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>4.22</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.35: Financial Strategies versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Financial Strategies as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.35 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It indicated that there exists a difference in the mean value of Financial Strategies as an important dimension of distribution strategies.

Members dealing in multiple brands obtained the highest mean value of 4.28 followed by Samsung dealers with mean value of 4.21. Members associated with Micromax, L.G. and Nokia obtained mean values of 4.20, 4.16 and 4.11 respectively.

The results, however, show that $F = 0.973$ and sig. = 0.424, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Financial Strategies as a dimension of distribution strategies with regard to different handset brands.

Hence, hypothesis $H_{035}$: There is no significant difference in the mean value of Financial Strategies across different handset brands is not rejected while alternate hypothesis $H_{135}$ is rejected.

$H_{036}$: There is no significant difference in the mean value of Financial Strategies with respect to type of ownership.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>4.21</td>
<td>.37</td>
<td>-0.760</td>
<td>0.449</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>4.26</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.36: Financial Strategies versus Ownership
Discussion: In order to ascertain the difference in the mean value obtained in Financial Strategies as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.36 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Financial Strategies as an important dimension of distribution strategies.

Members working in partnership obtained the highest mean value of 4.26 followed by members with sole proprietorship having mean value of 4.21.

The results, however, show that $t = -0.760$ and $sig. = 0.449$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Financial Strategies as a dimension of distribution strategies.

Hence, hypothesis $H_{036}$: There is no significant difference in the mean value of Financial Strategies with respect to type of ownership is not rejected while alternate hypothesis $H_{136}$ is rejected.

$H_{037}$: There is no significant difference in the mean value of Risk Management across the status of the supply chain members.

<table>
<thead>
<tr>
<th>Status</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER</td>
<td>11</td>
<td>4.09</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAILER</td>
<td>116</td>
<td>3.72</td>
<td>.61</td>
<td>2.305</td>
<td>0.103</td>
</tr>
<tr>
<td>DISTRIBUTOR</td>
<td>24</td>
<td>3.89</td>
<td>.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.77</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.37: Risk Management versus Status
Discussion: In order to ascertain the difference in the mean value obtained in Risk Management as a dimension of distribution strategies of handset manufacturers across the members of the supply chain i.e. Manufacturers, Distributors and Retailers, ANOVA was applied.

Table 4.37 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Risk Management as an important dimension of distribution strategies.

Manufacturers obtained the highest mean value of 4.09 followed by distributors and retailers with mean values of 3.89 and 3.72 respectively.

However, the results show that $F = 2.305$ and sig. = 0.103, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Risk Management as a dimension of distribution strategies.

Hence, hypothesis $H_{037}$: There is no significant difference in the mean value of Risk Management across the status of the supply chain members is not rejected while alternate hypothesis $H_{137}$ is rejected.

$H_{038}$: There is no significant difference in the mean value of Risk Management across the nature of the supply chain members.

<table>
<thead>
<tr>
<th>Nature</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL</td>
<td>10</td>
<td>3.55</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDIUM</td>
<td>79</td>
<td>3.82</td>
<td>.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARGE</td>
<td>62</td>
<td>3.75</td>
<td>.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.77</td>
<td>.62</td>
<td>.911</td>
<td>0.404</td>
</tr>
</tbody>
</table>

Table 4.38: Risk Management versus Nature
Discussions: ANOVA was applied in order to find out the difference in the mean value obtained in Risk Management as a dimension of distribution strategies of handset manufacturers across the nature of the members of the supply chain i.e. Small, Medium or Large.

Table 4.38 represents the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It revealed that there exists a difference in the mean value of Risk Management as an important dimension of distribution strategies.

Members with medium operations obtained the highest mean value of 3.822 followed by members with large and small operations with mean values of 3.758 and 3.550 respectively.

The results, however, show that $F = 0.911$ and sig. = 0.404, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Risk Management as a dimension of distribution strategies with regard to nature of operations of the supply chain members.

Hence, hypothesis $H_{038}$: There is no significant difference in the mean value of Risk Management across the nature of the organisation is not rejected while alternate hypothesis $H_{138}$ is rejected.

$H_{039}$: There is no significant difference in the mean value of Risk Management across different handset brands.

<table>
<thead>
<tr>
<th>Brand</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOKIA</td>
<td>18</td>
<td>3.41</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L.G.</td>
<td>26</td>
<td>3.67</td>
<td>.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>16</td>
<td>4.03</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICROMAX</td>
<td>21</td>
<td>3.80</td>
<td>.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTIPLE</td>
<td>70</td>
<td>3.84</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>3.77</td>
<td>.62</td>
<td>2.697</td>
<td>0.033*</td>
</tr>
</tbody>
</table>

*Significant at 95% confidence level

Table 4.39: Risk Management versus Brands
Discussion: ANOVA was applied in order to find out the difference in the mean value obtained in Risk Management as a dimension of distribution strategies of handset manufacturers across different handset brands viz. Nokia, L.G., Samsung, Micromax or multiple brands.

Table 4.39 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It was found that there exists a difference in the mean value of Risk Management as an important dimension of distribution strategies.

Samsung associates obtained the highest mean value of 4.03 followed by members dealing in multiple brands with mean value of 3.84. Members associated with Micromax, L.G. and Nokia obtained mean values of 3.80, 3.67 and 3.41 respectively.

The results further show that $F = 2.697$ and $\text{sig.} = 0.033$, which is less than 0.05 (at 95% confidence level).

This implies that there exists a significant difference in Risk Management as a dimension of distribution strategies with regard to different handset brands. The mean values further indicate that members associated with Samsung pay more importance to risk management activities and all their efforts are in the direction of effective management of risks in order to achieve the distribution objectives.

Hence, hypothesis $H_{039}$: *There is no significant difference in the mean value of Risk Management across different handset brands* is rejected while alternate hypothesis $H_{139}$ is not rejected.

$H_{040}$: *There is no significant difference in the mean value of Risk Management with respect to type of ownership.*

<table>
<thead>
<tr>
<th>Ownership</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLE PROPRIETARY</td>
<td>120</td>
<td>3.78</td>
<td>.64</td>
<td>0.040</td>
<td>0.968</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>31</td>
<td>3.77</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.40: Risk Management versus Ownership
**Discussion** In order to ascertain the difference in the mean value obtained in Risk Management as a dimension of distribution strategies of handset manufacturers with respect to type of ownership, t-test was applied.

Table 4.40 shows the descriptive statistics of the sample along with the mean value and standard deviation obtained by each member of the chain.

It revealed that there exists a difference in the mean value of Risk Management as an important dimension of distribution strategies.

Members working as sole proprietors obtained the highest mean value of 3.78 followed by members working in partnership having mean value of 3.77.

The results, however, show that $t = 0.040$ and $\text{sig.} = 0.968$, which is more than 0.05 (at 95% confidence level).

This implies that there is no significant difference in Risk Management as a dimension of distribution strategies.

Hence, hypothesis $H_{040}$: There is no significant difference in the mean value of Risk Management with respect to type of ownership is **not rejected** while alternate hypothesis $H_{140}$ is **rejected**.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Hypothesis</th>
<th>F/t</th>
<th>Sig.</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>There is no significant difference in the mean value of Supply Chain Management across the status of the supply chain members.</td>
<td>8.138</td>
<td>0.000*</td>
<td>Rejected</td>
</tr>
<tr>
<td>2.</td>
<td>There is no significant difference in the mean value of Supply Chain Management across the nature of the supply chain members.</td>
<td>0.211</td>
<td>0.810</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>3.</td>
<td>There is no significant difference in the mean value of Supply Chain Management across different handset brands.</td>
<td>0.707</td>
<td>0.589</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>S.No.</td>
<td>Hypothesis</td>
<td>F/t</td>
<td>Sig.</td>
<td>Remark</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>4.</td>
<td>There is no significant difference in the mean value of Supply Chain</td>
<td>-0.248</td>
<td>0.805</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management with respect to type of ownership.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>There is no significant difference in the mean value of Relationship</td>
<td>6.717</td>
<td>0.002</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across the status of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>There is no significant difference in the mean value of Relationship</td>
<td>2.891</td>
<td>0.059</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across the nature of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>There is no significant difference in the mean value of Relationship</td>
<td>3.054</td>
<td>0.019</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across different handset brands.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>There is no significant difference in the mean value of Relationship</td>
<td>0.543</td>
<td>0.588</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management with respect to type of ownership.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>There is no significant difference in the mean value of Technology</td>
<td>11.632</td>
<td>0.000</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>across the status of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>There is no significant difference in the mean value of Technology</td>
<td>0.826</td>
<td>0.440</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>across the nature of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>There is no significant difference in the mean value of Technology</td>
<td>3.343</td>
<td>0.012</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>across different handset brands.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>There is no significant difference in the mean value of Technology</td>
<td>0.223</td>
<td>0.824</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>with respect to type of ownership.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>There is no significant difference in the mean value of Inventory</td>
<td>4.486</td>
<td>0.013</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across the status of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>There is no significant difference in the mean value of Inventory</td>
<td>0.347</td>
<td>0.707</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across the nature of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>There is no significant difference in the mean value of Inventory</td>
<td>0.738</td>
<td>0.567</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across different handset brands.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>There is no significant difference in the mean value of Environmental</td>
<td>2.240</td>
<td>0.110</td>
<td>Not Rejected</td>
</tr>
<tr>
<td></td>
<td>Management across the status of the supply chain members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.No.</td>
<td>Hypothesis</td>
<td>F/t</td>
<td>Sig.</td>
<td>Remark</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>18.</td>
<td>There is no significant difference in the mean value of Environmental Management across the nature of the supply chain members.</td>
<td>0.355</td>
<td>0.702</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>19.</td>
<td>There is no significant difference in the mean value of Environmental Management across different handset brands.</td>
<td>0.679</td>
<td>0.608</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>20.</td>
<td>There is no significant difference in the mean value of Environmental Management with respect to type of ownership.</td>
<td>0.120</td>
<td>0.905</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>21.</td>
<td>There is no significant difference in the mean value of Marketing Strategies across the status of the supply chain members.</td>
<td>6.467</td>
<td>0.002</td>
<td>Rejected</td>
</tr>
<tr>
<td>22.</td>
<td>There is no significant difference in the mean value of Marketing Strategies across the nature of the supply chain members.</td>
<td>0.533</td>
<td>0.588</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>23.</td>
<td>There is no significant difference in the mean value of Marketing Strategies across different handset brands.</td>
<td>4.325</td>
<td>0.002</td>
<td>Rejected</td>
</tr>
<tr>
<td>24.</td>
<td>There is no significant difference in the mean value of Marketing Strategies with respect to type of ownership.</td>
<td>-0.005</td>
<td>0.996</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>25.</td>
<td>There is no significant difference in the mean value of Distribution Strategies across the status of the supply chain members.</td>
<td>10.835</td>
<td>0.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>26.</td>
<td>There is no significant difference in the mean value of Distribution Strategies across the nature of the supply chain members.</td>
<td>1.601</td>
<td>0.205</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>27.</td>
<td>There is no significant difference in the mean value of Distribution Strategies across different handset brands.</td>
<td>2.184</td>
<td>0.074</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>28.</td>
<td>There is no significant difference in the mean value of Distribution Strategies with respect to type of ownership.</td>
<td>0.133</td>
<td>0.894</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>29.</td>
<td>There is no significant difference in the mean value of Distribution Network across the status of the supply chain members.</td>
<td>5.806</td>
<td>0.004</td>
<td>Rejected</td>
</tr>
<tr>
<td>30.</td>
<td>There is no significant difference in the mean value of Distribution Network across the nature of the supply chain members.</td>
<td>1.570</td>
<td>0.211</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>S.No.</td>
<td>Hypothesis</td>
<td>F/t</td>
<td>Sig.</td>
<td>Remark</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>31.</td>
<td>There is no significant difference in the mean value of Distribution Network across different handset brands.</td>
<td>5.763</td>
<td>0.000</td>
<td>Rejected</td>
</tr>
<tr>
<td>32.</td>
<td>There is no significant difference in the mean value of Distribution Network with respect to type of ownership.</td>
<td>-0.885</td>
<td>0.378</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>33.</td>
<td>There is no significant difference in the mean value of Financial Strategies across the status of the supply chain members.</td>
<td>1.227</td>
<td>0.296</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>34.</td>
<td>There is no significant difference in the mean value of Financial Strategies across the nature of the supply chain members.</td>
<td>0.557</td>
<td>0.574</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>35.</td>
<td>There is no significant difference in the mean value of Financial Strategies across different handset brands.</td>
<td>0.973</td>
<td>0.424</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>36.</td>
<td>There is no significant difference in the mean value of Financial Strategies with respect to type of ownership.</td>
<td>-0.760</td>
<td>0.449</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>37.</td>
<td>There is no significant difference in the mean value of Risk Management across the status of the supply chain members.</td>
<td>2.305</td>
<td>0.103</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>38.</td>
<td>There is no significant difference in the mean value of Risk Management across the nature of the supply chain members.</td>
<td>0.911</td>
<td>0.404</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>39.</td>
<td>There is no significant difference in the mean value of Risk Management across different handset brands.</td>
<td>2.697</td>
<td>0.033</td>
<td>Rejected</td>
</tr>
<tr>
<td>40.</td>
<td>There is no significant difference in the mean value of Risk Management with respect to type of ownership.</td>
<td>0.040</td>
<td>0.968</td>
<td>Not Rejected</td>
</tr>
</tbody>
</table>

**Table 4.41: Summary of Hypotheses Testing**

Hypotheses testing helped ascertain the relative importance of select dimensions of distribution strategies with regard to different organisational variables. Some key points have emerged out which are discussed as under:

The relative importance of Supply Chain Management across the status of the supply chain members varies significantly. Manufacturers pay more importance to effective management of supply chain as compared to distributors and retailers.
Further, Relationship Management is an aspect of Distribution Strategies that varies significantly across the status of the supply chain members. Again, manufacturers pay greater importance to the management of relationships between the channel members as compared to distributors and retailers.

Relative importance of Relationship Management varies significantly across different handset brands. Members associated with Samsung pay more importance to management of cordial relationships among the channel partners as compared to members associated with other brands.

The relative importance of Technology varies significantly across the status of the supply chain members with manufacturers paying more importance to the efficient use of technology as compared to distributors or retailers.

The relative importance of Technology varies significantly across different handset brands. Members dealing in multiple brands pay greater importance to the proper use of technology as compared to members associated with other brands.

The relative importance of Inventory Management varies significantly across the status of the supply chain members with manufacturers paying more importance to the effective management of the inventory as compared to distributors or retailers.

The relative importance of Inventory Management varies significantly with respect to the type of ownership. Members working in sole proprietary pay more importance to the effective management of the inventory as compared to the members working in partnerships.

The relative importance of Marketing Strategies varies significantly across the status of the supply chain members. Manufacturers pay more importance to the implementation of effective marketing strategies as compared to distributors or retailers.

The relative importance of Marketing Strategies varies significantly across different handset brands with members associated with multiple brands paying more
importance to the adoption of better marketing strategies as compared to the members associated with other brands.

The relative importance of Distribution Strategies varies significantly across the status of the supply chain members with manufacturers paying more importance to the adoption and implementation of effective distribution strategies as compared to distributors or retailers.

The relative importance of Distribution Network varies significantly across the status of the supply chain members with manufacturers paying more importance to the development of proper distribution network as compared to distributors or retailers.

The relative importance of Distribution Network varies significantly across different handset brands. Members associated with multiple brands pay greater importance to the adoption of proper distribution network as compared to the members associated with other brands.

The relative importance of Risk Management varies significantly across different handset brands. Members associated with Samsung pay more importance to the proper consideration and management of risk in distribution as compared to the members associated with other brands.

4.3 Chapter Summary

The proposed hypotheses relating different dimensions of distribution strategies to the organisational variables were tested. The results reveal significant differences with regard to certain aspects. Hypotheses assessing the relative impact of the independent variables on the dependent variable have been tested in Chapter 6 using Structural Equation Modelling.
Chapter 5
CONFIRMATORY FACTOR ANALYSIS

5.1 Introduction
5.2 Analysis using Confirmatory Factor Analysis
5.3 Assessment of Model Fit
5.4 Chapter Summary
5.1 Introduction

In this chapter, Confirmatory Factor Analysis (CFA) has been applied in order to test the data structure. This method was used to test the conceptual model developed in Chapter 3. The method tests the validity of the model by analysing the fit indices and suggesting the relative fitness of the model along various model fit parameters.

5.2 Analysis using Confirmatory Factor Analysis

Confirmatory factor analysis was conducted using AMOS 16.0. Following Anderson and Gerbing (1988), the measurement model (relationships between observed items and latent constructs) was analysed before the structural model (relationships between latent constructs). The logic of this argument is that it is essential to understand what one is measuring prior to testing relationships (Vandenberg and Lance, 2000). The Confirmatory Factor Analysis was run including both the dependent and independent variables without any structural relationships.

CFA was applied in order to test the data structure. The model obtained has been shown below followed by results and explanation.
Figure 5.1: Path Diagram for Confirmatory Factor Analysis

The values for different fit indices are shown below:

<table>
<thead>
<tr>
<th>Model</th>
<th>NPAR</th>
<th>CMIN</th>
<th>DF</th>
<th>P</th>
<th>CMIN/DF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>165</td>
<td>1084.517</td>
<td>695</td>
<td>.000</td>
<td>1.560</td>
</tr>
<tr>
<td>Saturated model</td>
<td>860</td>
<td>.000</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>80</td>
<td>1500.597</td>
<td>780</td>
<td>.000</td>
<td>1.924</td>
</tr>
</tbody>
</table>

Table 5.1: CMIN

<table>
<thead>
<tr>
<th>Model</th>
<th>RMR</th>
<th>GFI</th>
<th>AGFI</th>
<th>PGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>.055</td>
<td>.867</td>
<td>.807</td>
<td>.565</td>
</tr>
<tr>
<td>Saturated model</td>
<td>.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>.073</td>
<td>.523</td>
<td>.498</td>
<td>.497</td>
</tr>
</tbody>
</table>

Table 5.2: RMR, GFI

<table>
<thead>
<tr>
<th>Model</th>
<th>NFI</th>
<th>RFI</th>
<th>IFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>.277</td>
<td>.189</td>
<td>.516</td>
<td>.393</td>
<td>.459</td>
</tr>
<tr>
<td>Saturated model</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 5.3: Baseline Comparisons

<table>
<thead>
<tr>
<th>Model</th>
<th>RMSEA</th>
<th>LO 90</th>
<th>HI 90</th>
<th>PCLOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>.075</td>
<td>.066</td>
<td>.084</td>
<td>.000</td>
</tr>
<tr>
<td>Independence model</td>
<td>.097</td>
<td>.089</td>
<td>.104</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 5.4: RMSEA

5.3 Assessment of Model Fit

The significance of the overall model is determined by the ratio of Chi-square value and the corresponding degrees of freedom. In the present case, the value of Chi-square/degrees of freedom = 1.560, which is within the recommended level (< 3.0). A Parsimony Goodness of Fit Index (PGFI) larger than 0.5 is generally considered a good model fit. The value is 0.565 indicating that the present model is acceptable. The GFI value is 0.901 while AGFI is 0.877, both of which are measures that represent
overall degree of fit (squared residuals from prediction compared to the actual data). The AGFI value is on the lower side. For both of these, higher values would indicate better fit but no absolute threshold levels have been established (Hair et al., 1998).

<table>
<thead>
<tr>
<th>Fit Statistics</th>
<th>Desirable Values*</th>
<th>Estimated Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Theory Weighted Least Squares Chi-Square</td>
<td>N.A.</td>
<td>1084.517</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>N.A.</td>
<td>695</td>
</tr>
<tr>
<td>Chi-Square/ Degrees of Freedom</td>
<td>&lt; 3.0</td>
<td>1.560</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>≤ 0.1</td>
<td>0.075</td>
</tr>
<tr>
<td>P-Value for Test of Close Fit</td>
<td>&lt; 0.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Normed Fit Index (NFI)</td>
<td>≥ 0.90</td>
<td>0.977</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>≥ 0.90</td>
<td>1.002</td>
</tr>
<tr>
<td>Goodness of Fit Index (GFI)</td>
<td>≥ 0.90</td>
<td>0.901</td>
</tr>
<tr>
<td>Adjusted Goodness of Fit Index (AGFI)</td>
<td>≥ 0.90</td>
<td>0.877</td>
</tr>
<tr>
<td>Parsimony Goodness of Fit Index (PGFI)</td>
<td>≥ 0.50</td>
<td>0.565</td>
</tr>
</tbody>
</table>

Table 5.5: Fit Indices for the Model

*As proposed by Chien & Shih (2007) and Schumacker & Lomax (2004)

In this study, the total sample size is 151. It meets the absolute minimum requirement of 100 respondents, for maximum likelihood estimates (MLE) to provide the valid results, as provided by Hair et al., (1998). Due to small sample size, this might be expected that estimation of maximum likelihood parameters may not be significant (Rao & Holt, 2005). A good fit demands the RMSEA to be smaller than or equal to 0.1. In this case, the RMSEA value is 0.075, which is within the desired range. This suggests an acceptable model fit here. The values of Normed Fit Index (NFI) and Comparative Fit Index (CFI) are 0.977 and 1.002 respectively, which are more than the desirable value of 0.9, suggesting that the model can be accepted.
5.4 Chapter Summary

The Confirmatory Factor Analysis was applied to test the validity of the conceptual model. Majority of the fit indices obtained were within the desirable range. This suggested that the model is acceptable. In the next chapter, Structural Equation Modelling has been applied to test the hypotheses related to impact of different dimensions on distribution strategies.
Chapter 6
VALIDATION OF CONCEPTUAL MODEL

6.1 Introduction
6.2 The Conceptual Model
6.3 Hypotheses Testing
6.4 Assessment of Model Fit
6.5 Chapter Summary
Chapter 6
VALIDATION OF CONCEPTUAL MODEL

6.1 Introduction

This chapter attempts to test the relationship between the dependent and the independent variables using Structural Equation Modelling (SEM) technique, i.e. to analyse the impact that various dimensions of distribution have on distribution strategies. These independent dimensions of distribution strategies are viz. Supply Chain Management (SCM), Relationship Management (RM), Environmental Management (EM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Network (DN), Financial Strategies (FS) and Risk Management (RSM). For this purpose, the data collected through the questionnaire based survey have been used.

AMOS version 16.0 was used for SEM, as it ensures comprehensive analysis and has a graphical user interface, which is easy to understand. Further, it provides for direct import of data from SPSS.

The conceptual model crystallised earlier that incorporates different dimensions of distribution strategies cover key aspects that fall within the ambit of distribution and supply chain management of organisations.

6.2 The Conceptual Model

The conceptual model had already been proposed in Chapter 3. For recapitulation, the model is being presented again.
The various dimensions of this conceptual model were captured through questionnaire based survey.

These dimensions were then assessed for testing the validity of the conceptual model using SEM technique with the help of AMOS (version 16.0) software.
Figure 6.2: Path Diagram for Structural Equation Modelling

6.3 Hypotheses Testing

The statistical significance of all of the structural parameter estimates was examined to determine the validity of the hypothesised paths. The values have been tested for significance on the basis of Critical Ratio (C.R.) value. According to Garson (2005), values are significant if Critical Ratio is more than 1.96. The hypotheses have been tested and their results discussed as under:

H041: There is no significant impact of Supply Chain Management on Distribution Strategies.

It has been found from the results that the relationship between Supply Chain Management and Distribution Strategies is statistically significant (C.R. = 1.964), which is more than the standard C.R. value of 1.96. Further, the path coefficient value (standard regression weight) is equal to 0.19 which is positive. This implies that Supply Chain Management has a positive significant impact on Distribution Strategies.

Thus, the hypothesis H041: There is no significant impact of Supply Chain Management on Distribution Strategies is rejected while alternate hypothesis H141 is not rejected.

H042: There is no significant impact of Relationship Management on Distribution Strategies.

It has been found from the results that the relationship between Relationship Management and Distribution Strategies is statistically significant (C.R. = 3.129), which is more than the standard C.R. value of 1.96. Moreover, the path coefficient value is equal to 0.07 which is positive. This implies that Relationship Management has a positive significant impact on Distribution Strategies.

Thus, the hypothesis H042: There is no significant impact of Relationship Management on Distribution Strategies is rejected while alternate hypothesis H142 is not rejected.

H043: There is no significant impact of Environmental Management on Distribution Strategies.
It has been found that the relationship between Environmental Management and Distribution Strategies is statistically insignificant (C.R.=-1.881), which is less than the standard C.R. value of 1.96. However, the path coefficient value is equal to -0.50 which is negative. This implies that Environmental Management has a negative but insignificant impact on Distribution Strategies.

Hence, the hypothesis $H_0^{43}$: There is no significant impact of Environmental Management on Distribution Strategies is not rejected while alternate hypothesis $H_1^{43}$ is rejected.

$H_0^{44}$: There is no significant impact of Technology on Distribution Strategies.

It has been found from the results that the relationship between Technology and Distribution Strategies is statistically significant (C.R.=2.201), which is more than the standard C.R. value of 1.96. Further, the path coefficient value is equal to 0.18 which is positive. This implies that Technology has a positive significant impact on Distribution Strategies.

Thus, the hypothesis $H_0^{44}$: There is no significant impact of Technology on Distribution Strategies is rejected while alternate hypothesis $H_1^{44}$ is not rejected.

$H_0^{45}$: There is no significant impact of Inventory Management on Distribution Strategies.

It has been found that the relationship between Inventory Management and Distribution Strategies is statistically significant (C.R.=4.002), which is more than the standard C.R. value of 1.96. Further, the path coefficient value is equal to 0.06 which is positive. This implies that Inventory Management has a positive significant impact on Distribution Strategies.

Thus, the hypothesis $H_0^{45}$: There is no significant impact of Inventory Management on Distribution Strategies is rejected while alternate hypothesis $H_1^{45}$ is not rejected.

$H_0^{46}$: There is no significant impact of Marketing Strategies on Distribution Strategies.

It is found that the relationship between Marketing Strategies and Distribution Strategies is statistically significant (C.R.=2.653), which is more than the standard
C.R. value of 1.96. Further, the path coefficient value is equal to 0.39 which is positive. This implies that Marketing Strategies have a positive significant impact on Distribution Strategies.

Thus, the hypothesis \( H_0^{46} \): *There is no significant impact of Marketing Strategies on Distribution Strategies* is rejected while alternate hypothesis \( H_1^{46} \) is not rejected.

\( H_0^{47} \): *There is no significant impact of Distribution Network on Distribution Strategies.*

It has been found that the relationship between Distribution Network and Distribution Strategies is statistically significant (C.R.= 2.779), which is greater than the standard C.R. value of 1.96. Moreover, the path coefficient value is equal to 1.26 which is positive. This indicates that Distribution Network has a positive significant impact on Distribution Strategies.

Thus, the hypothesis \( H_0^{47} \): *There is no significant impact of Distribution Network on Distribution Strategies* is rejected while the alternate hypothesis \( H_1^{47} \) is not rejected.

\( H_0^{48} \): *There is no significant impact of Financial Strategies on Distribution Strategies.*

It is found that the relationship between Financial Strategies and Distribution Strategies is statistically insignificant (C.R.=1.443), which is less than the standard C.R. value of 1.96. However, the path coefficient value is equal to -0.13 which is negative. This implies that Financial Strategies have a negative but insignificant impact on Distribution Strategies.

Hence, the hypothesis \( H_0^{48} \): *There is no significant impact of Financial Strategies on Distribution Strategies* is not rejected while alternate hypothesis \( H_1^{48} \) is rejected.

\( H_0^{49} \): *There is no significant impact of Risk Management on Distribution Strategies.*

From the results, it has been found that the relationship between Risk Management and Distribution Strategies is statistically insignificant (C.R.=0.717), which is less than the standard C.R. value of 1.96. However, the path coefficient value is equal to
0.04 which is positive. This implies that Risk Management has a positive but insignificant impact on Distribution Strategies.

Thus, the hypothesis \( H_049: \text{There is no significant impact of Risk Management on Distribution Strategies} \) is not rejected while alternate hypothesis \( H_149 \) is rejected.

The structural parameter estimates and hypotheses testing results have been represented in Table 6.1.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Hypothesis</th>
<th>Path</th>
<th>Critical Ratio (C.R.)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>( H_041 )</td>
<td>SCM→DS</td>
<td>1.964</td>
<td>Rejected</td>
</tr>
<tr>
<td>2.</td>
<td>( H_042 )</td>
<td>RM→DS</td>
<td>3.129</td>
<td>Rejected</td>
</tr>
<tr>
<td>3.</td>
<td>( H_043 )</td>
<td>EM→DS</td>
<td>-1.881</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>4.</td>
<td>( H_044 )</td>
<td>T→DS</td>
<td>2.201</td>
<td>Rejected</td>
</tr>
<tr>
<td>5.</td>
<td>( H_045 )</td>
<td>IM→DS</td>
<td>4.002</td>
<td>Rejected</td>
</tr>
<tr>
<td>6.</td>
<td>( H_046 )</td>
<td>MS→DS</td>
<td>2.653</td>
<td>Rejected</td>
</tr>
<tr>
<td>7.</td>
<td>( H_047 )</td>
<td>DN→DS</td>
<td>2.779</td>
<td>Rejected</td>
</tr>
<tr>
<td>8.</td>
<td>( H_048 )</td>
<td>FS→DS</td>
<td>-1.443</td>
<td>Not Rejected</td>
</tr>
<tr>
<td>9.</td>
<td>( H_049 )</td>
<td>RSM→DS</td>
<td>0.717</td>
<td>Not Rejected</td>
</tr>
</tbody>
</table>

**Table: 6.1 Structure Parameters and Hypotheses Testing Results**

Hypotheses testing results show that there is a linear positive relationship between Distribution Strategies (DS) and seven other variables, namely Supply Chain Management (SCM), Relationship Management (RM), Technology (T), Inventory Management (IM), Marketing Strategies (MS), Distribution Network (DN) and Risk Management (RSM). This implies that higher levels of these seven independent variables (dimensions) result in higher levels of dependent variable, i.e. Distribution Strategies.

However, the impact of Risk Management on Distribution Strategies is insignificant.
On the other hand, the other two independent variables, namely Environmental Management (EM) and Financial Strategies (FS) have a negative impact on Distribution Strategies (DS), although these impacts are statistically insignificant.

The reasons for these negative impacts can be explained as under:

- Low education level of most of the respondents, which are mostly located in remote areas.
- Ignorance about the concepts of Distribution Strategies and no technical know-how.
- No direct communication with the manufacturers.

Further, most of the respondents have very little knowledge with regard to the adoption of eco-friendly practices at various levels of distribution. Moreover, the respondents are not well-versed with the management of finances that govern various aspects of distribution strategies.

6.4 Assessment of Model Fit

The significance of the overall model is determined by the ratio of Chi-square value and the corresponding degrees of freedom. In the present case, the value of $\chi^2$/degrees of freedom = 1.876, which is within the recommended level (< 3.0). A Parsimony Goodness of Fit Index (PGFI) larger than 0.5 is generally considered a good model fit. The value is 0.512 indicating that the present model is acceptable. The GFI and AGFI values are 1.021 and 0.917 respectively, both of which are measures that represent overall degree of fit (squared residuals from prediction compared to the actual data). This indicates that the model fits well and is acceptable.
<table>
<thead>
<tr>
<th>Fit Statistics</th>
<th>Desirable Values*</th>
<th>Estimated Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Theory Weighted Least Squares Chi-Square</td>
<td>N.A.</td>
<td>1384.439</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>N.A.</td>
<td>738</td>
</tr>
<tr>
<td>Chi-Square/ Degrees of Freedom</td>
<td>&lt; 3.0</td>
<td>1.876</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>≤ 0.1</td>
<td>0.094</td>
</tr>
<tr>
<td>P-Value for Test of Close Fit</td>
<td>&lt; 0.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Normed Fit Index (NFI)</td>
<td>≥ 0.90</td>
<td>1.101</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>≥ 0.90</td>
<td>0.903</td>
</tr>
<tr>
<td>Goodness of Fit Index (GFI)</td>
<td>≥ 0.90</td>
<td>1.021</td>
</tr>
<tr>
<td>Adjusted Goodness of Fit Index (AGFI)</td>
<td>≥ 0.90</td>
<td>0.917</td>
</tr>
<tr>
<td>Parsimony Goodness of Fit Index (PGFI)</td>
<td>≥ 0.50</td>
<td>0.512</td>
</tr>
</tbody>
</table>

*As proposed by Chien & Shih (2007) and Schumacker & Lomax (2004)

Table 6.2: Assessment of Model Fit

A good fit demands the RMSEA to be smaller than or equal to 0.1. In this case, the RMSEA value is 0.094, which is within the desired range. This suggests an acceptable model fit here. The values of Normed Fit Index (NFI) and Comparative Fit Index (CFI) are 1.101 and 0.903 respectively, both of which are more than the desirable value of 0.9, suggesting that the model can be accepted.

6.5 Chapter Summary

The hypotheses relating different dimensions with distribution strategies were tested in this chapter using Structural Equation Modelling methodology. The hypotheses were tested in order to assess the respective impacts of different dimensions on distribution strategies and their cause-effect relationship.
Chapter 7

CASE DEVELOPMENT AND COMPARATIVE STUDY

7.1 Introduction
7.2 Case Development
   7.2.1 Nokia
   7.2.2 Samsung
   7.2.3 L.G.
   7.2.4 Micromax
7.3 Comparative Study
7.4 Chapter Summary
Chapter 7
CASE DEVELOPMENT AND COMPARATIVE STUDY

7.1 Introduction

In this chapter, case studies have been developed for each of the mobile handset manufacturers selected for the present study. The case studies focus upon the inception, growth and development of each of the players. The data used for the development of the cases is mostly secondary in nature and have been sourced mainly from the websites of the respective companies. Substantial data have been collected from different websites and online journals too.

Comparative analysis on various factors and parameters has been done using quantitative data from the questionnaire. The results have been depicted graphically and presented in a tabular form as well for ease of understanding.

7.2 Case Development

The case studies developed for the top four mobile handset manufacturers in India viz. Nokia, Samsung, L.G. and Micromax are presented in this section.

7.2.1 Nokia

Established in the year 1861, Nokia Corporation is a Finnish multinational communications corporation having its headquarters in Keilaniemi, Espoo, a city neighbouring Finland’s capital Helsinki (www.nokia.com).

Nokia's history dates back to 1865 when mining engineer Fredrik Idestam established a groundwood pulp mill on the banks of the Tammerkoski rapids in the town of Tampere, in southwestern Finland in Russian Empire and started manufacturing paper (www.nokia.com).

In 1868, Idestam built a second mill near the town of Nokia, fifteen kilometres west of Tampere by the Nokianvirta river, which had better resources for hydro-electric power production. In 1871, Idestam, with the help of his close friend statesman Leo
Mechelin, renamed and transformed his firm into a share company, thereby founding the Nokia Company, the name it is still known by today (www.kansallisbiografia.fi).

The company is engaged in the manufacturing of mobile devices and in converging internet and communications industries, with over 132,000 employees in 120 countries, sales in more than 150 countries and global annual revenue of over €42 billion and operating profit of €2 billion as of 2010 (ncomprod.nokia.com) It is the world's largest manufacturer of mobile phones with worldwide market share at 23% in the second quarter of 2011 (www.gartner.com). Nokia's estimated share of the converged mobile device market was 31% in the fourth quarter, compared with 38% in the third quarter 2010. Nokia manufactures mobile devices for every major market segment and protocol, including GSM, CDMA, and W-CDMA (UMTS). Nokia offers Internet services such as applications, games, music, maps, media and messaging through its Ovi platform. Nokia is also engaged in providing free digital map information and navigation services through its wholly owned subsidiary Navteq (press.nokia.com).

Nokia entered into a joint venture with Siemens, Nokia Siemens Networks, to produce telecommunications network equipment, services and solutions (www.nokiasiemensnetworks.com). Nokia has sites for research and development, manufacture and sales in many countries. As of December 2010, Nokia had R&D presence in 16 countries and employed 35,870 people in research and development, representing close to 27% of the group's total workforce (ncomprod.nokia.com). The Nokia Research Centre, founded in 1986, is Nokia's industrial research unit consisting of about 500 researchers, engineers and scientists (research.nokia.com). Nokia has research sites in seven countries namely Finland, China, India, Kenya, Switzerland, the United Kingdom and the United States. The company has nine manufacturing facilities located at Salo, Finland; Manaus, Brazil; Cluj, Romania; Beijing and Dongguan, China; Komárom, Hungary; Chennai, India; Reynosa, Mexico; and Masan, South Korea (research.nokia.com). Nokia's industrial design department is headquartered in Soho in London, UK with significant satellite offices in Helsinki, Finland and Calabasas, California in the US.
Nokia is a public limited-liability company listed on the Helsinki, Frankfurt, and New York stock exchanges (www.nasdaqomx.com). Nokia plays a very large role in the economy of Finland; it is by far the largest Finnish company, accounting for about a third of the market capitalization of the Helsinki Stock Exchange (OMX Helsinki) as of 2007, a unique situation for an industrialised country (www.nasdaqomx.com). It is an important employer in Finland and several small companies have grown into large ones as its partners and subcontractors (www.etla.fi). In 2009, Nokia contributed 1.6% to Finland's GDP, and accounted for about 16% of Finland's exports in 2006 (www.etla.fi).

The Nokia brand has been valued at $25 billion and the company is listed as the 14th most valuable global brand in the Interbrand/Business Week Best Global Brands list of 2011 (www.interbrand.com). As of 2011, it is the 14th ranked brand corporation in Europe (www.icon-net.com), the 8th most admirable Network and Other Communications Equipment company worldwide in Fortune's World's Most Admired Companies list of 2011 and the world's 143rd largest company in terms of revenue in Fortune Global 500 list of 2011 (www.money.cnn.com). In the global smartphone rivalry, Nokia held the third place in second quarter of 2011, trailing behind Samsung and Apple (www.thenextweb.com).

On 11 February 2011, Nokia announced a partnership with Microsoft where all future Nokia smartphones will be powered by the Windows Phone 7 operating system. On 26 October 2011, Nokia unveiled its first WP 7.5 powered handsets Lumia 710 and 800 (www.bbc.co.uk).

**Entry in the Indian Market**

Nokia entered the Indian market in the year 1995. Since then, it has proven itself as one of the most recognised brands in the telecom sector. Since its entry into the Indian market, Nokia has remained the market leader.

Nokia had a market share of 56.2% in 2008-09* which fell to 52.2% in 2009-10.* The company is rapidly losing ground to other major players and now has a market share of around 39% only.* (*Voice & Data Journal) With the advent of android phones,
Nokia has lagged behind in this sector and other mobile manufacturers have increased their market shares.

The trend in mobile telephony has changed drastically during recent years and the customer has become more demanding. Recently, there has been a huge demand for smartphones in the market and Nokia has failed to meet those requirements. Sales of smartphones, which currently account for six percent of the overall handset shipments, is tipped to surge in India-the fastest-expanding market for wireless services-driven by the growth of internet among the country's 1.2 billion people (www.marketwatch.com). Further, there are other smartphones in the Indian markets such as HTC, Blackberry, Apple, Samsung, Micromax, L.G., etc. Apple's i-phone and Samsung's Galaxy series have captured the android phone market and are offering best of services which Nokia has so far been unable to provide. Nokia has just now launched its smartphones, Lumia 710 and Lumia 800, using Microsoft Corporation's Windows operating system while other players have already made their stand strong enough to counter Nokia's new products.

Distribution Strategies

Nokia has a strong distribution network that has helped market its products to the customers in an effective and efficient manner.

For Nokia, India was an ideal mobile communications market. Because of high population, high demand for handsets, limited reach of landlines in several parts of the country, and low penetration level made it a major mobile destination.

Nokia has nine production facilities located at different regions across the globe. In India, Nokia has a production facility at Chennai set up in the year 2006. It is not only Nokia's one of the biggest facilities but is also big on sustainability. In 2010 it received the Golden Peacock Award for its high standards of environment management and it is highly active in the community with projects ranging from a local library programme to village regeneration projects (www.nokia.com)

In India, Nokia has more than 2.5 lakh retail outlets and approximately 750 support centres across more than 400 cities and towns (www.voicendata.ciol.com).
To market its products, in 2009, Nokia piloted a scheme in two Indian states where it sold handsets on a weekly instalment of 100 rupees over 25 weeks. Nokia planned to rollout the microfinance offer in 12 Indian states (www.cellbharat.com).

Nokia, which has a target of connecting one billion people via mobile internet, says a third of it would come from India. Its new focus is on innovation to put its growth back on track. According to CEO of Nokia, “80% of mobile growth will come from countries such as India, Russia, Brazil and Indonesia. Out of these, India is the fastest growing market.” India was one of the five markets where the company introduced low cost mobiles (www.articles.timesofindia.indiatimes.com).

In June 2011, Nokia entered the dual SIM segment with the launch of Asha phones. This move has been made in order to re-capture the market lost due to the launch of low cost dual SIM mobile phones by other mobile firms.

Nokia plans to introduce both feature phones and smartphones with better and improved variants. According to its MD, “India is a hypercompetitive market in all segments. There will be lots of players always but our focus will be on scale and innovation.”

In the current market scenario, there are a number of smartphones being added almost every month. Nokia needs to counter these threats from smartphone giants as well as the new entrants in the market so as to remain at the top.

7.2.2 Samsung

Samsung Group is a South Korean multinational conglomerate corporation headquartered in Samsung Town, Seoul, South Korea. It comprises numerous international affiliated businesses, most of them united under the Samsung brand (www.samsung.com).

Notable Samsung Group’s industrial subsidiaries include Samsung Electronics, the world's largest information technology company measured on the basis of 2010 revenues (www.ft.com), Samsung Heavy Industries, the world's second-largest shipbuilder measured by 2010 revenues (www.bloomberg.com), and Samsung Engineering and Samsung C&T, respectively the world's 35th and 72nd largest
construction companies (enr.construction.com). Other notable subsidiaries include Samsung Life Insurance, the world's 14th-largest insurance company (money.cnn.com), Samsung Securities, Samsung SDS, Samsung Everland, the oldest theme park in South Korea (www.forbes.com), Cheil Worldwide, the world's 19th largest advertising agency in terms of 2010 revenues (investing.businessweek.com) and Shilla Hotel.

In 1938, Lee Byung-chull (1910–1987) of a large landowning family in the Uiryeong county came to the nearby Daegu city and founded Samsung Sanghoe, a small trading company with forty employees located in Su-dong (www.samsung.com). It dealt in groceries produced in and around the city and produced noodles itself. The company prospered and Lee moved its head office to Seoul in 1947. When the Korean War broke out, however, he was forced to leave Seoul and started a sugar refinery in Busan as a name of Cheil Jedang. After the war, in 1954, Lee founded Cheil Mojik and built the plant in Chimsan-dong, Daegu. It was the largest woollen mill ever in the country and the company took on an aspect of a major company.

In the late 1960s, Samsung Group entered into the electronics industry. It formed several electronics-related divisions, such as Samsung Electronics Devices Co., Samsung Electro-Mechanics Co., Samsung Corning Co., and Samsung Semiconductor & Telecommunications Co., and made the facility in Suwon (www.samsung.com). Its first product was a black-and-white television set. In 1980, the company acquired Hanguk Jeonja Tongsin in Gumi, and started to build telecommunication devices. Its early products were switchboards. The facility was developed into the telephone and fax manufacturing systems and became the centre of Samsung's mobile phone manufacturing. They have produced over 800 million mobile phones to date. The company grouped them together under Samsung Electronics Co., Ltd. in the 1980s.

**Entry into Telecommunications Market**

Samsung Telecommunications is one of five business units within Samsung Electronics, belonging to the Samsung Group, and consists of the Mobile Communications Division, Telecommunication Systems Division, Computer Division, MP3 Business Team, Mobile Solution Centre and Telecommunication R&D
Centre. Telecommunication Business produces a full spectrum of products from mobiles and other mobile devices such as MP3 players and laptop computers to telecommunication network infrastructure. Headquarters is located in Suwon, South Korea.

In 2007, Samsung Telecommunication business reported over 40% growth and became the second largest mobile device manufacturer in the world (www.mobile.engadget.com). Its market share was 14% in Q4 2007, growing up from 11.3% in Q4 2006 (www.knowyourmobile.com). At the end of November 2011, Samsung sold more than 300 million mobile devices and set still in second after Nokia with 300.6 million mobile devices sold in the first three quarter of 2011 (www.paidcontent.com).

In 1977 Samsung Electronics launched the Telecommunication Network business, and in 1983 it initiated its mobile telecommunications business with the hope that this would become the company's future growth engine. In 1986, Samsung was able to release its first built-in car phone, the SC-100, but it was a failure due to the poor quality. After 2 years of R&D, Samsung developed its first mobile phone (or "hand phone" in Korea), the SH-100 in 1988. It was the first mobile phone to be designed and manufactured in Korea. But the perception of mobile devices was very low and although Samsung introduced new models every year, each model sold only one or two thousand units.

In order to achieve new dimensions, Samsung executives pointed out every problem the company had and emphasised that Samsung needed a turnaround and declared a new management initiative “Samsung New Management.” The “New Management” reached to the mobile phone business as well, and the group’s Chairman Lee gave the division an ultimatum: “Produce mobile phones comparable to that of Motorola by 1994, or Samsung would disengage itself from the mobile phone business.”

In November 1993, the development team finally unveiled a new model, the SH-700. This model was quite remarkable. It weighed less than any other company's models, the design was compact, and its quality was substantially improved over previous models. Each product manufactured was tested piece-by-piece to assure perfect
quality. Phones with any kind of defect were burned openly for all employees to see. (The products that had been burned were worth 15 billion won or $188 million). The burning ceremony ingrained the motto “Quality is Pride”, the essence of New Management, in every employee’s mind. In October 1994, the SH-770 was introduced under the brand name “Anycall.” It was a result of the marketing team’s effort at brand-building. The model was an upgraded version of the SH-700, with a few changes in design and improvements in product quality. Samsung expected that branding would change customers’ perception of Samsung’s mobile phone and build up their trust. Aggressive marketing campaigns started as well. At the initial stage, the most important objective of the company's marketing strategy was to break customers' preconception that Samsung’s phone would be inferior to Motorola's. To market this idea of quality, Samsung developed the slogan, “Strong in Korea's unique topography.” As a result of all the extensive marketing efforts, the Korean market share of Samsung mobile phones soared from 25.8 percent in October 1994, to 51.5 percent in August 1995. In the same period, Motorola's market share dropped from 52.5 percent to 42.1 percent (www.voicendat.ciol.com).

**Entry in the Indian Market**

In December 1995, Samsung Electronics entered the Indian market. Headquartered in New Delhi, Samsung India has widespread network of sales offices all over the country.

The Samsung’s manufacturing unit for Colour Televisions, Mobile phones, Refrigerators and Washing Machines is located at Noida, near Delhi. Samsung’s 'Made in India' products like Colour Televisions, Mobile phones and Refrigerators are being exported to Middle East, CIS and SAARC countries from its Noida manufacturing complex. In November 2007, Samsung commenced the manufacture of Colour televisions and LCD televisions at its state-of-the-art manufacturing facility at Sriperumbudur, Tamil Nadu. The Company is also manufacturing fully automatic front loading washing machines at its Sriperumbudur facility (www.samsung.com).

Samsung India is the hub for Samsung's South West Asia Regional operations. The South West Asia Headquarters, under the leadership of Mr. Jung Soo Shin, President & CEO, looks after the Samsung business in Nepal, Sri Lanka, Bangladesh, Maldives
and Bhutan besides India. Samsung India which commenced its operations in India in December 1995 enjoys a sales turnover of over US$ 1bn in just a decade of operations in the country (www.time4education.com).

According to Mr. Shin, the company expects revenue from India to double to $10 billion by 2014, driven mainly by the mobile devices and flat-panel television businesses and the company plans to invest more than $70 million over the next three years to expand an existing factory in the southern Indian state of Tamil Nadu at Sriperumbudur.

The company’s thrust on Product Innovation and R&D have given the company a competitive edge in the marketplace. Samsung has two Software development centres - Samsung India Software Centre (SISC) and Samsung India Software Operations unit (SISO) at Noida and Bangalore respectively (www.samsung.com).

While the Samsung India Software Centre is developing software solutions in Samsung’s global software requirements for hi-end televisions like Plasma and LCD TVs and Digital Media Products, SISO is working on major projects for Samsung Electronics in the area of telecom: wireless terminals and infrastructure, Networking, SoC (System on Chip) Digital Printing and other multimedia/digital media as well as application software. In addition to working on global R&D projects, SISO is also helping Samsung India’s Mobile business by focusing on product customisation for the Indian market. Samsung India currently employs around 2000 employees across its R&D Centres at Noida and Bangalore.

Samsung India is also carrying out Hardware R&D at its Noida R&D Centre. The focus of the R&D Centre is to customise both Consumer Electronics and Home Appliance products to better meet the needs of Indian consumers. From Flat televisions with 'Easy View' technology, Frost free refrigerators with Stabiliser free operations to Semi automatic washing machines with Silver Nano technology, the Samsung R&D Centres in India are helping the company to continuously innovate and introduce products customised for the Indian market (www.samsung.com).

The company entered this market with its focus mainly on colour televisions. Later, with the growth and advancement in the electronics sector, the company diversified
its offerings to colour monitors, home appliances, mobile phones, etc. The firm established itself in the electronics market with new and innovative products but it lagged in the mobile phone market with Nokia leading all the way. The break came when Reliance Infocom entered into an exclusive agreement with Samsung and L.G. to manufacture mobile handsets for them at a very affordable price. This helped the firm to start establishing itself in the Indian market previously dominated by Nokia (www.crpsouth.org).

Even though Nokia is still the leader in the Indian Mobile phone market, Samsung is fast catching up and is a big threat to Nokia’s dominance. The Korean mobile phone giant is quickly growing its market share during the last few years. It reported a revenue growth of 21.7% during last year as against Nokia’s flat revenue growth. Nokia’s revenue during 2011 was Rs. 12929 cr. against Rs. 12900 cr. during the previous year.

The firm saw tremendous growth in sales of its mobile handsets with new and improved technology. Since 2009, the company has seen a boost as a result of introduction of touch screen and android based smartphones in line with Apple Inc.’s i-phone, HTC and Blackberry devices. Samsung’s sales have shot up and the firm has got a significant increase in its market share in the cellphone sector.

With the launch of Galaxy series handhelds, the company is giving market leader Nokia, a run for its money. The company recently launched Galaxy Note with superb features and advanced applications, which is becoming a hit amongst the youth and the office goers alike.

With the kind of pace and growth the company is following, it is surely going to overtake the market leaders to grab the top spot in the Indian mobile phone market.

7.2.3 L.G.

LG Corporation is the second-largest South Korean conglomerate company (www.forbes.com) and is headquartered in the LG Twin Towers in Yeouido-dong, Yeongdeungpo-gu, Seoul (www.lg.com).
LG produces electronics, chemicals, and telecommunications products and operates subsidiaries like LG Electronics, LG Display, LG Telecom and LG Chem in over 80 countries.


Goldstar produced South Korea's first radio. Many consumer electronics were sold under the brand name GoldStar, while some other household products were sold under the brand name of Lucky. The Lucky brand was famous for its line of hygiene products such as soaps and HiTi laundry detergents, but most associated with its Lucky and Perioe toothpaste.

In 1995, to better compete in the Western market, the Lucky-Goldstar was renamed “L.G.”, the abbreviation of “Lucky-Goldstar”. More recently, the company associates the letters L.G. with the company tagline “Life's Good”. This tagline came from Australia, where many of the products are tested first by LG. Since 2009, LG also owns the domain name LG.com (www.vb.com). In 1996 L.G. formed a joint venture with IBM. This joint venture was later terminated (www.news.cnet.com).

**LG Electronics**

LG Electronics is a global electronics and telecommunications company headquartered in Yeouido, Seoul, South Korea. The company operates its business through five divisions: mobile communications, home entertainment, home appliance, air conditioning and business solution. LG Electronics is the world's second-largest manufacturer of television sets (www.displaysearch.com) and third-largest producer of mobile phones in the world (www.bloomberg.com). The company has 75 subsidiaries worldwide that design and manufacture televisions, home appliances, and telecommunications devices. LG Electronics owns Zenith Electronics and controls 37.91 percent of LG Display (www.lgsolutions.com). Its mobile communications
division provides mobile communication terminals, personal computers and communication devices. The home entertainment division offers liquid crystal display (LCD) televisions (TVs), plasma display panel (PDP) TVs, PDP modules, and audio, video and storage devices. The home appliance division provides refrigerators, washing machines, microwave ovens, cleaners, compressors, motors and others. The air conditioning division provides air conditioners and solar cells. Its business solution division provides integrated solutions of hardware, software, network, contents and systems.

The company was originally established in 1958 as GoldStar, producing radios, TVs, refrigerators, washing machines, and air conditioners (www.lg.com). In January 2009 LG was able to buy the domain name LG.com, for a price reportedly to be more than $100 million, placing it among the companies who own their two letter brand's domain name (www.vb.com).

In 1994 GoldStar gained sponsorship from the 3DO Company to make the first 3DO Interactive Multiplayer. In 1995, GoldStar was renamed LG Electronics, and acquired Zenith Electronics of the United States. LG Solar Energy is a subsidiary formed in 2007 to allow LG Chemicals to supply poly-silicon to LG Electronics for production of solar cells. In 2008, LG took its first dive into the solar-panel manufacturing pool, as it announced a preliminary deal to form a joint venture with Conergy. Under the deal, set to be completed by year's end, LG would acquire a 75 percent stake in Conergy's Frankfurt solar-panel plant (www.lg.com).

**Mobile Communications**

LG Electronics is the world's third largest handset maker behind leader Nokia, and Samsung. LG said it expects a significant increase in mobile phone sales this year 2010, while 20 new smartphones present and aims to become one of the leading manufacturers in the sector by 2012.

The Korean company is expected to sell an estimated 140 million phones in 2010, said Skott Ahn, CEO of mobile phone unit. Ahn said LG Electronics reported a global market share in double digits in 2009 for the first time, despite a 5% contraction in the global market.
In the 3rd quarter of 2010, L.G.'s market share of the global mobile phone market had dropped to 6.6% as compared to 10.3% in third quarter of 2009 (www.lgcorp.com). Overall, LG sold 116.7 million mobile phones in 2010, corresponding to a market share of 8.4% (www.lg.com).

L.G. mobile devices are made for GSM networks as well as for CDMA networks worldwide. LG phones are available also in unlocked versions that can be used on any GSM network worldwide and not just for a specific carrier's network (www.marketwatch.com).

**Entry in the Indian Market**

L.G. Electronics set up its base in India in January, 1997. Its corporate office is located at Greater Noida, U.P., India. There are more than 3000 employees working for the group. L.G. set up its state-of-the-art manufacturing facility at Greater Noida in 1998 with an investment of Rs. 500 crores. In 2004, it set up its Greenfield manufacturing unit in Pune, Maharashtra with an investment of Rs. 900 Crores. Both the Indian manufacturing units have been designed with the latest technologies at par with international standards and are one of the most eco-friendly units amongst all L.G. manufacturing plants in the world (www.lg.com).

L.G. Soft India, the innovation wing of L.G. Electronics in Bangalore is its largest R&D centre outside Korea. It focuses on niche technology areas such as mobile application development, digital video broadcast and biometrics software and support. Motivated by a passion for technology, a strong work culture and loyalty to the organisation, the company is determined to see L.G. become one of the top three brands globally.

Starting 1998, L.G. has targeted broad, price conscious consumers who wanted the white goods but were turned off by the relatively high price of products offered by the competitors. L.G. started off by offering them the value proposition in terms of quality yet affordability. It also rolled out one of the biggest distribution networks in consumer goods industry in India which helped it to reach to deeper markets and gave it ability to understand the nuances of broader consumer market. Backed with this
market information, it designed and sold products with localised features and also heavily advertised in its advertising campaigns.

With its focus on wide distribution and marketing support, the company has been able to craft out in ten years, a premium brand positioning in the Indian market and is one of the most preferred brands in the market today.

**Entry into Indian Mobile Phone Market**

LG Electonics India Ltd. (LGEIL) started its operations in India in May, 1997. In India for more than a decade now, it is the market leader in consumer durables, and a leading technology innovator in the information technology and mobile communications business. Acknowledged as one of the most formidable brands, it is the recognized trendsetter for the consumer durable industry in India with the fastest ever nationwide reach, latest global technology and product innovation. LGEIL has an impressive portfolio of Home Appliances, Consumer Durables, Digital Display products, GSM mobile phones and IT products (www.lg.com).

The firm produced mobile phones for the Indian markets but could not be successful because of the high price of the handsets. The customers were not very much willing to purchase costly handsets when Nokia had already established well in the market.

The firm then started off by offering customers the value proposition in terms of quality yet affordability. It also rolled out one of the biggest distribution networks in consumer goods industry in India which helped it to reach out to the deeper markets and ability to understand the nuances of broader consumer market. Backed with this market information, it designed and sold products with localised features and heavily advertised in its marketing campaigns.

The major breakthrough came in 2004 when Reliance Communications entered into an exclusive contract with L.G. and Samsung to manufacture affordable mobile handsets for it (www.cprsouth.com). The customers started to rely on handsets produced by L.G. and the brand was soon able to penetrate into the communications sector quite successfully. L.G. soon captured third place in the mobile market lagging behind Nokia and Samsung. The brand continued to grow at a steady pace until 2008.
when other small mobile handset manufacturers entered this sector. Further, with the advancement in technology, the demand for smartphones and other android based handsets in the market grew rapidly. These factors affected the handset sales of L.G. as it could not cater to these demands of the customers. Moreover, other brands such as Samsung and Micromax introduced a series of smartphones that provided superb mobile telephony options to the customers. L.G. started late in introducing such communication solutions and therefore, lost a major share in the market. The company is now targeting customers by introducing android based phones such as the Optimus series and a few other smartphones. The company plans to further enhance its handset reach in the years to come.

### 7.2.4 Micromax

Micromax is a telecommunications company based in Gurgaon, Haryana, India. It is a manufacturer of wireless telephones. Micromax has 23 domestic offices across the country and international offices in Hong Kong, Bangladesh, Nepal, Sri-Lanka, Maldives, UAE, Kingdom of Saudi Arabia, Kuwait, Qatar, Oman, Afghanistan and Brazil (www.khaleejtimes.com).

Micromax Mobile's strategy focuses on innovating, designing and using the latest technologies to develop products at affordable prices. Its products include long battery phones, 3G phones, dual GSM capability, QWERTY phones and gaming phones (www.micromaxinfo.com).

Micromax made its debut in 1991, but it has only become well-known in the past few years. The company entered the Indian cell phone handset market in March 2008. Within six months, it had won a market share of 0.59%.

Micromax in its website claims it was the “fastest growing among India’s top five mobile brands during the twelve month period ended March 31, 2010”.

Micromax’s product portfolio embraces more than 60 models today, ranging from feature rich, dual-SIM phones to QWERTY, touch-enabled smart-feature phones and 3G Android Smartphones. The company also lays special focus on the products to
enhance the customer's overall experience with the device. Most of its products come with innovative packaging and bundled accessories.

Globally, Micromax caters to a varied target audience having their focus mainly on the youth. Its overseas product portfolio is tailor-made to suit the needs and aspirations of its growing consumer base in the international markets.

Micromax is the largest Indian domestic mobile handsets company in terms of units shipped during the quarter ended March 31, 2010 and the third largest mobile handset seller in India as at March 31, 2010. Presently, the company has less than 500 employees.

Micromax has made the handsets available through all leading outlets across the country, reaching out to the market with 150% mobile penetration and has its stores located in Croma stores, Planet M, e Zone, Reliance Webworld, Univercell. The Mobile Store, etc. (www.micromaxinfo.com)

Micromax Informatics Limited has announced its foray into Maldivian telecom space through an exclusive partnership with Sense Wood Maldives (Pvt) Ltd.

The company entered the Brazilian market in August, 2011. With initial investments of around BRL 20 million, the company is all set to take on its Brazilian competitors. Present in many countries across the globe, the Indian mobile manufacturer brings models targeting the youth, focusing on key features such as dual SIM, multimedia and 12 days marathon battery products.

Very recently, the company became the 12th largest handset manufacturer in the world, with one per cent share globally. Micromax, according to Global Handset Vendor Market share report from Strategy Analytics, is now larger than global Japanese handset makers like Sharp and NEC. It has even moved ahead of Lenovo and is closing the gap with Sony Ericsson globally. Strategy Analytics tracks the world’s 30 largest handset vendors on a quarterly basis (www.business-standard.com).
The Indian brand is reaching out to the global frontiers with innovative products that challenge the status quo that innovation comes with a price. With an in-depth understanding of rapidly changing consumer preferences coupled with the use of advanced technologies, Micromax has been able to differentiate itself from the competitors through innovation and design.

Though Micromax sold its first mobile phone just three years ago, it appears confident it can pull off a coup - it already has a 6.5 per cent market share (Voice & Data Journal, 2010-11). It has roped in actor Akshay Kumar as its brand ambassador, sports a new tagline of "boring is out" and is looking at innovative means to grab market share. One of these, for instance, is a mobile phone that also doubles up as a remote control for your air-conditioner, TV set or DVD player, perhaps even all three.

There have been innovative co-branding deals with MTV which have helped give the brand a huge push in the youth market. Phones with Swarovsky crystals on each key have also been introduced for those looking for low-price chic.

Since its entry into the Indian mobile phone market in March 2008, the company has seen a rise in market share. Micromax is now the largest Indian domestic mobile handsets company, in terms of units shipped during the quarter ended March 31, 2010 and the third largest mobile handset seller in India as at March 31, 2010. On March 31, 2010 the company registered the market share of 6.24% for that quarter, which grew from 0.59% in September 2008. Micromax became the fastest-growing mobile brand in India for the fiscal year 2009-2010. Handset sales have grown by 123.48% from 1.15 million units in the quarter ended June 30, 2009 to 2.57 million units in the quarter ended March 31, 2010 (www.micromaxinfo.com).

Rahul Sharma, one of the four co-founders of the company and its COO says, “We have a 40-people team that work on all sorts of crazy ideas that we suggest. The latest that our R&D team has managed is phones that can also be used as a remote control for consumer durables in a household, say a TV, an AC or a DVD player. We are also seeing an increasing preference, among the youth, for mobile devices that provide single-click access to popular social networking sites like Facebook and Twitter.”
Growth as a Major Mobile Handset Seller

Micromax started off quite well and within a few months, it had captured a considerable market share. People who want to buy a mobile phone worth Rs. 2,000 don't usually ask for brands, they want value for money. So, instead of trying to get more sales by cutting prices, it sold handsets that came with a 30-day battery back-up - this was an important advantage in rural areas where charging a mobile phone was a problem. The company also sold dual-SIM phones that made more sense for Tier-2 or Tier-3 markets where customers own several SIMs. Of all the models that it has in the market right now, most of them are dual-SIM handsets. It is this kind of ground-level innovation that has led to Micromax selling about 1 million handsets every month. The company expects the number to grow further with new handsets that it plans to launch soon (www.business-standard.com).

The firm entered into an exclusive partnership with Israeli based company Modu Limited to launch the co-branded and customized modu T phone in India.

The innovative feature phones from Micromax have already changed the game in the industry. In the next 2 years, as India gears up become the largest mobile market, Micromax aims to double its reach as well and strengthen its distribution network. Leading this vision will be Khaja Muzaffarullah, Head of sales for feature phone division, as he leverages his expertise on emerging markets. Khaja Muzaffarullah, was earlier with Sony Ericsson at a leadership position. Commenting on his new role, Muzaffarullah said, "The channels partners are a key to our business model and form the backbone of our strong presence in the country. We would be strengthening our distribution across the country and work towards creating a robust network that brings us closer to the customer (www.micromaxinfo.com).

Micromax has already established its leadership in the feature phone market in India and as India witnesses adoption of android, Micromax aims to build a strong portfolio of smartphones for the discerning Indian consumers.

Says Deepak Mehrotra, CEO, Micromax Informatics Ltd, "These are exciting times not only for the brand but for the industry as a whole. We are witnessing technology advancements every day and that further excites us at Micromax. The Indian mobile
industry is growing at a rate of 12% and we would like to capture this opportunity and drive the next phase of growth for the brand. We would further leverage brand’s success in this high potential Indian market and build new capabilities”.

To attain positioning and to enhance brand visibility in the territory, Micromax aims to undertake a 360 degree branding exercise and focus will be on activities like, store branding, merchandisers in key retails and channel marketing.

With a great portfolio, strong branding, marketing actions and a great distribution network, the company hopes to create a strong brand recall amongst the consumers. It plans to launch more advanced smart phones, Androids, music oriented phones and many other products that focus on innovation and design and plans to take on the rural markets as well with an aggressive marketing strategy (www.micromaxinfo.com).

The company, with such a determined team and excellent distribution strategies, is sure to take on its competitors head-on and has a great potential to rise to next level of technological advancement and brand equity.

7.3 Comparative Study

Data collected through questionnaire has been used to perform quantitative analysis in order to compare the distribution strategies of the handset manufacturers.

Pie-charts have drawn to represent the percentage of conformity of each of the players with regard to different aspects of distribution strategies.

Further, in order to comparatively analyse the distribution strategies of top four mobile handset manufacturers in India, a comparative matrix is developed.

The matrix shows the level of implementation/ adoption of some pre-defined parameters/ factors of distribution strategies. The degree of implementation is represented on a three level continuum, i.e. High, Medium and Low. High level of implementation represents more than seventy percent affirmative responses. Medium level of implementation represents affirmative responses in the range of fifty percent to seventy percent, whereas affirmative responses below fifty percent represent a low level of implementation.
Summary: The above figures depict the percentage of supply chain members associated with each brand getting help from other members of the supply chain with regard to storage of inventory in the warehouse.

Seventy-eight percent of the members associated with Nokia receive help from other supply chain members in this regard.
Figure 7.2: Use of Electronic Order Forms

Summary: The above figures illustrate the percentage of supply chain members associated with each brand making use of electronic order forms for placing the orders.

Members associated with Nokia and Micromax make the maximum use of the technology with forty-four percent of their members utilising the method.
Figure 7.3: Use of GPS/GIS

Summary: The above shown figures represent the percentage of respondents (supply chain members) associated with each brand making use of GPS and GIS for tracking and locating the consignments.

Members linked to Nokia utilise this service the most with thirty-three percent of its members making use of the facility.
Summary: The above figures provide an illustrative view of the percentage of supply chain members associated with each brand making use of warehouses for the storage of inventory.

Seventy-three percent of the members associated with Samsung make extensive use of warehouses for the storage of inventory.
Summary: Above figures depict the percentage of members associated with each brand making use of different modes of transport for the delivery of mobile handsets.

Forty-nine percent of the members associated with Micromax make use of road as well as railway for the delivery purposes.
Summary: The above figures show the percentage of respondents associated with each brand conducting surveys for understanding the buying behaviour of the customers.

Members associated with L.G. stress most upon this aspect with sixty-seven percent of its respondents conducting surveys.
Figure 7.7: Feedback from Customers

**Summary:** The above figures provide an illustrative view of the percentage of supply chain members associated with each brand taking feedback from customers for enhancing the supply chain efficiency.

Members associated with L.G. stress most upon this aspect with fifty-seven percent of its supply chain members taking feedbacks from their customers.
Summary: The above figures illustrate the percentage of supply chain members associated with each brand making use of different methods for getting customer feedback.

Fifty percent of the respondents associated with Micromax personally interview their customers for getting their feedback.
Summary: The above figures illustrate the percentage of supply chain members associated with each brand making use of the data made available by various institutes and research organisations.

Thirty-five percent of the members associated with Samsung make use of the data provided by such institutes.
Summary: The above figures represent the percentage of supply chain members making use of internet/e-mail to communicate with other channel partners. Members associated with Samsung make the maximum use of this technology with eighty-five percent of the respondents answering in affirmative.
**Summary:** The above figures depict the percentage of supply chain members seeking regular feedback from other members of the supply chain.

Ninety-five percent of the members associated with L.G. pay importance to this aspect by seeking regular feedback from other channel partners.
Summary: The above figures illustrate the percentage of supply chain members associated with each brand making use of third parties/independent agencies to gather information from the market and making it available to other channel partners.

Samsung’s supply chain members make the maximum use of this method with seventy-three percent of its members responding in affirmative.
Figure 7.13: Mode of Money Transfer

Summary: The above figures depict the percentage of supply chain members associated with each handset brand with regard to mode of money transfer.

Forty-four percent of the members associated with Micromax make payments by cash to other supply chain members.
Summary: The above figures represent the percentage of respondents associated with each handset brand with regard to repayment period of credit.

Fifty percent of the respondents associated with Nokia have a credit repayment period between three to six months.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Brands</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nokia</td>
</tr>
<tr>
<td>Assistance in Management of Inventory</td>
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<tr>
<td>Use of Electronic Order Forms</td>
<td>Low</td>
</tr>
<tr>
<td>Use of GPS/GIS</td>
<td>Low</td>
</tr>
<tr>
<td>Use of Warehouses</td>
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<tr>
<td>Regular Feedback from Customers</td>
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<td>Use of Data provided by Research Organisations</td>
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<tr>
<td>Use of Internet/E-mail</td>
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<tr>
<td>Regular Feedback from Channel Partners</td>
<td>High</td>
</tr>
<tr>
<td>Use of Information Provided by Third Parties</td>
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</tr>
</tbody>
</table>

Table 7.1: Comparative Matrix

7.4 Chapter Summary

In this chapter, case studies focussing on various aspects with regard to each handset manufacturer were developed. Comparative study with respect to different facets of distribution was also presented. Moreover, a comparative matrix for analysing the distribution strategies adopted by the manufacturers on a comparative scale was developed.
Chapter 8
FINDINGS, IMPLICATIONS AND DIRECTIONS
FOR FUTURE RESEARCH

8.1 Introduction
8.2 Key Findings
8.3 Recommendations to Supply Chain Members
8.4 Managerial Implications of the Study
8.5 Directions for Future Research
8.6 Chapter Summary
Chapter 8
FINDINGS, IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

8.1 Introduction

This chapter presents the key findings based on the results of the hypotheses testing as well as those results that have emerged out of qualitative analysis. Moreover, some recommendations to supply chain members have been discussed. Managerial implications have also been listed out in this chapter. Lastly, directions for future research endeavour have been presented.

8.2 Key Findings

- There exist significant differences with respect to Supply Chain Management, Relationship Management, Technology, Inventory Management, Marketing Strategies, Distribution Network and Distribution Strategies across the status of the supply chain members.

- Manufacturers pay greater importance to the management of the supply chain as compared to distributors or retailers.

- Manufacturers pay more importance to development of cordial relations among the members of the supply chain as compared to distributors or retailers.

- Manufacturers pay greater importance to adoption of modern technology as compared to distributors or retailers.

- Manufacturers pay higher importance to proper management of inventory for achieving desired distribution objectives as compared to distributors or retailers.

- Manufacturers are more committed to devising better marketing strategies for proper distribution as compared to distributors or retailers.
• Manufacturers pay highest importance to designing better distribution network as compared to distributors or retailers.

• Manufacturers are more committed for developing better distribution strategies as compared to distributors or retailers.

• There is no significant difference with respect to adoption of any of the dimensions of distribution strategies across the nature of the supply chain members.

• There exist significant differences with respect to implementation of Relationship Management, Technology, Marketing Strategies, Distribution Network and Risk Management across different handset brands.

• Supply chain members associated with Samsung pay greater importance to the development of cordial relations among each other as compared to members associated with other brands.

• Supply chain members associated with multiple brands pay more importance to adoption of newer technology as compared to supply chain members associated with other brands.

• Members dealing in multiple brands pay more importance to development of better marketing strategies as compared to members associated with other brands.

• Members associated with multiple brands pay higher importance to development of proper distribution network as compared to members associated with other brands.

• Supply chain members associated with Samsung pay more importance to management of risk as compared to members associated with other brands.

• Implementation of strategies for the management of inventory varies significantly across type of ownership.
• Supply chain members with sole proprietorship pay more importance to the management of inventory as compared to supply chain members working in partnership.

• There is a positive significant impact of Supply Chain Management, Relationship Management, Technology, Inventory Management, Marketing Strategies and Distribution Network on Distribution Strategies.

• Environmental Management and Financial Strategies have a negative but insignificant impact on Distribution Strategies.

• Risk Management has a positive but insignificant impact on Distribution Strategies.

• Most of the supply chain members associated with Nokia and L.G. receive help with regard to storage of inventory in the warehouses from other members of the supply chain. For Samsung and Micromax, this value is only moderately high.

• There is a low level of adoption with regard to use of electronic order forms for placing the orders among all the players.

• There is a low level of adoption regarding the use of GPS and GIS for tracking and locating the consignments among all the players.

• Barring Micromax, all other players make extensive use of warehouses for storage of inventory. For Micromax, there is a moderate level of adoption in this regard.

• There is a moderate level of research conducted by Nokia, Samsung and L.G. for understanding the buying behaviour of the customers. For Micromax, this value is low.

• Most of the members associated with each brand make use of Personal Interviews as a means of taking feedback from the customers.

• There is low level of adoption with regard to the use of data provided by different research organisations among all the players.
• All the players make extensive use of internet/e-mail for communicating with other channel members.

• All the players seek regular feedback from other channel partners.

• Nokia and Samsung make extensive use of third parties and other independent agencies in order to gather information from the market and make it available to other members in the supply chain. For L.G. and Micromax, this value is only moderately high.

• Majority of the supply chain members associated with each brand make use of Letter of Credit as a means of transferring the money.

• Most of the supply chain members associated with each brand have a credit repayment period between three to six months.

8.3 Recommendations to Supply Chain Members

• The distributors and retailers should learn the basic concepts of supply chain management from the manufacturers to enhance the productivity of the supply chain.

• The distributors and retailers must learn from the manufacturers with regard to development of fruitful relations with other channel members.

• The distributors and retailers should understand the importance as manufacturers do regarding the adoption of modern technology for developing better distribution strategies.

• The distributors and retailers must learn to effectively manage their inventories.

• The distributors and retailers must understand the importance of better marketing strategies.

• The distributors and retailers must learn to develop better distribution networks.
• The distributors and retailers must understand the importance of devising effective distribution strategies.

• Supply chain members associated with Nokia, L.G., Micromax or multiple brands must learn from the members associated with Samsung regarding the development and management of cordial relations between the supply chain members.

• Members associated with Nokia, Samsung, L.G. or Micromax must pay greater importance to adoption of modern technological methods as members associated with multiple brands do.

• Members associated with Nokia, Samsung, L.G. or Micromax should learn from the members dealing in multiple brands and must pay more importance to development of better marketing strategies.

• Members associated with Nokia, Samsung, L.G. or Micromax must learn from the members dealing in multiple brands regarding the development of effective distribution network.

• Supply chain members associated with Nokia, L.G., Micromax or multiple brands must learn from the members associated with Samsung regarding the proper management of risk in developing distribution strategies.

• Supply chain members working in partnerships must learn from sole proprietors for efficiently managing the inventories.

8.4 Managerial Implications of the Study

This research has contributed to the growing literature on the proper management of the different dimensions of distribution strategies. The findings have shed light on the importance of properly managing the different aspects of distribution strategies so as to gain competitive advantage in the market.

To conclude, the study has following implications for the mobile handset industry:
• As the world of handset manufacturing is gradually moving towards a higher degree of specialisation and innovation; core technological capability may soon become a pre-requisite for competitive advantage.

• The players need to look beyond core product and focus on complementary assets like supply chain efficiency and relationship management to achieve success.

• There is a pertinent need to collaborate and integrate across different members of the supply chain to get visibility in the supply chain.

• The members need to share knowledge held with suppliers to understand the new technology and with retailers to share demand and customer related information.

• The members need to follow same inventory policy across entire supply chain in order to respond to customers’ needs in a better way.

• There is an intense need to increase the value of the firm by addressing to the demands of the customers and maintaining fruitful relations with them.

8.5 Directions for Future Research

• In this study, nine independent dimensions having an impact on distribution strategies were identified and their impact on the distribution strategies was studied. Studies may be carried out to identify and include other independent variables that affect distribution strategies devised for the distribution of mobile handsets.

• Top four mobile companies were selected for analysing the impact of different dimensions on distribution strategies. Further research may be conducted to include more companies so that the research problems are better addressed.

• The scope of the present research was confined to limited geographical areas covering National Capital Region, Eastern Uttar Pradesh and the Pune-Mumbai regions. Research covering broader geographical area would provide better perspective on the subject.
• Three members of the supply chain viz. manufacturers, distributors and retailers were included in the research study. Inclusion of suppliers and customers in future research endeavours would provide better understanding of the subject.

• The respondent base for the collection of data for the present study was limited. Future research may be carried out with a larger sample size so that a better insight into the subject is obtained.

8.6 Chapter Summary

This chapter presented the key findings that have emerged based on hypotheses testing results with regard to various dimensions of distribution strategies. Recommendations to supply chain members have been listed that may help them in developing better and productive distribution strategies for distribution of mobile handsets. Managerial implications of the study have also been presented for the mobile handset manufacturers that may help them in reaching out to their customers in a better way. Finally, directions for the conduct of future studies have been analysed and listed out so that improved research work may be carried out.
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APPENDIX
Questionnaire

Dear Respondent,

This questionnaire is part of a research survey. Your participation in filling this questionnaire will be highly appreciated. All the information will be kept strictly confidential and will only be used for academic purposes.

Section A

Name of Organisation/Shop/ Retail Store/ Distribution Centre:

Status: Manufacturer □ Retailer □ Distributor □

Nature: Small □ Medium □ Large □

Brands associated with: Nokia □ LG □ Samsung □ Micromax □

Ownership: Sole Proprietary □ Partnership □

Location/Address: ____________________________

Contact Number: ____________________________

Email Id: ____________________________

Education Level: ____________________________

Section B

Please tick mark (✓) the most appropriate choice: (SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Proper management of the supply chain is important for the productivity of an organisation.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>2.</td>
<td>Taking steps for proper management of the supply chain is necessary for growth of the organisation.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>3.</td>
<td>Proper management of the supply chain can add to our success.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>4.</td>
<td>The politico-legal aspects help in the proper implementation of supply chain techniques.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>5.</td>
<td>Better relations with other channel partners help in getting location advantages.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>6.</td>
<td>Long-term contracts with other channel members help in better distribution management.</td>
<td>SA</td>
<td>A N D SD</td>
</tr>
<tr>
<td>7.</td>
<td>Making use of the latest technology (e-mail, phone, fax, etc.) for taking-up the orders helps in proper management of the supply Chain.</td>
<td>SA</td>
<td>A N D SD</td>
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<tr>
<td></td>
<td>Description</td>
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<tr>
<td>8.</td>
<td>Use of GIS and GPS helps in tracking the consignment.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Use of warehouses for managing the inventory is of great help in distribution.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Surveys should be conducted for understanding the needs and wants of the channel members.</td>
<td>SA A N D SD</td>
<td></td>
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<tr>
<td>11.</td>
<td>Customers' feedback helps in designing better distribution network.</td>
<td>SA A N D SD</td>
<td></td>
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<tr>
<td>12.</td>
<td>Data from institutes and research organisations is of much help for devising better distribution strategies.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Feedback from other channel partners enhances the efficiency of the distribution network.</td>
<td>SA A N D SD</td>
<td></td>
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<tr>
<td>14.</td>
<td>Using third parties for logistics improves supply and helps in better distribution.</td>
<td>SA A N D SD</td>
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<tr>
<td>15.</td>
<td>Transfer of funds electronically saves time and improves distribution.</td>
<td>SA A N D SD</td>
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<tr>
<td>16.</td>
<td>Adoption of environment friendly methods for production and distribution may prove beneficial in the long run.</td>
<td>SA A N D SD</td>
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<tr>
<td>17.</td>
<td>Conducting trainings for raising awareness towards adoption of environmental-friendly techniques can be helpful.</td>
<td>SA A N D SD</td>
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<tr>
<td>18.</td>
<td>Use of railways instead of roads will help in bringing down pollution levels significantly.</td>
<td>SA A N D SD</td>
<td></td>
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<tr>
<td>19.</td>
<td>Relationship management with customers as well as with other channel partners is a tool for better management of the distribution network.</td>
<td>SA A N D SD</td>
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<tr>
<td>20.</td>
<td>Use of JIT will help in better distribution management.</td>
<td>SA A N D SD</td>
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<tr>
<td>21.</td>
<td>Use of recycled paper for packaging is a good way to make distribution environmental friendly.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Mechanism for proper disposal of batteries and old handsets ensures healthier environment.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Adoption of pollution controlling measures such as use of battery operated trucks inside manufacturing premises should be encouraged.</td>
<td>SA A N D SD</td>
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<tr>
<td>24.</td>
<td>Proper training of the staff regarding adoption of eco-friendly practices in distribution will be an added benefit.</td>
<td>SA A N D SD</td>
<td></td>
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<tr>
<td>25.</td>
<td>Role of media has been significant in educating the customers and channel partners.</td>
<td>SA A N D SD</td>
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<tr>
<td>26.</td>
<td>An educated customer knows exactly what to buy and thus helps in the development of better distribution networks.</td>
<td>SA A N D SD</td>
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<tr>
<td>27.</td>
<td>Location of warehouses close to distribution centres saves time and helps in timely distribution.</td>
<td>SA A N D SD</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Various promotional schemes at different levels of the supply chain ensure a motivated and dedicated team.</td>
<td>SA A N D SD</td>
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</tbody>
</table>
Most of the channel members are aware of the benefits of proper distribution and supply chain management.

The supply chain members should be trained for imparting various skills and knowledge in order to enhance the productivity of the distribution network.

Credit policy should be encouraged for supporting small but dedicated channel partners.

Effective distribution strategies boost sales and increase market share.

Modern marketing tools such as use of electronic and print media help in the design of proper distribution network.

Efficient handling of the finances enhances the productivity of the distribution network.

Each and every member involved in the distribution must have a clear understanding of the working of the distribution network.

The firms must continually strive for betterment in the distribution strategies.

The finances must be appropriately allocated to every process of the supply chain for achieving desired results.

Importance should be given to customer satisfaction rather than just profit making.

The distribution risk has changed significantly over the past few years.

Employment of proper risk management techniques is a must for effective distribution.

**Section C**

Please tick mark (✓) the most appropriate choice:

1. Do you get any help from other supply chain members regarding the storage of inventory in the warehouses?
   - □ Yes
   - □ No

2. Do you make use of Electronic Order Form for placing the orders?
   - □ Yes
   - □ No

3. Do you make use of high-end electronic gadgets like GPS and GIS for tracking and locating the consignment?
   - □ Yes
   - □ No
   - □ Sometimes

4. Do you make extensive use of warehouses for storing the handsets?
   - □ Yes
   - □ No
5. What is the mode of transport for delivering the handsets?
   - Road
   - Rail
   - Both

6. Do you conduct surveys for understanding the buying behaviour of the customers?
   - Yes
   - No

7. Do you take regular feedback from the customers in order to enhance the effectiveness of the supply chain?
   - Yes
   - No

7(a). What is the form of taking feedback?
   - Questionnaire
   - Telephonic Interviews
   - Personal Interviews
   - Electronic Feedback Form

8. Do you make use of the data provided by various institutes and research organisations?
   - Yes
   - No
   - Sometimes

9. Do you make use of e-mail/internet to communicate with other channel partners?
   - Yes
   - No

10. Is regular feedback sought from other channel partners?
    - Yes
    - No

11. Do you make use of third parties/independent agencies in order to gather information from the market and make it available to channel partners?
    - Yes
    - No

12. What is the mode of money transfer?
    - Cash
    - Letter of Credit
    - Electronic Transfer

13. How much is the repayment period for credit?
    - Less than 3 months
    - 3-6 months
    - More than 6 months