Customer Satisfaction in Business-to-Business Marketing: An Analysis of the Role of Relationship Quality and Order Management Cycle

THESIS

Submitted in partial fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY

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BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE
PILANI (RAJASTHAN) INDIA
2007

Dedicated to my beloved late mother and father

ACKNOWLEDGEMENTS

After a long journey of more than six years I am finally writing the “last page” of the dissertation. When I thought of doing research on customer satisfaction way back in the year 2000, I developed the idea with Dr. S. R. Ganesh of TCS. He guided me a lot as he was familiar with the topic of the research. I am thankful to him especially for his suggestion of choosing companies from different industries while doing the case studies to get a better comparison.

When S. P. Jain Institute of Management and Research (SPJIMR) launched its PhD program in 2001 in collaboration with Birla Institute of Technology and Science (BITS), Pilani, I was a faculty member of SPJIMR and joined the very first batch of the program. Dr. Ravi Prakash of BITS and Dr. M. L. Monga, Professor Coordinator, PhD Program, SPJIMR had set a very high standard of course work. The program has been as much an exercise of cooperative learning as of individual pursuit. I acknowledge the advice, critique, cooperation and support of a large number of my colleagues, students and organizations in conducting this research. I would especially like to thank my two fellow doctoral program peers, Prof. S. Sriram and Prof. Sunil Rai for interactions with different yet valuable ideas.

After Dr. M. L. Monga left SPJIMR, Dr. M. J. Arul and Dr. Mythili Venkateswaran were my mentors. I sincerely thank both of them for their support.

Dr. M. L. Shrikant of SPJIMR was my first supervisor. I express my deep gratitude to him as I consider him as my management Guru. His uncompromising attitude for quality has helped me work harder. However, since I changed jobs and joined the Institute for Technology and Management (ITM), I had no other option but to look for a new supervisor.

Dr. M.L. Monga kindly consented to become my supervisor in late 2004. Dr. Monga was my colleague but I have really discovered 'Masterji' in him when he started playing the role of my supervisor. Unfortunately for me, but fortunately for him, Dr. Monga started his own Business School in mid 2005, where he became so preoccupied that he could not spare any time for me in spite of his sincere desire to do so.

It was then that I asked Dr. Suranjan Das, Professor of Quantitative and Marketing, SPJIMR, to be my formal supervisor. He agreed. Dr. Das is my colleague and like my younger brother. He has guided me from the very beginning of my research and helped me in collating the data, processing it and doing analysis helping me while I was writing my dissertation. He really knows how to ask tough questions especially when he challenges me to provide a connection in my thought process. I realized that he wanted me to have the right answers to all those questions. I could subsequently present them in a comprehensible manner and back them up convincingly. I am thankful to him for being generous with his time and agreeing to become my supervisor.

Although I cannot mention everybody by name, a lot of people including many industry leaders, executives, stockists/dealers, my PGDM students were generous with their time and gave me the opportunity to conduct case studies and surveys. Many of them actively participated in formulating questionnaire and conducting the surveys. I have also got generous help from my faculty colleagues of both SPJIMR and ITM. I owe my gratitude to all of them for whatever strength this research possesses but I like to particularly mention Prof. J. K. Nanda, who helped me in understanding the type of quantitative analysis required for my study.

I like to thank Prof. P. V. Ramana, Chairman, ITM Trust for allowing me to complete my doctoral work while performing the challenging duties of Dean and Director of ITM.
I am grateful to Dr. Ravi Prakash, Dean and Dr. Srinivasa Prakash Regalla, Assistant Dean, R & C Division, BITS and thankful to Mr. Dinesh of R&C, BITS who encouraged me and supported me from time to time to complete my doctoral work.

Finally, but for my caring wife Sunanda, with her love, affection, and friendship, I could not have carried this tiresome burden of the doctoral study. Whenever I was faced with difficult times and subsequently overcame them, I remembered my parents for all the lessons that I learnt from them in overcoming difficulties in life. I fondly remember the gentle reminders that my sister-in-law Monica gave me from time to time to complete my doctoral program. I also thank my younger son Kaushik and my colleague Jayanti Banerjee for helping me in edit my dissertation.

ABSTRACT

Customer satisfaction (CS) is the key to success for any business organization in the long run. High CS leads to repeat purchases, referrals, endorsements, and spreading the positive 'word of mouth'. Consequently, share of wallet, market share and revenue, long-term financial performance, and market value of equity go up and cost of acquiring and servicing the customer goes down.

Amongst the various factors that drive CS, two variables (a) Relationship quality (RQ) (b) Order Management Cycle (OMC) seem to have a substantial effect on CS. While most studies have analyzed these two relationships independently (viz. RQ versus CS, and OMC versus CS), this study has focused on the simultaneous impact of these two variables RQ and OMC on CS. Beyond this however, RQ and OMC has also been studied in a combined influence with two other associated variables, product quality (PQ) and price fairness (PF). The impact of all these variables, on how a purchase decision is eventually made and what influences the same, has emerged out of this study.

This research raises six prominent questions with regard to CS and how these lead to repeat purchase behavior and eventual customer loyalty.

a) Does *Customer Satisfaction* depend upon *Product Quality*?
b) Does *Customer Satisfaction* depend upon *Price Fairness*?
c) Will the combined effect of both *Product Quality* and *Price Fairness* on *Customer Satisfaction* be more than just the sum of the individual effects of *Product Quality* on *Customer Satisfaction*, and *Price Fairness* on *Customer Satisfaction*?
d) Does *Customer Satisfaction* depend upon *Relationship Quality*?
e) Does *Customer Satisfaction* depend upon *Order Management Cycle*?
f) Will the combined effect of both *Relationship Quality* and *Order Management Cycle* on *Customer Satisfaction* be more than just the sum of the individual effects of *Relationship Quality* on *Customer Satisfaction*, and *Order Management Cycle* on *Customer Satisfaction*?

This study is empirical in nature and has four distinct phases. The first three phases were carried out by the case method in two companies, one in the chemical and the other in the engineering industry. The first phase consisted of exploratory studies, focus groups and in-depth interviews. A pilot study was done in the second phase. During the third phase, a longitudinal study was carried out on 50 samples of buying organizations from a specialty chemical company and 30 samples of buying organizations from an engineering company over three years from 2002 to 2004.

The final (survey) phase integrated the earlier three phases and led to the testing and in-depth analysis covering three industries, viz. chemical, engineering and computer (selecting two companies in each industry). A total of 409 valid responses were received from 310 buying organizations of those six companies (seller). This culminated in validating the hypotheses of our study.

The following methodology was adopted for this study. The questionnaire was prepared and validated by focus groups and in-depth interviews with managers and DMU of buyers of two companies as stated above. In the pilot study, the questionnaire was tested for reliability and a test run was done for the methodology adopted. The company field managers and executives, and management students personally administered the final structured questionnaire in all phases of the study to the primary customers, under the guidance of the researcher.

Data analysis has been done using standard statistical techniques viz. Cronbach's Alpha, Mean, Standard deviation, Correlation analysis and Regression analysis in order to arrive at significant research conclusions. The major findings are mentioned below.

- Product quality & performance leads to customer satisfaction. Poor relationship quality & order management cycle, results in customer dissatisfaction.
- It was found that relationship quality and order management cycle are the major differentiating factors, contributing to various degrees of customer satisfaction.

- A conscious improvement of relationship quality, and order management cycle, is likely to enhance the degree of customer satisfaction (which is already achieved to an extent by customer value, arising out of good product quality and price fairness). Hence relatively lesser satisfaction on product quality and price fairness, but higher satisfaction on relationship quality and order management cycle can generate higher levels of customer satisfaction.
- Highly satisfied customers are willing to pay a higher price and ignore any deficiency in order management cycle when new technology-based products are introduced. This corroborates the fact that customer satisfaction is a bundle of multiple factors, not just about best quality and price fairness. However, the extent of relationship quality can help customers even in accepting new products, without much apprehension.
- Price and credit help to get higher quantity of orders but CS still remains the key factor in repeat orders, thereby humbling the influence of price and credit.
- It was also found that lowering prices may attract many customers (fishing type) but relationship quality helps in retaining the existing pool of customers.

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LIST OF ABBREVIATION

CL: Customer Loyalty

Crop: Specialty Chemical company (Corp Protection Division)

CS: Customer Satisfaction

CSR: Corporate Social Responsibility

DiesEng: Diesel Engine Manufacturing Company

DMU: Decision Making Unit

Lap_AmCo: American Latop Company

Lap_JapCo: Japanese Laptop Company

PF: Price Fairness

OEM: Original Equipment Manufacture OEM

Polymr: Polymer Manufacturing Company

PQ: Product Quality

RQ: Relationship Quality

RQSA: Relationship Quality (Softer Aspects)

RQTA: Relatioship Quality (Transactional Aspects)

SeamTb: Seamless Tube Manufacturing Company

Chapter I

INTRODUCTION

"The role of a marketing researcher must include consulting skills, technical proficiency, and sound management. The focus of the role is to provide information to identify marketing problems and solutions in such a way that action can be taken."
--- Ron Tatham, Chairman, Burke, Inc.

"Except in a few rare instances, complete customer satisfaction is the key to securing customer loyalty and generating superior long-term financial performance."
--- W. Earl Sasser, UPS Professor of Service Management and Associate Dean, Harvard Business School.

The goal of any business is to achieve long-term financial performance [Chiquan, and Jiraporn, 2005]. The loyal customers are assets for the managers. Not only do they make repeat purchases, but they also recommend others to buy, leading to long-term financial returns for the companies. Only highly satisfied customers can become loyal customers [Anderson et. al., 1994]. Hence customer satisfaction has assumed one of the critical success factors in business. This researcher would like identify the factors that practicing managers can use as tools for generating customer satisfaction in business-to-business marketing.

1.1. Background of the Research

Business-to-business marketing is marketing of goods and services by an enterprise to other enterprises viz. commercial, governmental, and not-for-profit organizations. In business-to-business marketing, goods and services are usually purchased for value

enhancement and subsequent offering to their customers, where as, in consumer markets, goods and services are bought for their final consumption. The distinction between business-to-business and consumer marketing exists in terms of the intended customers, not in terms of products and services [Corey, 1991].

In consumer markets, the decision-making unit (DMU) for purchase of any item is often an individual or a family affair, whereas in business-to-business markets, the DMU is part of the much larger and complex process. In an enterprise, the purchase of an item may involve a host of departments, such as purchasing, engineering, finance, manufacturing, etc.

The purchase decision in business-to-business markets is influenced by the economic factors of the item to be purchased. Economic factors are price, product quality, dependability, service and potential for technical contribution. In business-to-business markets, DMU members are drawn from a host of departments, such as purchasing, engineering, finance, manufacturing, marketing etc. etc. Sometimes even the top management is involved and gets included in DMU in very high value or critical item purchase. The personal needs of DMU members for recognition and advancement, and their social needs to satisfy the using departments are crucial motivating factors that influence the decision making process in purchase [Webster, 1968].

So DMU is not only governed by the economic factors but also by the behavioral aspects of individual members of DMU. Hence satisfying DMU members on both accounts is the key issue in business-to-business marketing. DMU being the customer in business-to-business marketing, customer satisfaction assumes critical significance in business-to-business marketing.

Customer satisfaction (CS) is a business term which is used to capture the idea of measuring how satisfied an enterprise’s customers are, with the organization's efforts in the market place. In general, product/service satisfaction is a person’s feelings of pleasure

or disappointment, resulting from comparing the perceived performance of the product/service in relation to his or her expectations [Kotler, 2003].

Purchasing organizations, who consume large volume or purchase high value items, normally purchase directly from selling organizations. These customers are known as direct customers. Relatively smaller volume consuming organizations get supply through the dealers and hence they are known as indirect customers. Dealers are also known as primary customers as they interface and get supply from vendors directly. The organizations that get supply from dealers are known as secondary customers [Lal, R. et. al., 2005]. So every business organization has primary customers or secondary customers or both. The organization provides its products to its customers through the mechanism of a marketplace as mentioned above. The market place provides the bedrock of competition where similar products and substitutes rule the game. The revenue and profit come from the volume of these products picked by the customers. This makes the organization interested in retaining its existing customers and increasing the number of its customers by meeting their expectation [Customer satisfaction, 2007].

However in a competitive environment, with frequent new product introductions, merely meeting expectations may not be sufficient. Today's customers might switch to the competitors tomorrow; if the latter offer better value [Mittal and Sheth, 2001]. Organizations that challenge themselves to exceed rather than meet expectations, are more likely to pleasantly surprise their customers, cement their loyalties, and invest in developing new products, relationship and process, that enhance customer value.

The source of competitive advantage lies in involving the customer in the value creation processes [Prahalad and Ramaswamy, 2004]. "Value" refers to preferential judgment, while "Values" refer to decision criteria that shape this preference. Customers look for "Values" not only in utility, price, quality etc, but also in the entire purchase and post purchase process as an experience [Saxena 2006]. Value is the experience a customer has in consuming the product/service; companies need to focus on customers' experience with their products and services. Today new competition is built around experience,

rather than tangible product features or intangibles like services, alone [Pine II and Gilmore, 2004].

Value is defined as the ratio between what customers get and what (s)he gives i.e. the ratio of benefits to costs. The benefits include both functional and emotional aspects. The costs include monetary costs, and costs attributed to energy spent and psychic efforts to acquire the product/service [Kotler, 2003]. Customer value can be acknowledged through finding ways of getting inside the customer's perception of value [Vitale and Giglierano, 2002]. Customer value is the total goodness or utility the customers perceive in the purchase of products and services. Shapiro has found in his research, some parts of customer value as tangible and some parts are intangible. He identified five product and services portfolio as a source of customer value, which are as follows: (i) having a product or service capacity which competitors do not have; (ii) allowing the customers to acquire the product or service quickly and easily; (iii) having product and service features unique and valued by the customers; (iv) vendor's behavior that creates trust and confidence in the mind of customers; (v) offering the product or service, having similar perceived benefits compared to alternate (competitive as well as substitute) products or services, at a lower price. The vendor, by managing the above factors, can provide both real values to the customers as well as influence the perception of value by the customers [Shapiro, 1997].

In addition to the above, there is another important factor known as order cycle, which has been recognized in literature as central to the creation of customer value [Shapiro et. al., 2004].

The order cycle is comprised of more or less ten steps process that goes through from planning (including sales forecasting and capacity planning), to demand generation, pricing, order entry, prioritization, fulfillment, billing, returns and claims, and post sales service. When customers are in the process of making purchase decision, they look at, in addition to other factors i.e. the vendor's order cycle. The order cycle is important during

acquisition and post acquisition of product or service. Increasingly sophisticated and demanding customers tend to discriminate among suppliers based on the order cycle.

With this general background of various factors responsible for creating customer value, the researcher now proposes to provide an overview of the research, by indicating the rational of the factors that contribute to customer satisfaction, highlighting the specific terms of reference that will be addressed. Following this, a brief background on the context of industry chosen, and also the methodology shall be presented.

1.2. Overview of the research

The researcher briefly states how customers value the offerings and what make them satisfied and also the state the factors of customer satisfaction which have not been studied so far.

1.2.1. Customer value and customer satisfaction

The factors, contributing to customer value (discussed in previous section), are to be pitched ahead of the competitors' offerings for creating satisfied customers [Mittal and Sheth 2001]. Customer value comes from a customer's preferences, characterized by her/his experiences of interacting with the product or service as well as dealing with any of the available alternatives [Vitale and Giglierano 2002]. If perceived value of a product or service is less than price, customer will not buy. If the price is less than undifferentiated alternatives, customer will buy. Non-price differentiation provides the product or service protection from price competition; and offers customer value [Shapiro, 1997].

The essence of the customer value has been captured by the following equation:

$Vs - Ps > Va - Pa$

"Vs and Ps" are value and price of the product offered by the supplying company and "Va and Pa" are value and price of next best alternative to the buyer among competitive

products and substitutes. Simply put, the equation conveys that the 'customer's incentive to purchase a supplier's offering' must exceed 'the customer's incentive to pursue the next best alternative' [Anderson et. al., 1994]. Another example, based on the experience of the researcher is, when a material handling company chooses a particular type of pulley, brand name "INDEF". "INDEF" is perceived as fail proof pulley; it communicates more customer value than others.

Designing and delivering superior customer value, are the key aspects of customer satisfaction [Weinstein and Johnson, 1999]. Customer satisfaction is an important determinant of customer retention, positive word-of-mouth, growth, and profitability [Shapiro et. al., 2004].

A growing body of literature finds relationship between customer satisfaction and financial measures, share holder value, and market value of equity [Zeithaml, 2000; Anderson, et al., 2000; Fornell, et al., 2006]. Study has also been done on impact of customer satisfaction on share of wallet [Cooil, et al., 2007].

Though the study has been done with number of variables, as above, this has a relationship with customer satisfaction. It was observed that the literature on efficient order management cycle and relationship quality together contributing to customer satisfaction was left unattended. Further, literature on above variables in business-to-business marketing is also quite scarce. So an empirical understanding of these variables and finding their relationship with customer satisfaction, was therefore felt useful. An attempt has been made to fill this gap in business-to-business marketing in the Indian context.

1.2.2. Gaps in Literature

The researcher proposes to study the relationship between product quality, price fairness, transactional relationship quality, softer relationship quality, and order management cycle; and the customer satisfaction.

Shapiro [1997] has studied effect of product service portfolio and order cycle on customer satisfaction. Jones and Sasser [1985] found that listening to and focusing on customer leads to customer satisfaction. Hesket et. al. [1994] have done various studies and observed that satisfaction of employees, loyalty of employees, product value, and service contribute to customer satisfaction. Garver and Gagon [2002] found that customer focused culture; executive support; listening to customer; and developing positive attitude of employees contribute to customer satisfaction.

With this in mind, the context of the industries and companies chosen for analyzing the effect of above factors on customer satisfaction is described below.

1.3. Choice of industries and companies

In India, there was 9.6% increase in production in April-October 2005 comparing to last year same period. Manufacturing growth was spurred by chemicals & chemical products; basic metals & alloys; machinery and equipment; cotton textiles; textile products; and "other manufacturing industries" [*Monthly Review of Indian Economy,* January 2006]. Growth in manufacturing sector was 9% in 2004-2005 where as growth in chemical and products was 14.3%, engineering all types was 13.46%, and machinery & equipment was 19.5%. Growth in IT industry was 28.9% in 2004-2005 [*Statistical Outline of India,* 2005-2006].

Three industries have been chosen for the study, from relatively high growth industry in India. They are specialty chemical, engineering, and computer industries. Two companies were chosen in each industry; choice of companies has been done from the accessibility point of view. The researcher was associated with these companies either as a consultant or as a faculty of in-company management development programs. Each industry has got its own uniqueness and each company has got different structure, system and culture. Effect of variables on customer satisfaction study in each company is likely to be

different. The data from six companies representing these three industries is expected to help in generalization of the result.

1.4. Choice of methodology

There are various types of research. Non-empirical or theoretical research is related to some abstract idea(s) or theory. It is used by philosophers and thinkers to develop new concept, or do further work in reinterpreting the current concepts. On the other hand empirical or experimental research relies on experience or observation alone, often without due regard for system and theory. It is data based research, with the potential to come up with relevant conclusions. Such conclusions can subsequently be verified by further observations or experiments [Kothari, 2005].

Though non-empirical or theoretical research has been the cornerstone of further scientific enquiry, the empirically based research has been quite dominant in business and management studies. A case study is essentially empirically based. It can be used in a number of different ways that accommodate the complexity of buying behavior in business-to-business marketing [Yin,1993]. The case study approach to research is on the increase in most areas of business and management studies. It adds tremendous value to the body of knowledge by way of generating meaningful or hypothesized relationships. Case studies are a preferred research method when issues like ‘how’ or ‘why’ are being examined; when the researcher has little control over the events, and when the focus is on contemporary phenomenon within some real-life context [Remenyi et. al., 2000].

The case study method has been used in this research and it is the conviction of the researcher that it suits the best. However the findings from the case studies have been reinforced by surveys as well. The case studies on two companies were done in three phases. The first phase was exploratory study. In this phase the study sought insights into the general nature of the factors contributing to customer satisfaction. The highly flexible and unstructured method in this first phase, helped in identifying the interesting ideas and

clues about customer satisfaction and preparing the questionnaire and validating it by in-depth interview and focus group interview [Aaker et. al., 2001]. In the second phase of case study, the researcher has done a pilot study to test the reliability of the questionnaire and also to perform a test run on the methodology planned for further studies. In business and management studies, longitudinal research offers useful insights into practices and policies [Remenyi et. al., 2000]. Hence in the third phase of case study, the longitudinal survey has been conducted over three years in two companies representing different industries. In the fourth phase, findings of the preceding three phases have been collated and validated in the chosen six companies by a snapshot survey.

1.5. Organization of the Thesis

The thesis is organized as follows. Chapter II attempts an extensive review of the relevant literature. Chapter III identifies the research gaps, objectives of the study as well as generating the hypotheses, and establishing the operational meaning of the variables under study. Chapter IV depicts the research design. Chapter V states the research methodology adopted by the researcher while Chapter VI develops the measurement tools. Chapter VII captures the pilot study that was done. Data collection and analysis of longitudinal study and survey have been incorporated in Chapter VIII and IX. Interpretation of results has been described in chapter X. Last but not the least, Chapter XI presents the major findings, recommendations, limitations of study, specific contribution and future scope of work.

Chapter II

LITERATURE REVIEW

This chapter explores the relevant constructs and factors related to customer satisfaction in business-to-business marketing. This will culminate in the development of the conceptual framework for understanding and analyzing this research.

Business-to-business marketing as explained by Wright, “as a market where companies sell and market to other companies as input for further production or their own use for commercial purpose” [Wright, 2004]. Corey further elaborated, “Business-to-business marketing is marketing of goods and services by an enterprise to other enterprises viz. commercial, governmental, and not for profit organizations” [Corey, 1991].

In consumer marketing, goods and services are bought by the consumer personally or by their family members for their final consumption. Consumer goods and services are also bought by wholesaler and retailers in consumer goods distribution system but for commercial purpose, not for personal consumption [Corey, 1991].

The difference between business-to-business marketing and consumer marketing is that the end customers in business-to-business market are buying products and services for their companies, rather than for individual or private use. In business-to-business marketing, the company can then use the purchased product(s) (i) for their own usage when making product or service such as machines, (ii) for selling to other customers as an end product, or (iii) as parts/input for their own products or services [Morris et. al., 2001]. In business-to-business marketing, goods and services are usually purchased for value enhancement and subsequent offering to their customers. Where as in consumer markets, goods and services are bought for their final consumption, many products and

services go both to consumer and business-to-business customers e.g. window air conditioners, computers, automobiles, stationery, health service, hospitality service, banking service (Corey, 1991). Thus, the distinction between business-to-business and consumer marketing is drawn in terms of the intended customers, not in terms of products and services [Morris et. al., 2001].

In business to business markets, seller spends time building and marketing the personal and business relationship with several individuals throughout the buying center, Decision Making Unit (DMU) [Giglierano and Vitale, 2002].

In consumer markets, the DMU for purchase of any item is often an individual or a family whereas, in business-to-business markets, the DMU is usually much larger and complex. In business-to-business marketing, to understand the behavior of customers, it is useful, first, to consider the economic factors that shape purchasing practices, then to look at behavioral aspects [Corey, 1991]. Economic factors could be quantifiable and less quantifiable. Lowest price is a key consideration followed by supplier's reputation for product quality, dependability, service and potential for technical contribution. Other economic considerations are availability of supply and risk avoidance. Risk is in terms of end-product quality, manufacturing efficiency and supplier technical contributions.

In an enterprise, the purchase of an item may involve a host of departments, such as purchasing, engineering, finance, manufacturing etc. Often top management is also involved in very high value or critical item purchase. Depending upon the nature of the purchase, DMU may involve any number of individuals including top management. These individuals have personal objectives as well as corporate ones. Naturally their value system may differ.

Further, companies may wish to pursue single or multiple goals [Lilien, 1999]. Goals, ambitions, and performance measures, to which individual members of the DMU respond, are often different. The decision making process is greatly affected by such personal factors of individual members. So the personal needs of DMU members for

recognition and advancement, as well as their social needs to satisfy the user departments, become crucial motivating factors that influence the decision making process leading to creating a very complex and challenging context for marketer [Webster, 1968]. As a result, customer satisfaction assumes greater significance in the business-to-business marketing.

2.1. Why is it important to study customer satisfaction?

The economic benefits of high customer satisfaction (CS) are considerable in manufacturing as well as in services industries. Customer expectations are significantly and positively related to the performance. and that CS and loyalty will be high and complaints will be few as a result [Chih-Chung and Su-Chao, 2006]. However degree of this relationship may vary with prevailing cultures of respective country. Regardless of expectations, Japanese respondents reported lower satisfaction ratings when performance was high and higher satisfaction ratings when performance was low, compared to similar scores from their U.S. and Canadian counterparts. Thus, there is some evidence to show that Japanese consumers are more conservative in their evaluations of superior service, but are less critical (and more forgiving) of inferior service [Laroche, et al., 2004]. In addition to this inverse relationship, CS and repurchase intension faces nonlinearity and asymmetry as confirmed in several studies where repurchase intention follows repurchase behavior [Mittal and Kamakura, 2001]. Moderating effects are significantly different for repurchase intentions and objective purchase behavior [Seiders et al., 2005]. Relationship between CS and repurchase behavior depends upon the moderating effects of convenience, competitive intensity, customer involvement, and buyer's income. This explains the difference in profitability amongst the competitors. When a company consistently delivers superior value, it generates high CS and wins customer loyalty (CL). Outcome of CL is eventually a repeat purchase [Anderson et. al., 1994].

Consequently market share and revenue goes up and cost of acquiring and servicing customer goes down [Reichheld, 1993]. Compared to exclusive loyalty of the past, consumers increasingly hold polygamous loyalty to various companies; customers are increasingly dividing their purchase amongst various companies [Rust, et al., 2004]. A

study on banks, auto repair & maintenance shops, and (gasoline) filling stations, show that CS either fully or partially mediates the relationship between consumers' perceptions and their loyalty [Lien-Tiand Yu-Chungh, 2006]. Customer satisfaction can also affect customer loyalty by helping customers create trust [Kaili, et al., 2007]. This context will enable us to explore background rationale on the CS and CL; and help to establish the connection between CS and financial performance and equity of the company.

2.1.1. Customer Satisfaction

CS has assumed one of the critical success factors in modern management since last 15 years or so. Satisfying customer is not just a commonsensical approach; it has been found that customer satisfaction sets the lead to loyalty, which in turn leads to high growth and profit [Anderson et. al., 1994]. Changes in satisfaction are positively and nonlinearly related to share of wallet a customer allocates to a particular marketer over time; specially, the initial satisfaction level and conditional percentile of change in satisfaction significantly correspond to changes in share of wallet [Cooil, et al., 2007]. CS has become one of the important tools for managers and organizations. In fact many companies use this tool for formulating the strategy to achieve growth and profitability [Piercy, 1996].

Long term sustainability of an enterprise, as can be seen from the experience of major corporations across the globe, is linked directly to customer satisfaction. In the 1970's, when Xerox started losing market share worldwide to Japanese competitors in the copier industry, the company decided to offer greater incentive to customers, by implementing quality and customer satisfaction programs and hence could greatly increase market share by 1 to 1.5 percent every year from 1983 through 1989 [Quelch and Kosnik, 1992].

It was not an easy task for Japanese competitors to increase market share as Xerox was the pioneer and market leader at that time. In business-to-business marketing, switching costs are always high and hence loyalty to existing vendor is always high; so customers tolerate the shortcomings of existing vendors to a certain extent [Hutt and Speh, 2004].

Switching costs are investments of time and money that customers make to adapt to a new product, service or system; it also includes risk in exposure to the new seller in business-to-business market. A customer is satisfied with a vendor who can meet the customer's immediate need as well as future need and this is known as relationship marketing [Davila and Simons, 1999]. Through the quality and customer satisfaction programs, Xerox could implement relationship marketing, by offering greater value to customers than its competitors. With the increase of customer satisfaction by 35%, Xerox could increase the revenue from USD 520 Million to USD 1.04 Billion and net income from USD 20.3 Million to USD 40.6 Million [Quelch and Kosnik, 1992].

Increasingly, industries are finding the benefit of a customer satisfaction program. Citibank found that business customers were sophisticated buyers who demanded high service quality and knowledgeable employees who could satisfy customers' financial needs. With the increasing competition from Bank of America and Wells Fargo, Citibank focused on customer service as a key differentiator. In 1997, Frit Seegers, President of Citibank, California introduced a performance scorecard, including financial as well as non-financial measures. He considered customer satisfaction as a non-financial measure but critical to the long term success of his division. He saw CS as the leading indicator of future financial performance. In the California division of Citibank, an increase of customer satisfaction between 6 and 80 points meant that they could achieve outstanding financial performance at 20% over the budgeted level. This was in addition to a target that kept moving up over time [Davila and Simons, 1999].

In both the cases above, Xerox and Citibank, financial figures suggest that customer satisfaction programs have not only helped the organization to survive against competition, but also to grow in long term financial performance.

A growing body of literatures finds relationship between customer satisfaction and financial measures and operating results [Zeithaml, 2000]. Empirically, further study also finds a positive association between customer satisfaction and shareholder value.

However, they also find a significant variation in the association across industries and firms [Anderson, et al., 2000]. In very recent study, specifically, the authors find that CS, as measured by the American Customer Satisfaction Index (ACSI), is significantly related to market value of equity [Fornell, et al., 2006].

Further studies have been conducted by examining how current and past satisfaction performance affects net income (profit) and total assets because ROA is a ratio of net income to total assets. Results show that current CS performance is negatively related to both net income and total assets, while past satisfaction is positively related to net income, but bears no relationship to total assets. Though it is still mathematically possible that current satisfaction is positively related to ROA, but taken together, it is more probable that current satisfaction has a negative effect on profitability, while past satisfaction has a positive effect on profitability. That is, CS performance has a lagged effect on profitability [Chiquan, and Jiraporn, 2005]. Since CS performance has a lagged effect, continuous CS performance is very critical for any business organization. Both customers and customer satisfaction is important to senior management and shareholders as there is empirical support for positive relationship between customer satisfaction and long-term financial performance [Ambler, 2000].

Conversely, poor CS or lack of CS led to defection of customers. In the year 1996, The Forum Corporation analyzed customers lost by 14 major companies for reasons other than going out of business: 15 percent switched because they found a better product; another 15 percent found a cheaper product; and 70 percent left because of poor or little attention from the supplier [Kotler, 2003]. Tremendous financial losses were incurred when defection took place. Reichheld and Sasser observed that reducing five percent defection can produce a profit increase between 35 and 45 percent in industrial products and services including software [Reichheld and Sasser, 1990].

Moving beyond these financial parameters, it is also seen that knowledge of factors responsible for satisfaction as well as dissatisfaction is equally important. When minor dissatisfaction is experienced, customers neither complain nor spread negative word of

mouth (WOM). When dissatisfaction is serious enough, customers do complain. Most critical for the company is when dissatisfaction is moderate. If the complaints are encouraged, the company has a chance to remedy legitimate complaints and win back the customers and likely to have positive WOM to others. In this case customer is likely to repurchase even if the complaint is not settled to customer's satisfaction. If the complaints are discouraged, customers may not complain instead they would spread negative WOM and quietly defect. Some level of dissatisfaction is inevitable in the marketplace even after the best quality management**.** The way the company deals with it is important; customers need to know that the company is responsive to legitimate complaints. [Richins, M. L., 1983].

Xerox's data on CS measurement proved that high quality products and associated services designed to meet customer need create high levels of CS, leading to customer loyalty. Fredrick F. Reichhfield, a director of Bain and Company in his research observed that Customer loyalty is the single most important driver of long-term financial performance [Reichheld, 1993]. Since highly satisfied customers only can become loyal customer, we now review the literature on highly satisfied customers [Berman, 2005].

Customer loyalty is the feeling of attachment to, or affection for a company's people, products and services. These feelings lead to long term attachment of customers towards to the firm and strengthen their repeat purchase behavior from time to time. Therefore recency, frequency, and amount of purchase are significantly better measures of loyalty. Also customer referrals, endorsements, and spreading the positive word are extremely important forms customer loyalty in terms of behavior [Jones and Sasser, 1985].

Hesket et. al., 1994 made a study on several companies and have found that their most loyal customers are the top 20 percent of total customers in terms of revenue contribution. They not only provide all the profit but also cover losses incurred in dealing with less loyal customers. For example, Intuit's first product, Quicken® software, which was introduced in 1984, has become synonymous with personal finance. Over the past two-decades, more people have bought Quicken than all other personal finance software products combined. Quicken has grown to become much more than just a checkbook

register and is now an integrated family of products and services that continue to revolutionize the way people manage all aspects of both their personal and small business finances.

Intuit provides high-quality, free lifetime service for the personal finance software package that sells for as little as USD 30. The strategy makes sense when the value of a loyal customer is considered – a revenue stream of several thousands of dollars from software updates, supplies, and new customer referrals [Heskett et. al., 1994]. With this strategy in place, Intuit remains focused on helping consumers with money management. Founded in 1983, Intuit had annual revenue of more than $2 billion in its fiscal year 2005. The company has nearly 7,000 employees with major offices in 13 states across the US, and offices in Canada and the United Kingdom [Intuit, 2007]. So a highly satisfied customer i.e. loyal customer has become one of the leading differentiators for competitiveness.

Horst Schulz, President and COO of Ritz-Carlton Hotel Company, the 1992 winner of Malcom Baldrige National Quality Award, said that unless a company had 100 percent CS, he did not consider them satisfied; at the best they were excited. What he meant was that customers having less than 100 percent satisfaction were excited about what the company was doing and the companies need to improve. He also said that if a company had 100 percent CS, the company needed to make sure that they listen to what customers were saying so that in case the customers want change; the company could also change with them. A study has also been done on benefits of delighting the customers rather than merely satisfying them [Berman, 2005].

Furthermore, measures of highly satisfied customers explain levels of relative revenue growth and profitability, and relatively high level of CS engenders a competitive advantage, as obtained by a study done in the PC industry [Smith and Wright, 2004]

So being close to the customer itself is not enough; corporate institutions have to aim for 100 percent CS. CS is largely influenced by the perceived value of services provided to customers, which may in turn generate highly satisfied and loyal customers. Thus profit

and growth are primarily stimulated by high level of CS [Jackson 1985]. Loyal customers provide a source of steady future income since they will not think of changing the supplier too soon. [Grönroos, 2000; Rust, Zeithaml.,and Lemon, 2000]. So making customer intensely loyal is the key issue.

2.1.2. Determinants for customer satisfaction

While reviewing the literature, we observe that quality of product, price fairness, and service quality – all contribute to CS across the industries. Service quality includes order cycle, employee satisfaction and their attitude and behavior while interacting with customers.
This order cycle includes all stages from pre-sales to post sales service. CS in turn leads to repeat purchase and better financial performance, happy stakeholders and high stock price.

We now proceed to review various studies done on product quality and product price and their relationship with CS. Most of the literature has dealt with product quality and price together, along with a whole lot of other variables contributing to CS.

2.1.2.1. Relationship of product quality and price fairness with CS.

Customers' perceptions of product quality have the direct and positive impact on customer satisfaction [Kaili, et al., 2007]. The design quality of the product has been used as a competitive weapon for a long time. A study recognizes the relationship between design quality and the firm's return policy. The quality level in the product would influence the amount of return directly. When the product quality is higher, the CS rate will increase and the probability of return will decrease [Mukhopadhyay and Setaputra, 2007]. Similarly e-service quality dimensions exhibit a similar impact on CS across all sectors [Trabold et al., 2006].

Other findings also support a positive impact of quality on CS. Finally, in their work two new findings emerge: first, the market's expectations of the quality of a firm's product positively affect overall CS with the firm; and second, these expectations are largely rational, albeit with a small adaptive component [Anderson et al., 1994].

While it is imperative that one should provide a quality product in the market. If a lower percentage of faulty products reach the marketplace, level of CS is higher than when a higher volume of faulty products reaches the market place.[Freiesleben, 2004].

Perception of product quality and price fairness is interlinked in perception of value by the customers. Results of a study in the travel industry indicate that price has a substantial direct effect on consumer perceptions of quality and an inverse effect on consumer perceptions of value and willingness to buy [Ainscough, 2005]. There is a relationship between CS and the concept of value for price [Morganosky, 1988]. Different degrees of design quality offer different values. The key is to ask what value customers are most likely to assign to a product of a certain quality. The value they can derive from using the product then determines their willingness to pay a certain price for it [Freiesleben, 2004].

A study in the computer software industry reveals that to achieve competitive advantage based on higher CS at corresponding higher prices, it can argue for a certain level and type of investment in quality [Erdogmus et al., 2004]. Another study in PC industry reveals that 'product value attributes' directly and differentially impact levels of CS as well as prevailing average selling prices. [Smith and Wright, 2004]. Research data from the e-retailing industry reveals price perception, when measured on a comparative basis, has a direct and positive effect on overall CS and intention to return (loyalty), continuously generating favorable price perceptions among customers because both have a strong and positive influence on financial return [Jiang and Rosenbloom, 2005].

Customers' perceptions of price fairness and product quality, as well as customer satisfaction and trust, are all positively related to customer loyalty. Customer satisfaction can also affect customer loyalty by helping customers create trust [Kaili, et al., 2007].

The direct or indirect effects on CS of the perception of product and service quality, as well as of perceived price fairness, are related to the differing levels of intangible service associated with each of the three different service industries of banks, automobile, retail [Lien-Tiand Yu-Chungh, 2006].

In fact, a satisfied customer is willing to pay a high price for good quality. Many e-retailers might charge higher prices through providing good performance in service because of customers having favorable price perceptions. And these e-retailers may maintain the good image by continuously charging high prices [Pingjun 2003]. A company must produce a product that pleases customers and can be profitable at its anticipated selling price [Cooper and Slagmulder 1999].

The study is based on a dyadic data set collected from salespeople and their customers across multiple manufacturing and services industries in a business-to-business context. Results indicate the presence of an inverse relationship between CS and price sensitivity. Findings also indicate that the link under consideration is particularly strong in the case of high product/service specificity and product/service complexity [Stock, 2005].

The relationship between perception of product quality and price varies from industry to industry. Brand studies have shown that some industries have higher brand loyalty and are less price sensitive, while others are more price sensitive and indistinguishable. Thus, it is the basic economic principles of supply and demand that distinguish products [Le, 2005]. Even within the industry the price perceptions frequently differ across sectors which have been found in a study of e-service industry [Traboldet al., 2006].

A neural network model was developed to predict the overall level of CS derived from mobile phones in the UK. The model uses eleven input factors, the most important of which are experience of product quality, and price (level of service charges, level of call charges) [Goode, et al., 2005]. Another study in retailing industry indicates that when market price volatility is high CS, with lowest-price refunds tends to be significantly higher for stores with a good image than stores with a poor image. As market price

volatility increases, consumer perceptions of value increases for stores with a good image, while it declines for stores with a poor image [Estelami and Bergstein, 2006]. Hence building a good store image is essential for CS.

Contrary to common belief of managers that lowering price will give CS, there is a study which shows it is not the price, but the fair treatment and perceptions of price fairness that matters. The study was conducted in the context of automobile purchases in major German car dealerships. 246 car buyers were surveyed and their fairness perceptions and satisfaction judgments with the car buying process measured. The research shows that price perceptions directly influence CS as well as indirectly through perceptions of price fairness. It has also been found that being sensitive to the buyers' psychological state and assuring buyers of fair treatment will enhance perceptions of price fairness without actually changing the price offer [Herrmann, et al., 2007].

Business buyers are looking for cheaper sources of materials. If the buyers are getting very cheap toilet paper, which people do not like and which requires bigger or more frequent purchases, they might be doing the same thing with other commodities. Price may not be the main criteria but there are other parameters such as quality, consumption rate, replenishment, function, disposal and attractiveness which are criteria for CS. While most people use it, toilet paper is probably not a commodity of vast interest to people. It is one of those necessities which are taken for granted until something goes wrong. It may not have a great impact on the company budget either but can create employees dissatisfaction. It is more spectacular to reduce production costs by 2% than to sort out the right kind of toilet paper [Boyd, 2004]. Cheaper price always does not give economic benefits to buying companies.

2.1.2.2. Contribution of Relationship to Customer Satisfaction.

Companies have started to concentrate more on customer relationship, meaning there has been more attention on customer contact, instead of concentrating only on the product and price.

With the new environment in place even managing the quality has undergone changes. The aim of classical quality management was to analyze errors and eliminate their causes and associated variation by improved product and process design. In recent times a number of major changes have taken place resulting in increased volatility in key areas of a business, which 'old' quality management has difficulty in addressing. These changes are being driven by competitive pressure, the need for improved results from the financial market and increasing shrinkage of buying points. This has lead to pressure on prices, performance and innovation and the need for increased flexibility, agility and economics of scale, with a concentration on core competencies within the business. This situation demands a 'new' form of quality management. A study examines the main problems caused by these changes in terms of improved longer term relationships, softer influences on CS, growing importance of software, and closer cooperation between internal functions and externally between supply chain partners [Williams, R., et al., 2006].

Analysis of 495 car owners patronizing five automobile service and repair centers operated by Taiwan's three major car companies (Nissan, Toyota, and Mitsubishi), produced the empirical results that the level of employee-customer interaction is directly linked to CS [Kaili, et al., 2007].

Those thoughts have further developed into those companies continuously create and add value for their customers, to keep them loyal and satisfied. But the purpose of creating satisfied customers is no longer enough. The business also needs to get closer to the customers, to create relationships, where the customers see a value in the collaboration [Barnes, 2000]. It is like this - satisfaction is an outcome, not something you do in the business. And because of that, today's satisfied customers might switch to the competitors tomorrow, if they offer them better value [Mittal and Sheth 2001]. Customers are increasingly dividing their purchase amongst various companies [Rust, et al., 2004]. The length of relationship has moderating effects on changes in satisfaction and changes in share of wallet [Cooil, et al., 2007]. In fact overall satisfaction through commitment has a strong relationship with loyalty [Zulganef, 2006].

Despite the increasing, rhetoric about valuing customers, CS is a challenging task for managers. Recent study reveals, CS is actually declining in the U.S. U.S. companies manage to lose half their customers every five years. This could be attributed to higher customer expectations or increased choices for customers. Some suggest it could be due to the tight labor market, which has made it harder to find and retain the quality employees who can keep customers coming back to the company [Barnes and Powers, 2006].

Retaining quality employees is a challenge. Recently the relationship among job satisfaction, affective commitment, service-oriented organizational citizenship behaviors (OCBs), CS, and high CS were examined for a sample of 249 hairstylists and one of their corresponding customers. Employee satisfaction was positively related to service-oriented OCBs, customer satisfaction, and customer loyalty [Payne and Webber, 2006]. Another study reinforces the role of employees in relationship building. During the exploration phase of the relationship, buying objections are obvious sources of conflict between sales representatives and prospective customers. Success in managing rapport during such conflict means the sales representatives are able to move the relationship forward. Failure undermines the future relationship. The study has focused specifically on the critical role of sociolinguistic behaviors described by the theory of rapport management for allowing sales representatives to move beyond the exploration phase in relationships while overcoming customer objections [Campbell, 2006].

The way the company deals with the customer is important; customers need to be shown that the company is responsive. Relationship builds up from each and every contact of employees of the company with customers [Richins, M. L., 1983]. Training and development of contact employees is very important as it has been found that a team's average training proficiency had a positive association with customer satisfaction [Teck-Hua, et al., 2006].

A study was done to predict the overall level of CS derived from mobile phones in the UK. Level of satisfaction with the service provider has been as one of the most important

factors contributing to CS [Goode, et al., 2005]. In another study done across manufacturing and services industries in a business-to-business context, results reveal that the link between level of satisfaction and CS is systematically moderated by work satisfaction of the service provider (salesperson) [Homburg and Stock., 2005].

Rucci et. al. did a study on Sears in US and found two dimensions of employee satisfaction – attitude toward the job and attitude toward the company – had greater effect on employee loyalty and behavior toward customers, than all the other dimension put together like personal growth and development, empowered team etc. The employee-customer-profit chain model shows that a 5 point improvement in employee attitude will drive a 1.3 point improvement in CS, which in turn will drive a 0.5 percent improvement in revenue growth [Rucci et. al., 1998]. So behavior of employees of vendor firm and quality of transaction while interfacing with customers is important dimension for customer satisfaction.

Regardless of service providers being the occupational type, a courteous expression explained significantly more unique variance in CS than did personal connection socialites. Therefore, the communicative actions of service providers may influence customer perceptions of commitment and affect economic prosperity across service entities [Koermer, 2005].

It is not only true for traditional industries; it is true for e- industries also. The study found that the characteristics and behaviors of customer-contact employees play an important role in on-line service encounters. It is also revealed, a percentage decrease in satisfactory incidents, and a percentage increase in unsatisfactory incidents (involving employee characteristics and behaviors) results is similar outcome of CS in both brick-and-mortar and electronic environments. This suggests that customer-contact employees may play an important role with on-line customers also [Massad, 2006].

There have been some studies on the relationship between perceived service quality satisfaction and relationship intentions, or, in other words, whether or not consumers will

consider building long-term relationships with service providers on the basis of a single instance of perceived service quality. Based on three groups of samples from XYZ bank, one of the most famous banks providing merchant banking services in Taiwan, the findings suggest that financial products with different product attributes need different kinds and levels of service and relationship investment. The findings also suggest that there does exist a positive relationship between service quality satisfaction and perceived relationship investment [Chiung-Ju, 2006].

Besides the affective role of employees, it has been found that a cognitive role (which is the transactional part of the relationship) is effective over the period of time in continuous consumption experience. The results of one study show that together, cognitive and affective factors explain the variance in satisfaction judgments well. It shows that the strength of association between cognitive and affective increase over time. More importantly, they found that as the number of experiences increases over time, the influence of cognitive factors increases, whereas the influence of affective factors decreases. However, this effect attenuates with inconsistent consumption experiences [Homburg, et al., 2006].

In another study, the mechanistic approach has a stronger total impact although both the mechanistic and the organic approach significantly influence complaining customers' assessments. Moreover, the study provides evidence of a primarily complementary relationship between the two approaches. Another key facet of the study is related to the moderating influences of the type of business. The results show that the beneficial effects of the mechanistic approach are stronger in business-to-consumer settings than in business-to-business ones [Homburg and Fürst, 2005]. Management of order cycle is done more by a cognitive and mechanistic approach than an affective and organic approach.

2.1.2.3. Order Management Cycle versus Customer Satisfaction.

Order cycle in the company is mainly process driven. By genuinely understanding the customers' requirements and developing efficient and effective processes, the results are outstanding. Almost certainly, it will demand and create a change in culture especially in terms of the role and behavior of managers. The new ISO 9001:2000 calls not only for compliance but for improvement. The Sigma improvement approach fits very comfortably with order management cycle since it promotes the adoption of a process approach when developing, implementing and improving the effectiveness of a quality management system, to enhance CS by meeting customer requirements [Morgan and Brennig-Jones 2006]. The truth is that every customer's experience is determined by a company's OMC. An OMC comprises ten steps:

i) Order planning
ii) Order generation
iii) Cost estimation and pricing
iv) Order receipt and entry
v) Order selection and prioritization
vi) Scheduling
vii) Fulfillment
viii) Billing
ix) Returns and claims
x) Post sales service

Data from the e-tailing industry related to two specific periods of shopping experience (at checkout and after delivery) are used in the empirical tests. The findings of this study indicate that satisfaction obtained at the after-delivery phase has a much stronger influence on both overall CS and intention to return than satisfaction obtained at the checkout phase [Jiang and Rosenbloom, 2005].

A study was done to develop a grounded model of CS in Australian residential construction industry. It was found that generating CS consistently during the purchase decision process and therefore in pre-purchase expectations and purchase perceptions, contributes to loyalty as well [Forsythe, 2007].

While several e-service quality dimensions exhibit a similar impact across all sectors, several other dimensions exhibited sector-by-sector differences. The drivers that frequently differ across sectors include ease of returns and refunds experience [Traboldet al., 2006]

Research on CS, shows that OMC is a critical factor for CS. Lack of systematic OMC is likely to create problem that will lead customers to switching vendor despite the fact that the original vendor had a superior product portfolio. Increasingly sophisticated and demanding customers discriminate among suppliers based on OMC [Shapiro et. al., 2004]. Every customer wants on time delivery and hassle free billing process. Operating performance encompasses goals such as market share, customer penetration, new product development, service quality, and sales efficiency. If the product/service portfolio and OMC are both not managed well, desired operating and financial performance can not be achieved [Pine II, 2004]. The moment of truth occurs at every step of the OMC, and every employee in the company who are associated with the OMC contributes to moment of truth [Shapiro et. al., 2004]. In OMC, the attitude, behavior, and commitment of the employees interfacing with customers, also create long term relationship with the customers.

Access to and transparency in the ‘order cycle’, leads to CS. A growing number of hospitals are implementing new tools that will provide convenient and more detailed patient access to billing information. These tools are paying off for hospitals through reduced calls to their billing offices, decreased mailing costs, and increased payments, as well as higher rates of CS [Hammer, 2006]. A study was done on the significance of the Lean technique when applied to production industries, focusing on the benefits it delivers to customers. The Lean technique is providing seamless one-stop customer service while

eliminating the wastes of mass servicing achieved through the same lean techniques employed in the factory. It identifies the flow of value which eliminates waste in the process thereby bringing CS along with the product. Customer servicing demands are met when a simplified workflow is put in place. The issues and symptoms typically addressed by this type of lean solution include multiple systems for order-entry and inventory management [Ehrlich, 2006]. It has also been found that the online retailers may need to emphasize on transparency in providing company information more clearly at the time of contact, to convince the customers that the online store is trustworthy. It is also important to guarantee delivery of correct merchandise at the right time and place [Kijoo and Kim, 2006]. However a judicial and appropriate combination of employee-based services and technology-dependent service delivery, provide a deeper understanding of the customers' evaluation process and satisfaction [Kuang-Jung, 2005].

Various studies have been done on various phases of order cycle. Field studies in a shopping mall in Sweden found that managing merchandising and delivery of the order is one of the very important factors of CS [Anselmsson, 2006]. In the car industry, factors that contribute to CS in the delivery phase (after getting the order) are: time to delivery, modes of delivery, car conditions, operating instructions and post-sale services [Roscino, and Pollice, 2004].

A team was formed by taking personnel from the marketing and customer care divisions of a bank. Based on discussion with their clients, the authors listed quality of delivery, meeting delivery schedule, technical support, to be amongst eight factors contributing to CS [Das and Samanta, 2004].

It is equally true in the IT industry. The authors demonstrated that while customers make online purchases, product delivery (order cycle) and trusting relationships have the strongest influence on CS and future purchase intentions, over factors like 'interaction with the Web site', and 'how prepared retailers are to address problems', especially in an e-commerce environment [Collier and Bienstock, 2006] .

After studying relationship and order cycle as factors leading to CS, we now study other factors contributing to CS.

2.1.2.4. Relationship of various other factors with Customer Satisfaction.

In 1993, the business team of Universal Card Services, a wholly-owned financial services subsidiary of AT&T, wanted to identify the key processes that went into satisfying customers, every single day [Rosegrant, 1997]. They conducted customer satisfier and contactor surveys, as well as benchmarking studies. They found the following factors as the source of customer satisfaction:

i) Customer service as a primary satisfier;

ii) Professionalism, accessibility, efficient handling, and attitude as secondary satisfiers; and

iii) Availability and promptness (system availability, average speed of answer, answering quickly, not being put on hold) as tertiary satisfiers.

In 2002, Garver and Gagnon studied nine quality award-winning firms: Federal Express, Eastman Chemical, US West, Subaru, Sun Microsystems, AT&T WorldNet Services, Hewlett-Packard, and two other firms that wish to remain anonymous. They observed that the firms employ seven key activities and behavior that dramatically improved the use of customer value and satisfaction. Research was conducted to examine leading edge firms and find out how they applied their best practices [Garver and Gagnon, 2002]. Companies were obsessed to set out:

i) customer focus as a culture;
ii) provide executive level support,
iii) intensity, and persistence for such focus;
iv) build and use a set of customer listening tools to gain a complete understanding of their customers;
v) provide extensive CVS (customer value satisfaction) training;
vi) identify continuous improvement opportunities; link performance measures;

vii) and evaluate and rewarding CVS performance are well on their way to improved customer satisfaction

In another study, the levels of the dimensions of service quality and their relation to the level of CS was studied quantitatively only in insurance companies. Time based competition, quality, product range and service creates competitive advantage, but the decisive test comes in how these are used by the players to differentiate themselves. The service quality dimensions provided could be a basis for differentiation for the players [Gayathri, H. 2006].

Further study shows that the relationship between CS and service quality is significant at any level of abstraction of the latter indicating that each subdivision is appropriately conceived as an important aspect of service quality. However, a certain degree of the explanatory power of the dimensions of service quality is lost as the degree of abstraction increases. Likewise, each level of abstraction presents a unique picture as to how the dimensions and subdivision inter-relate among themselves in influencing CS [Chu-Mei, 2005].

Certain managerial interventions like CSR, TQM, and Six Sigma have been found to enhance CS.

CSR is being practiced by most of the leading corporations all over the world. A proper mix or combination of external CSR initiatives and internal corporate abilities (product quality and innovativeness capability) generates customer satisfaction, which in turn generates and sustains financial value for the firm [Luo and Bhattacharya, 2006].

In a study of a public service sector in Malaysia, the researcher found strong and positive associations between total quality management (TQM), overall service performance and CS; and suggests that an emphasis on quality will result in organizational gains. The findings suggest that employee focus is a very important factor in TQM implementations followed by training, customer focus, benchmarking and top management commitment.

The results also exhibit the unique contribution of TQM towards service performance and CS [Agus, 2004].

Six Sigma is one of the strategies and tools which leading organizations have started using to achieve accuracy and speed and at the same time reduce cost and increase CS and profits [Thawani, 2004].

However different customer segments have different switching costs or they vary in the precision with their satisfaction level [Hauser, et al., 1994]. In the previous sections, we have learnt from earlier researches that in business-to-business marketing, purchase organization i.e. DMU is complex; so it is a challenging task for the marketer. Primary customers are of two types, direct and intermediaries. The number of customer organizations for any company is always few; that is why satisfying each customer organization is critical for the growth, increased market share, return and stock price. Merely working for general satisfaction is not enough, customers have to be made loyal for repeat purchase and recommending others, to purchase; so industry should aim at 100% CS.

Chapter III

RESEARCH GAP, OBJECTIVE OF RESEARCH AND DEVELOPMENT OF HYPOTHESIS

Various studies have established that good product quality (PQ), with fewer faults, less wastage, almost no complaint has a direct positive relationship with CS. Studies have also been done on product price. Value price and price fairness is directly related to CS and financial return. High brand equity has high demand and generates CS even with high price. Researchers have also established that contrary to common belief of managers that lowering price generates CS; perception of price fairness (PF) can be high with high price also.

3.1. Research gap

There are several studies on the relationship of employee satisfaction, work satisfaction and CS, as well as the role of employees and CS. There are other studies on relationship of training and development of employees and CS. A good number of researches have also been done on the contribution of value in collaboration, creating relationship and length of relationship with customers to CS. Further research has been done on the effect of cognitive and affectionate role of employees with customers on CS.

There are studies on the ten steps of order management cycle (OMC) along with product portfolio and CS. Some studies have found a relationship among pre-purchase, during purchase and post purchase experiences on CS. Several researches have been done on the contribution of customer focused culture, customer value satisfaction, total quality management, six sigma, and commitment of top management, to CS. A recent research was done on the relationship between a combination of CSR and marketing capabilities, and CS.

However no specific study has been done on the combined contribution of PQ, PF, RQ and OMC together, of a vendor firm, towards CS especially in the business-to-business marketing context in India.

This study proposes to examine the impact of PQ, PF, RQ and OMC in building CS. Various researches have defined PQ, PF, RQ, OMC, and CS in their work, as mentioned in the literatures in previous sections. Since precise definitions are required for scientific study and the researcher proposes the following operational definitions for this.

3.1.1. Product Quality

Overall quality perception of product has a direct impact on CS [Kaili, et al., 2007]. In fact, product quality, product features and product performance are very crucial in promoting CS [Agus, 2001]. To ensure that product features can satisfy customer requirements, it is important to understand customer perceptions and expectations. Customer requirements always play a major part in driving product design [Daskin, 2004]. Innovative technology and design quality has an impact on CS across all sectors [Traboldet al., 2006].

Moreover, in variant product design, engineers improve a product in its redesign; the priority of each product feature needs to be determined based on customer ratings of the importance of the feature, as well as customer satisfaction of that feature on existing products and new products [Chen, et al., 2004]. The reliability driver of product performance emerged as the most important one for CS regardless of the functional association of respondents [Chakraborty et al., 2007]. In another study, the vendor's performance of product reliability and performance of line rejects along with other two factors has been found having impact on CS [Chen and Yang., 2002]. In fact a lower level of faulty product (input) in production line always gives higher level of CS [Freiesleben, 2004].

The key to greatly improving loyalty and the number of repeat purchasers is to get into purchasers' consideration set and then making sure that one has the best relative overall

quality among the products in that consideration set for the largest number of purchasers [Neal, 1999].

3.1.2. Price Fairness

The marketer, before fixing the price of any product, needs to ascertain the ability to pay and willingness to pay by the customers [Kotler, 1993]. In the previous section we have dealt with perceived product performance. Perceived customer value arises out of perceived product performance, and gets affected by perception of price of competition and substitute which determines maximum price a customer is willing to pay [Robert, 1992]. The difference between value and price equals the customer's incentive to purchase. The customer incentive to supplier's offering must exceed its incentive to purchase next best alternative [Anderson and James, 1998]. So Perception of product quality and price fairness is interlinked to perception of value by the customers [Ainscough, 2005]. If customers believe that price is unfair, the negative reaction can create customer dissatisfaction [Robert, 1995]. The price increase may not even be viewed as unfair to satisfied customers. A study reveals that as satisfaction increases, the negative impact of the magnitude of a price increase is weakened. Furthermore, the results suggest that satisfaction moderates the impact of perceived motive fairness. The study also finds that the level of satisfaction can influence the valence of the perceived motives in response to a price increase [Homburg, et al., 2005].

The price of a product or service is normally thought to be an indicator of its quality, for example, the higher the price, the better the product or service is believed to be [Salvador, et al., 2007]. It is not the lowering of price but the fair treatment and perceptions of price fairness that matters [Herrmann, et al., 2007]. In a study of online retailers it has been found that increased levels of price satisfaction due to low prices do not positively affect satisfaction with the fulfillment process. Therefore, competing on price may not be a viable long-term strategy [Yong,. et al., 2003].

3.1.3. Relationship Quality

CS is often influenced by the interactions customers have with the employees of a firm with whom they come in contact. Some researchers have termed the interaction with customers as a mechanistic and organic approach (Homburg et. al., 2005). The same authors, in another study have termed the factors as affective in place of organic (Homburg et. al., 2005). So, for our study, the experience will have two main relational components, viz., transactional quality of the relationship and softer quality of the relationship.

The behavior of the employees at the point of contact is one of the important factors in customer interface and managing and executing the order (Bitner et. al., 1994). For example, in business-to-business marketing, many products are tailor made; and even for standardized products, the packaging and lot sizes etc are tailor made. Similarly agreement of such specifications, packaging and lot sizes involves a lot of discussion and negotiation between the employees and the customers. Timely receipt of inventory at shop floor level is very critical for business customers. While taking orders, and during execution of the orders, the concerned employees use a lot of discretion while transacting with its indenters (i.e. customers). During these interfaces, transactional quality of relationship, as a component of RQ assumes critical importance. Prominent drivers of transactional quality are value, service quality, and costs. Transactional quality of the relationship depends on the existence of well laid out systems and procedure of OMC and the empowerment of the employees who are at the customer's interface [Schlesinger and Heskett, 1991].

The other component of RQ i.e. the softer quality of relationship depends upon the positive attitude of employees. Positive attitude is in turn driven by employee satisfaction. The satisfaction level of employees depends upon their attitude about the job and attitude about the company they are working for [Finkelman and Goland, 1990].

The softer quality of relationship is also derived from the culture of the organization. Organizations need to equip the employees with necessary tools, technology and the motivation so that they can serve their customers better. Organizations need to empower their employees who are interfacing with the customers. Sometimes even employees at the shop floor level can contribute to customer satisfaction [Sinkin and Stalk Jr., 1990].

The company that embraces customer satisfaction as a primary goal of business shifts the emphasis from the cost of pleasing a customer to the value of doing so, and it entrusts the front line employees with using their judgment [Hart et. al., 1990].

Hence transactional quality of the relationship and softer quality of the relationship of the employees normally interfacing customers, constitute the RQ [Finkelman and Goland, 1990]. Contribution of RQ on CS is being taken up for study in our research.

3.1.4. Order Management Cycle

The order management cycle (OMC) is comprised of ten steps that an order goes through from sales forecasting, capacity planning to demand generation, pricing, order entry, prioritization, and fulfillment, billing, returns and claims, and post sales service. Increasingly sophisticated and demanding customers discriminate among suppliers based on the OMC [Shapiro et al 2004]. Many steps of OMC are major determinants of customer value [Teas, 1993]. With the OMC, managers can be more purposeful and directed in searching for sources of competitive advantage. More information on customers confers greater ability and authority to serve the customers' needs. The cost of providing better customer service can be recouped by better customer retention and in the opportunity to identify internal efficiencies [Sviokla, 1996]. Effective handling of OMC can have a dramatic impact on customer retention rates, deflate the spread of damaging word of mouth, and improve the bottom line performance [Tax et. al., 1998]. The effect of all the steps of OMC on customer satisfaction has therefore been taken up in this study.

3.1.5. Customer Satisfaction

Customer Satisfaction is the feeling that the product or service has met or exceeded the customer's expectation. Keeping current customers satisfied is just as important as attracting new ones and a lot less expensive [Jones and Sasser, 1985]. Managers of business-to-business marketing companies have long differentiated between the two categories of recipients of products and services: "intermediaries" and "end users". Since buying process is complex in business-to-business marketing, it's not just one single purchase agent who is involved [Cronin and Tayler, 1992]. The DMU normally is a body comprising of members drawn from various functions of the buying firm. The DMU is responsible for buying and taking part in the buying process. Members of the DMU assume different roles throughout the procurement process: users, gatekeepers, influencers, deciders, and buyers [Hutt and Speh, 2004]. In business-to-business marketing, customer satisfaction means satisfaction of all these members. Customer satisfaction exerts a strong influence on the purchase intention. The company in order to succeed must understand and be involved in the whole gamut of the customer management system. Business marketers sell to large customers (end users) directly and serve small customers through industrial distributors/dealers (intermediaries). Distributors/dealers therefore are also part of the customer management system [Fornell, 1992]. An Arthur Anderson study in the 1990s predicted that the wholesaler distributor sales would grow in real terms at a rate faster than economy. A 1985 McGraw Hall Survey found that 24 percent of all Industrial Marketers sold their products directly to end users exclusively; the remaining 76 percent used some type of intermediary, of which Industrial Distributors were most prominent [Peltron et. al., 2001].

Satisfied customers, whether they are end users or intermediaries, are assets to the firm [Fornell 1992]. Various attributes in product/service and in their offering play an important role in creating satisfied customers. All kinds of attributes are important to consumers but their importance varies with the mediating factors e.g. customers tend to be price sensitive for less critical attributes and quality becomes a critical factor for credence services [Amyostrom and Lacobucci, 1995]. It is imperative to appreciate that overall satisfaction is based on the customer's overall experience, not just the individual product and service attributes.

It was intended through this research, to study the purchase behavior, repurchase behavior and post-purchase behavior of the customers for measuring customer satisfaction [Reichheld, 2003].

3.2. Objective of the research

Empirical research appears to confirm that PQ and PF contribute to perceived quality which has tremendous impact on CS across various industries. The role of RQ and OMC has not been studied deeply so far, to learn about their respective impact on CS especially in the business-to-business marketing arena. Also, the relationship between RQ & OMC and their combined effect on CS has not been studied. This study intends to address this gap, which significantly affects the CS.

The independent variables in this study are PQ, PF, RQ and OMC. CS is the dependent variable.

This study helps to establish the relationship between PQ and CS, PF and CS, RQ and CS, as well as OMC and CS. This study also addresses the relationship between PQ and PF as well as RQ and OMC and their combined effect on CS in business-to-business marketing. This is expected to help the business-to-business marketing companies to look into their RQ, OMC, and CS objective while formulating the strategy for higher growth and long term sustainability.

3.3. Hypothesis

Based on the above objective, we hypothesize the following:

H_{01}: There is a no relationship between 'product quality' and 'customer satisfaction'.
H_{a1}: There is a significant relationship between 'product quality' and 'customer satisfaction'.

H_{02}: There is no relationship between 'price fairness' and 'customer satisfaction'.
H_{a2}: There is a significant relationship between 'price fairness' and 'customer satisfaction'

Since we would like to study the relationship between 'product quality' and 'price fairness' as well as their combined effect on 'customer satisfaction', the two hypotheses branched out from hypothesis H_3 are posited as follows.

$H_{03.1}$: There is no relationship between 'product quality' and 'price fairness'
$H_{a3.1}$: There is a significant relationship between 'product quality' and 'price fairness'

$H_{03.2}$: There is no relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.
$H_{a3.2}$: There is a significant relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.

While relationship quality normally impacts in each and every interface with the customer, we have further categorized this relationship quality under transactional aspects and softer aspects. First, let's state the two hypotheses that branch out from H_4 and then state the main hypothesis, H_4:

$H_{04.1}$: There is no relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.
$H_{a4.1}$: There is a significant relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

$H_{04.2}$: There is no relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.
$H_{a4.2}$: There is a significant relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.

H_{04}: There is no relationship between' relationship quality' and 'customer satisfaction'.
H_{a4}: There is a significant relationship between 'relationship quality' and 'customer satisfaction'.

We would also like to study the relationship between the order management cycle and customer satisfaction by stating hypothesis H_5 as follows:

H_{05}: There is no relationship between 'order management cycle' and 'customer satisfaction'.
H_{a5}: There is a significant relationship between 'order management cycle' and 'customer satisfaction'.

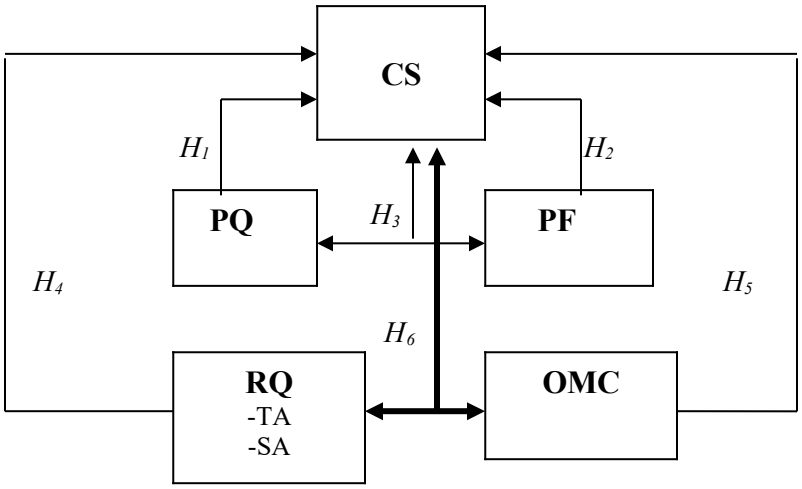
As we like to study the relationship between 'relationship quality' and 'order management cycle' as well as their combined effect on 'customer satisfaction', the two hypotheses branched out from H_6 are posited as follows.

$H_{06.1}$: There is no relationship between 'relationship quality' and 'order management cycle'
$H_{a6.1}$: There is a significant relationship between 'relationship quality' and 'order management

$H_{06.2}$: There is no relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'

$H_{a6.2}$: There is a significant relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'.

Fig 3.1 Framework and Hypotheses



Chapter IV

RESEARCH DESIGN

Having studied the literature and formulated the hypothesis and research framework, a detailed description of research design is given in this chapter. This study is based on case study method backed by periodic survey of longitudinal studies of both RQ and OMC on CS in a few leading firms operating in India. The findings of these longitudinal studies have been further validated by means of a survey in six companies.

Research design refers to a procedural framework or a blueprint within which the research is conducted. It specifies the details of procedures necessary for obtaining the information to structure and/or solve the research to a problem. It is an operational framework within which the facts are placed so that their meaning may be seen more clearly (Remenyi et.al., 2000).

There are two approaches to research; non-empirical or theoretical, and empirical or experimental.

Non-empirical or theoretical research normally used by philosophers and thinkers. They study the subject through the writings of others; reflect on their ideas and using their intellectual capabilities, they construct a new concept or reinterpret the existing one. This

view is regarded as a new theory and the researcher aims to add this to the existing body of knowledge (Kothari, 2004).

On the other hand empirical or experimental researches rely on experience or observations alone, often with scant regard for systems and theory. By studying these observations and collecting evidence, the empiricist draws conclusions and makes the claim that something of value has been added to the body of the knowledge [Aaker et al 2001].

Business research is a systematic inquiry whose objective is to provide information to solve managerial problems. Non-empirical or theoretical research is relevant but empirically based research is dominant in business and management studies [Cooper and Schindler 2003]. This study of ours is empirical in nature.

Besides non-empirical or theoretical, and empirical or experimental classifications, there are many other different ways of describing the research approaches and methods. But within each of those approaches and methods, there are techniques of collecting evidence and analysis which are also known as research tactics.

The case study has been done on two companies. Within this case study we have conducted in-depth interviews, focus groups, pilot studies, and longitudinal studies. The results of the longitudinal case studies are in two strata, i.e. on two companies. These were subsequently complemented with a survey in the total target population. A brief review of the research tactics used in our study is given below.

4.1. Case study method

The case study is empirically based. The case study methodology is a way of establishing valid and reliable evidence for research purposes as well as presenting findings which result from research. Just like a case study is a research tactic for the social scientist, experiments are deemed to be the prime research strategy for the natural scientist [Smith,

1990]. In other words, the use of different methods such as depth interview, questionnaires, documents, and study report of individuals, letters and the like is possible under case study method [Kothari, 2005].

Many researchers have also stated the limitation of case studies. Case studies place more emphasis on full contextual analysis on a fewer set of events or conditions and their interrelations. Even if the case studies have been maligned as "scientifically worthless" because they do not meet minimal design requirements for comparison, a single case study can provide a major challenge to a theory and provide a source of new hypothesis and constructs simultaneously [Cooper and Schindler, 2003].

Case studies that are similar in content are generally available and provide a fruitful area of investigation for exploratory study. However the results of investigation of case studies in more than one company suggest the variables are relevant, and give indications of the nature of relationship of the variables [Green et. al., 2000].

A case study offers to generate a set of proposed and testable hypotheses. Some researchers feel it is best used as an exploratory tool. Yet many well known case study researchers such as Robert E. Stake, Helen Simons, and Robert K. Yin use the case study method and the suggested techniques for organizing and conducting the research successfully [Soy, 2006].

As a general rule, questionnaires alone are increasingly regarded as inadequate in providing the type of evidence required for research in business and management studies; this creates the ground for using case studies more. Of course one case study, like a single experiment, cannot provide sufficient evidence to be able to make robust generalization. However, this may not be essential in business studies [Sekaran, 1992]. A comparison of cases can lead to the formulation of a theoretical conjecture, or in some circumstances the confirmation of hypothesis or empirical generalization [Yin, 1993].

Keeping all this in view, the researcher has performed case studies in two companies. Exploratory studies, pre-testing, pilot studies and longitudinal studies have been done in both those two companies.

4.2. In-depth interview

This type of interview generally attempts to obtain detailed in-depth evidence from relatively small number of informants through series of interviews [Remenyi et. al., 2000]. In-depth interviewing is usually more conversational than structured [Cooper and Schindler, 2003]. An in-depth interview is an unstructured direct personal interview in which a single respondent is probed by a highly skilled interviewer to uncover, underlying motivations, beliefs, attitudes, and feelings on a topic [Malhotra, 2001].

For this study the researcher has personally conducted a series of interviews with the managers responsible for sales and interface with the customers, and also with a few important existing customers as well as with lost customers, to find out the various factors responsible for customer satisfaction.

4.3. Focus group

Since this research has used the focus group approach, this needs brief elaboration. Focus group is a research approach for collecting evidence from highly specialized group of individuals. Focus groups are frequently used as one of several different evidence collection techniques within a single project for business and management research [Beri, 2003]. A focus group is used in an exchange of ideas, feelings, and experience on specific topics [Cooper and Schindler, 2003].

The use of focus groups at the outset of the research to support the literature review in the formulation of a research question is an accepted practice [Green et. al., 2000].

In developing the questionnaire, the researcher has used focus groups of managers of two companies as well as selected customers of the both companies to arrive at the final design.

4.4. Pilot study

In social science research, it is advisable to take part in some field observations and as such the researcher has undertaken some sort of preliminary survey or what is often called pilot survey [Kothari, 2005]. A distinction should be made between pre-test and pilot survey. Pre-testing is an activity related to detecting weakness and the development of the questionnaire or measurement instrument to be used in survey. In contrast, a pilot survey is a small-scale test of what the survey is supposed to be, including all the activities that will go into the final survey [Green et. al., 2000]. The size of the pilot group may range from 25 to 100 subjects, depending on the method to be tested, but respondents do not have to be statistically selected. In very small populations or special applications, pilot testing runs the risk of exhausting the supply of respondents and sensitizing them to the purpose of the study [Cooper and Schindler, 2003]. Since the size of the target population is less, the researcher has done a pilot study to test run the methods planned for the surveys in 25 and 24 buying organizations respectively in each of the two companies being studied.

4.5. Longitudinal verses Cross-sectional

Both longitudinal and cross sectional studies have been used in management literature. However the former is not as prolific as the later. Cross sectional research refers to the studies which take a snap shot of the situation in a particular time. This makes it easy to administer and generate a quick outcome. However longitudinal study is conducted over a period of several years leading to findings over diverse context (Remenyi et. al., 2000).

Though both the longitudinal and cross-sectional approaches can be carried out within an empirical research program, in business and management studies, longitudinal research

usually offers the best opportunity to obtain useful insights into practices and policies and thus this approach is more valuable at the PhD level [Sekaran, 1992].

Since longitudinal study is time consuming and costly, it is not very common in business and management research; but to make our study different from others, we have done a longitudinal study in the two companies of different industries for generalization.

Further, to reinforce our study we have done cross sectional observations (survey) in six companies, two each in three industries.

4. 6. Survey method

In the survey method, respondents are asked a variety of structured questions to obtain information. A questionnaire is simple to administer; the use of fixed response questions reduces the variability in the results; coding, analysis, and interpretation of data are relatively simple. In spite of the disadvantages of respondents being unable or unwilling to provide desired information, the survey approach is by far the most common method primary data collection in business and management studies [Green et al 2000].

4.7. Field Research

The field research has four distinct phases: In the case studies of the two companies we have covered phases I, II, and III.

Phase I: The exploratory study and a pretest of the questionnaire were done by focus groups and in-depth interviews to check the validity.

Phase II: A pilot study was done using the tested questionnaire. The reliability of items in the scale was tested. This study also helped as a test run of the methodology that was subsequently adopted for main study (phase III and phase IV).

Phase III: Longitudinal study was done in those two companies over the three years.

Phase IV: Findings of the above longitudinal study have been further reinforced, in the six companies, by doing a survey.

The following aspects were planned for the field procedures in the above longitudinal (Phase III) and survey phase (Phase IV) of our study.

- Who should be interviewed?
- How should the right people be accessed?
- Ensure that resources are available.
- Obtain assistance for evidence collection.
- Create a schedule for evidence collection.
- Provide for contingencies.

4.8. Research Instrument

Since a particular protocol needs to be designed for evidence collection for each case, we ensured the following in the longitudinal study of two companies:

- Existence of corporate strategy/vision.
- Top management understands the need of customer satisfaction.
- Customer satisfaction program is matched to corporate strategy.
- Need of periodic customer satisfaction survey.
- Customer satisfaction program is coordinated with other interfacing functions.

The researcher has collected inter-office memos, balance sheets and survey interview documents as data for study. Survey interviews in both longitudinal and cross sectional study were done with structured questionnaires. The development of the questionnaires has been explained in the next chapter.

4. 9. Sample Design

4.9.1. Target Population

Our objective is to study the impact of RQ and OMC on CS in the business-to-business marketing arena. DMU is the customer in business-to-business marketing. In a commodity type of product buying, the role of DMU is relatively simple, whereas in a specialty type of product buying, the role of DMU is complex. Our target population are those organizations who buy specialty type of products only [Corey, 1991]. The two companies were chosen accordingly in each of the three industries.

4.9.2. Sample frame

The sample frame was primary customers for the study. Primary customers are two types i.e. direct consumers and intermediaries. When doing a data collection the target group must be decided together with the sample size of the population [Christensen et al., 2001]).

4.9.3. Size

The business-to-business marketing research employs the same research techniques as a marketing research for consumer markets. The difference is that many business-to-business markets are characterized by a smaller sample because business-to-business customers often measure in hundreds or thousands instead of millions of customers in consumer markets. Business-to-business market samples are also often companies in different industries which vary in number [Hague, 2004]. Since it is practically impossible to perform the study in all industries, we took a finite population [Kothari, 2005] for our study.

Sample size is influenced by the average size of samples in similar studies. Problem solving researches like those intended at increasing customer satisfaction should have a

minimum sample size of 200 and typical range of 300-500. These sample sizes have been determined based on experience and can serve as rough guidelines, particularly when non-probability sampling techniques are used [Malhotra, 2001].

Samples involving institutions tend to be smaller than those involving people or household. A summary of several hundred studies provides a very rough idea of typical sample size. Authors suggested a minimum sample of 200-500 at the national level and a sample of 50-200 at the regional level [Aaker et al 2001].

The researcher has planned for a sample error of $\pm$ 2.5 percent. At a 95% confidence level, the sample size should be 500 [Ref. Sample size calculator in page number 376, Malhotra, 2001]; we have taken a sample size of 546 out of population of 1632.

4.9.4. Sampling Techniques

The researcher has used non-probability sampling techniques like judgmental sampling, in selecting industries and companies for our study. Judgmental sampling is a form of sampling in which the population elements are selected based on the judgment of the researcher. In the context of B2B marketing which was our population for the study, we have chosen three large manufacturing industries which had detailed order management cycles, yet did not have a significant positive impact on their customers. This provided a sound basis for the study. These three industries viz. chemical, engineering and computer industries therefore made up our target groups of population. Two of them are what can be termed as large and traditional and the other (computer) is a fast growing industry and hence we believe that they are representative of population of interest [Green et al 2000]. We selected two companies from each of these industries so that we can compare the results in each industry and then generalize our findings.

To collect the data from these target groups, the researcher selected a frame of reference based on probability sampling technique of stratified sampling. These strata consisted of two companies from each industry. Data from these companies was collected using the

standard practice of random sampling. The potential for gain from the associated research is highest if the customers in key markets were studied [Evans, 2002]. In the computer industry, two large laptop manufacturers were sampled. Amongst their list of large institutional buyers, the researcher selected two of them, both business schools. Both these schools offer two-year MBA level programs and each student is given a laptop. By and large 40% to 60% students use one of the brands; but all of them are knowledgeable about functioning and service level of both brands, even if they are being allotted a laptop with a particular brand. The researcher chose the 2nd year students as the target population as they are perceived to have more knowledge and experience about functioning of laptops and services than 1st year students [Cooper and Schindler, 2003].

The researcher has randomly selected a sample size of 16% to 66% of the population depending upon the size of the population in each strata [Green et al 2000]. The response was received from 457 primary customers and four samples were rejected due to incomplete response. Thus valid response was received from 409 primary customers of those six companies in the year 2005.

This longitudinal study was carried out during the years 2002 to 2004 in two companies each belonging to different industries using the case study method. [Sekaran, 1992]. The sample size was 50 in one company and 30 in another company. They were studied over three years.

4.10. Database

Comparative researches through case studies of six companies in three different industries have been carried out for generalization of findings. Three industries were selected based on their size, growth and economic contribution to the nation. The researcher was also expecting them to differ on basic organization structure, business practices and culture. They would have thereby shown varying responses to OMC and RQ. The dynamics of such responses have been captured to better understand what kind

of CS related issues became more salient along the ten steps of OMC and how best they are addressed.

4.11. Scope of the research

The researcher has adopted the iterative approach as customer satisfaction has to be continuously measured, monitored and evaluated. Through this two-stage iterative research, a concept of customer satisfaction has been developed that includes tangible as well as intangible dimensions of customer satisfaction. Following this, a management system would be proposed that would enable companies to assess the individual contribution of effective RQ and operational efficiency in OMC as well as a combined contribution of RQ and OMC towards managing CS. By focusing on RQ and operational efficiency in OMC through different lenses (retrospective case studies, longitudinal research and a validation through survey), this research is expected to offer insights into a model of customer satisfaction where the importance of RQ and operational efficiency in OMC may be reinforced.

Having discussed various methods adopted in our study, the researcher now states the research methodology adopted in the study in next chapter.

Chapter V

RESEARCH METHODOLOGY

Research Methodology is a way to formulate and solve the research problem systematically. It will be helpful to know the scientific methods through which we have conducted our research. This chapter on the research methodology not only describes the research methods but also the logic behind the methods we have used in the context of our study. The researcher now states why a particular method or technique has been used and why others have not been used, so that the results are capable of being evaluated by the researcher as well as any one [Kothari 2007].

In this chapter, the researcher has covered methodological issues of testing the validity and reliability of questionnaires, on data collection, on the statistical techniques used for establishing the relationship between variables, and the conclusions therein. All the variables have been coded as follows and the data entered in SPSS:

Product Quality (PQ), Price Fairness (PF), Relationship Quality (RQ), two components of RQ i.e. Relationship Quality Transactional Aspects (RQTA) and Relationship Quality Softer Aspects (RQSA); and then Order Management Cycle (OMC)

5.1. Test of validity, scalability, and reliability of questionnaire

The researcher has already stated the logic of sampling design with respect to sample size and sampling techniques in the previous chapter.

The test of validity has been done by studying secondary literature, depth interviews and the focus group method.

Since the researcher has measured the attitude of the respondents to indicate agreement or disagreement with several statements, multi-item scales have been found most suitable. The Likert scale is relatively easy to construct, and less time consuming compared to other multi-item scales. It is respondent-centric and frequently used by researchers in any opinion study [Cooper and Schindler, 2003]. So the researcher opted for the Likert scale in this study.

After developing the scale and collecting pilot data, we have checked the reliability of the scale. Reliability refers to the extent to which a scale produces consistent results if measurements are made repeatedly using different items (or variables). We have measured mean and standard deviation of each item of the scale. Mean tells us the point about which items have a tendency to cluster. Though mean is better than other similar measures, it may not coincide with actual value of an item in the series. This makes it necessary for us to measure the dispersion from the mean by calculating the standard deviation of each item in the scale.

The basic methods for establishing reliability can be classified according to whether they measure stability of results over time and the internal consistency of items in a scale. In case of measuring stability of results over time, a very short interval will bias the reliability upward, whereas longer periods will have the opposite effect [Aaker et al., 2001].

We have chosen the approach of internal consistency for comparing every item to every other item. Simplest measure of internal consistency is Cronbach's alpha. The

Cronbach's alpha or coefficient alpha is the average of all possible split-half coefficients resulting from different ways of splitting the scale items [Malhotra 2001].

The data collected for the survey is now being put through a detailed analysis, the results of which appear in the following sections.

5.2. Testing the hypothesis

We have done a detailed analysis of data to test the null hypothesis under study. Use of statistical tools and logic of using so, have been stated below:

5.2.1. Mean and standard deviation

Frequency distribution is a convenient way of looking at different values of a variable. The most commonly used statistics associated with frequencies are measures of location and measure of variability. We have used 'mean' as a measure of location. Mean or average value, is most commonly used measure of central tendency. Since we have used an interval scale, the data should display some central tendency, with most of the responses distributed around the mean. Standard deviation has been used as a measure of variability on our interval data. The differences between the mean and an observed mean are called the deviation from the mean. The variance is the mean squared deviation from the mean. The standard deviation is the square root of the variance. We have determined how much the responses vary from the mean of the entire target population. However population mean is unknown; therefore the sample mean is used instead [Aaker et al., 2001].

5.2.2. Bivariate regression

Bivariate correlation is product moment correlation, 'r' and referred to as simple correlation, or merely correlation coefficient. It is originally proposed by Karl Pearson; hence it is also known as Pearson correlation coefficient. This is mostly used statistically summarizing the strength of association between two metric (interval) variables, say CS (Y) and PQ (X). It indicates the degree to which the variation in one variable, X is related to the variation in another variable, Y [Malhotra 2001]. The value of 'r' lies between ± 1. A zero value of 'r' indicates that there is no association between the two variables. When r = (+) 1, it indicates perfect positive correlation and when it is (–) 1, it indicates perfect negative correlation, meaning thereby, that variations in independent variable (X) explains 100% of variations in the dependent variable (Y). The value of 'r' nearer to +1 or –1 indicates a high degree of correlation between the two variables [Kothari, 2007]. We have used bivariate correlation (r) to measure the relationship between the variables using the formula:

$$r = \frac{Cov\,(XY)}{\sigma_X \ \sigma_Y} = \frac{\sum XY - (1/n)\{\sum X \ \sum Y\}}{\{\sum X^2 - (1/n)(\sum X)^2\}^{1/2} \ \{\sum Y^2 - (1/n)(\sum Y)^2\}^{1/2}}$$

5.2.3. Multiple Regressions

Since our study involves a single dependent variable and a number of independent variables, we have used multiple regression [Malhotra 2001]. We can measure the bivariate correlation coefficient between the dependent variable and one independent variable (r) to asses the nature (or direction) of relationship. Subsequently, we can measure the multiple correlation coefficient (R) between actual Y and expected Y to assess the nature of linear relationship so obtained after we add more independent variables to our prediction model.

The strength of the relationship stipulated by the regression equation can be determined by using appropriate measure of association. The strength of association is measured by R^2, which is also called coefficient of multiple determination.

$$SS_{reg}$$

$$R^2 = \frac{\text{---------}}{SS_y}$$

R^2 cannot be less than the highest bivariate, r^2, of any individual independent variable with dependent variable. If the independent variables are statistically independent, then R^2 will be the sum of bivariate r^2 of each independent variable with dependent variable. R^2 cannot decrease as more independent variables are added to the regression equation. Yet, diminishing return sets in so that after the first few variables, the additional independent variables do not make much of a contribution. For this reason R^2 is adjusted for the number of independent variables and sample size by using the following formula:

$$\text{adjusted } R^2 = R^2 - \frac{\kappa(1 - R^2)}{\eta - \kappa - 1}$$

If adjusted R^2 is close to R^2 and both are higher than r^2 for the bivariate case, then it suggests that the addition of the second independent variable or second group of variables makes a contribution in explaining the variation in the dependent variable [Malhotra 2001].

The significance of testing involves testing the significance of the overall regression equation as well as specific partial regression coefficients. The null hypothesis for overall test is that the coefficient of the multiple determination in the population, $R^2_{pop,}$ is zero.

H_0: $R^2_{pop} = 0$
H_a: $R^2_{pop} \neq 0$

This is equivalent to the following null hypothesis:

H_0: $\beta_1 = \beta_2 = \beta_3 =$ --------- $= \beta_\kappa = 0$
H_0: not all β's are equal to zero

The overall test has been conducted by using an F-statistic:

$$F = \frac{R^2/\kappa}{(1-R^2)(\eta-\kappa-1)}$$

With κ and $\eta - \kappa - 1$ degrees of freedom, where κ = number of independent variables and η = sample size. If the calculated F as above is greater than the listed F at 01% and 05% level of significance using two tailed test, the null hypothesis is rejected.

In the longitudinal study, we have collected the data for three successive years viz. 2002, 2003 and 2004 for two companies namely Crop Protection Division of Specialty Chemical Company (Crop) Protection and Diesel Engine Manufacturing Company (DiesEng). This longitudinal data was analyzed to ascertain the effect of PQ, PF, RQ and OMC on CS, to study if there is any change over the previous period. For studying the longitudinal data we have measured the central tendency by using the method of mean.

Having stated the methodology, we now proceed to next chapter where we recorded phase I of our study for developing a measurement tool, i.e. questionnaire. We have also stated the portion of the pilot study where we have conducted the reliability test of the questionnaire.

Chapter VI

DEVELOPING MEASUREMENT TOOLS

We intend to study the concept of customer satisfaction (dependent variables) in business to business marketing. We have identified the dimensions of the concepts (independent variables). Now we need to find out the empirical correlation of individual dimensions with the total concept [Kothari, 2005]. So we have developed specific questions, and scales by which respondent's knowledge, opinion, attitude, expectation, etc., are

measured for each of the variables. Then we tested the questionnaire for validity and developed the scale. The reliability of the questionnaire was then tested in pilot study, appearing later in this chapter.

CASE STUDY- PHASE I

6.1. Development of questionnaire

Being consultant, the researcher had the access to the customer satisfaction survey of two business-to-business companies conducted by the professional market research companies.

In two companies, Crop Protection Division of Specialty Chemical Company (Crop) Protection and Diesel Engine Manufacturing Company (DiesEng), the researcher observed customer dissatisfaction in product quality and performance and after sales service was low. But customer dissatisfaction was higher due to RQ of managers and employees associated in order management cycle (Table 6.1.).

Table 6.1.Results of Survey on Relationship Quality

Relationship quality	**Dissatisfied Customer percentage**	
	Crop	**DiesEng**
Reliability in promise	8	10.7
Providing prompt service	20	10.7
Skill and knowledge	12	3.6
Respect and consideration	4	0
Communication	8	3.6
Ease of contact	4	7.1

Further investigation in the report revealed that dissatisfaction takes place mostly in following stages of Order management cycle: Prioritization and scheduling; fulfillment; billing; returns, claims, and issuance of credit notes.

With the help of the above case studies and the case study of Xerox Corporation [Menezes and Serbin, 1993], the researcher developed the preliminary questionnaire, attached as "Appendix A".

The questionnaire was developed for personal interview method. Several questions have been set to get the information in an unambiguous manner. To overcome inability and unwillingness to answer, the informed respondents i.e. primary customers have been kept in mind while designing the questionnaire. The focus has been structured questions but at the end one open ended question to get rich insight of customers' view, have also been provided. The questionnaire has been checked for use of words and divided into several parts for obtaining comprehensive information for each of the variables [Malhotra, 2001]. This preliminary questionnaire was then tested for validity, reliability and scaling.

6. 2. Test of validity of questionnaire

Perfect validity requires there be no measurement error. We conducted in-depth interview and focus group interview with five managers each, 10 customers (including two defected customers) each in the above two companies. The information generated by the questionnaire matched the information sought by the researcher as per research objective [Majumdar, 2000].

The researcher conducted content, and criterion validity of the questionnaire. The content validity was conducted with above respondents as representative sample and panel of persons to judge how well the questionnaire meets the standards. The content validity was good but primarily judgmental and intuitive [Cooper and Schindler, 2003].

The researcher have treated 'Q4: over all product quality perception' as short version and 'Q5 to Q9 various aspects of product quality as original instrument. The mean of Q4 was 4.96 and mean of other questions were within the range of 4.48 and 4.88. This test validated the criterion validity [Malhotra 2001].

The researcher did not opt for testing construct validity as it is most sophisticated and difficult type of validity to establish [Malhotra, 2001]. A more significant reason is lack of well-established measures that can be used in a variety of circumstances. Instead, marketing researchers tend to develop measures for each specific problem or survey and rely on face validity that is content validity which we have done [Aaker et al 2001].

Following the feedback of the depth interview and focus group, the preliminary questionnaire was modified as follows. Customer support and three questions there in were dropped as they have been found not to be very relevant for the variables under study. Instead of "price", "price fairness" to be used as "price fairness" perception will be more appropriate to get desired response. Though product and price are interrelated, for better clarity questions for 'product quality' and 'price fairness' have been separated and two relevant questions have been added in these two items. Finally 46 closed ended questions and one open ended question have been kept in the final questionnaire and it has been further put to test of reliability in pilot study.

6.3. Development of scale

The study also had to rely on survey results. Each questionnaire was prepared on five-point Likert scale (very satisfied/definitely yes, being 5 scale – very dissatisfied/definitely no, being 1 scale) to measure independent and dependent variables. We can measure whether respondents are more or less favorable to the particular question but can not measure how much more or less they are. In spite of the limitation, Likert scale is most useful when we compare the respondent's score with a distribution of scores from well defined sample group [Cooper and Schindler, 2003].

It was debated on the choice between five-point and seven-point or even ten-point scale in the frame work of customer satisfaction measurement. It is a measurement of attitudes and human perceptions. So in choosing a scale, it is to be noted that, higher the spread of the scale, the greater is the level of effort demanded from the respondent, to situate his or her answer in one of the scale points. If this effort is too high, it can reduce the quality of

responses and increase the non-response or forced bias-response rate [Coelho and Esteves, 2007]. Hence we decided to use five-point scale.

At the end, the researcher also kept a few open-ended questions so that the researcher gets respondents' own insights. It gives the participant a chance to ponder over a reply, to elaborate on and also to revise it (Sandhu and Singh, 1996).

CASE STUDY- PHASE II (PILOT STUDY)

The pilot study in phase II has been carried out in two companies one, Crop Protection Division of Specialty Chemical Company (Crop) and Diesel Engine Manufacturing Company (DiesEng)

6.4. Test of reliability of questionnaire

Each set of questions (items) under each scale have been administered to test frequency and reliability in SPSS. Minimums of 1.000 and maximums of 5.000 have been applied for all items. Mean, Standard Deviation, Cronbach's Alpha have been tabulated in Appendix C. Summary of the analysis has been shown in Table 6.2

Table 6.2 Statistics and Reliability Estimates in Crop (N=25)

Scale Items*	Cronbach's Alpha
Customer Satisfaction Number of items 3 Q1 to Q3	0.9052
Product Quality	

Number of items 6	Q4 to Q9	0.9136
Price Fairness Number of items 4	Q10 to Q13	0.9784
Relationship Quality (TA) Number of items 10	Q14 to Q23	0.9705
Relationship Quality (SA) Number of items 11	Q24 to Q34	0.9828
Order Management Cycle Number of items 12	Q35 to Q46	0.9774

**Measured on five-point Likert Scale*

This coefficient varies from 0 to 1, and a value of 0.6 or less generally indicates unsatisfactory internal consistency reliability [Malhotra, 2001]. Since *Cronbach's alpha* of each scale is above 0.9000, they are reliable and no changes in the questionnaire has been made.

We have also done another pilot study in leading Corrosion Protection Company and administered the data in SPSS for Frequency and Reliabity. Minimum of 1.000 and maximum of 5.000 applied for all items. Mean, Standard Deviation, Cronbach's Alpha have been tabulated in Appendix C. Summary of the analysis has been shown in Table 6.3

Table 6.3 Statistics and Reliability Estimates in DiesEng (N=24)

Scale Items*		**Cronbach's Alpha**
Customer Satisfaction Number of items 3	Q1 to Q3	.7383
Product Quality		.9362

Number of items 6	Q4 to Q9	
Price Fairness Number of items 4	Q10 to Q13	.9598
Relationship Quality (TA) Number of items 10	Q14 to Q23	.9486
Relationship Quality (SA) Number of items 11	Q24 to Q34	.9658
Order Management Cycle Number of items 12	Q35 to Q46	.9478

Cronbach's alpha of each scale is above 0.9000, and customer satisfaction is 0.7383. All of them are reliable and no change in the questionnaire has been made.

We have tested the research methodology adopted by us as pilot study in above two companies in next chapter.

Chapter VII

PILOT STUDY

We have stated the methodology of our study in chapter V. In this chapter we have recorded the pilot study done on two companies. The analysis of the data has been done using SPSS and all descriptive statistics have been obtained. Then we have used regression techniques and generated r, r^2, R^2, Adj R^2 and F value to help us in assessing the predictive power of our proposed model.

The results from the above analysis have been given in **Appendix E** and **Appendix F** for Crop Protection Division of Specialty Chemical Company (Crop) Protection and Diesel Engine Manufacturing Company (DiesEng).

We now take the respective portion of analysis of data captured in above appendices for further analysis and interpretation

7.1. Data Analysis and Interpretation

Table 7.1 Descriptive Statistics

Crop	Mean	Standard Deviation	N
Customer Satisfaction	4.48	.823	25
Product Quality	4.72	.542	25
Price Fairness	4.32	.988	25
Relationship Quality (TA)	3.52	.918	25
Relationship Quality (SA)	3.84	.943	25
Order Management Cycle	3.44	.870	25
DiesEng	Mean	Standard Deviation	N
Customer Satisfaction	4.38	.495	24
Product Quality	4.25	.676	24
Price Fairness	4.21	.721	24
Relationship Quality (TA)	4.21	.588	24
Relationship Quality (SA)	4.21	.779	24
Order Management Cycle	4.71	.464	24

The data analysis in Table 7.1 shows the central tendency, mean and the corresponding standard deviation of all variables under study. The mean of all variables are between 3.44 and 4.71 from a five-point Likert scale; hence we can conclude respondents are favorable to the questions. The standard deviation shows that the dispersion is very low stating the high degree of homogeneity, or the coherence between the replies of the respondents.

Now we test the hypotheses as follows.

The first hypothesis is:

H_{01}: There is a no relationship between 'product quality' and 'customer satisfaction'.
H_{a1}: There is a significant relationship between 'product quality' and 'customer satisfaction'.

Table 7.2 Regression Analysis of PQ and CS

Sr. No.		Crop	DiesEng
1	r, of PQ and CS	.875	.878
2	F calculated, of PQ and CS	75.412	74.250
3	F listed, of PQ and CS	7.88	7.95

at 1% level of significance using two tailed test.

Serial numbers 1 to 3 of above Table 7.2 show correlation of PQ and CS is 0.875 in Crop and is 0.878 in DiesEng. F-calculated (75.412, 74.250) is greater than F-listed (7.88, 7.95) in both the companies at 1% level of significance using two tailed test.

These results of Table 7.1 and 7.2 confirm that H_{01} is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'customer satisfaction', and almost equally intense in both the companies.

The second hypothesis is:

H_{02}: There is no relationship between 'price fairness' and 'customer satisfaction'.
H_{a2}: There is a significant relationship between 'price fairness' and 'customer satisfaction'

Table 7.3. Regression Analysis of PF and CS

Sr. No.		Crop	DiesEng

1	r, of PF and CS	.726	.869
2	F calculated, of PF and CS	25.597	67.687
3	F listed, of PF and CS	7.88	7.95

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 in above Table 7.3 indicate correlation of PF and CS is 0.726 in Crop and is 0.869 in DiesEng. F-calculated (25.597, 67.687) is greater than F-listed (7.88, 7.95) in both the companies at 1% level of significance using two tailed test.

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These results of Table 7.1 and 7.3 confirm that H_{02} is rejected, indicating there is a significant positive relationship of high degree between 'price fairness' and 'customer satisfaction' though of somewhat higher intensity in DiesEng than in Crop.

The third set of hypotheses is:

$H_{03.1}$: There is no relationship between 'product quality' and 'price fairness'
$H_{a3.1}$: There is a significant relationship between 'product quality' and 'price fairness'

Table 7.4 Regression Analysis of PQ and PF

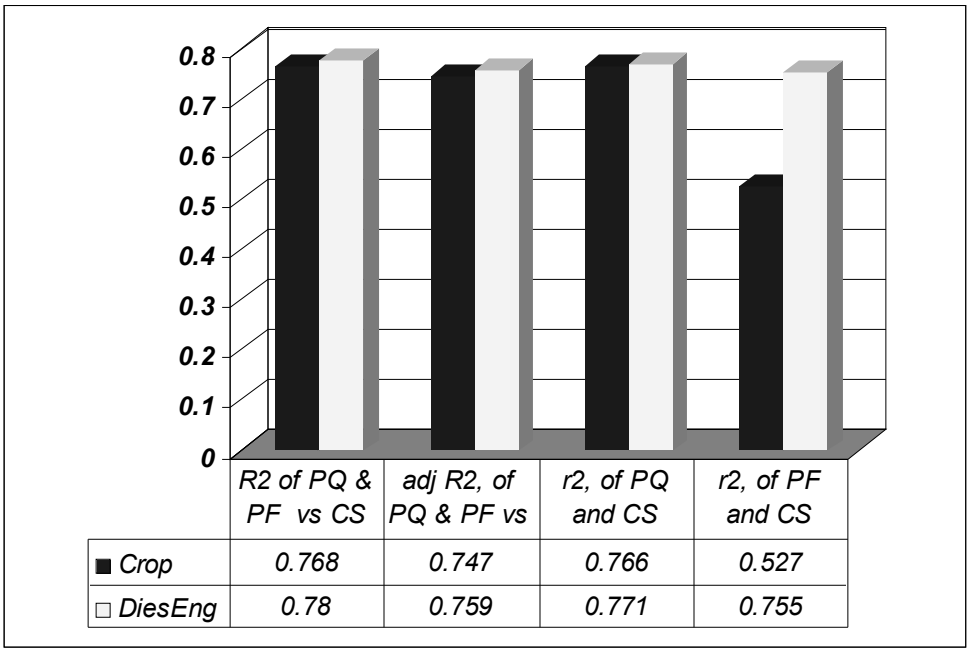
Sr. No.		Crop	DiesEng
1.	r, of PQ and PF	.797	.959
2.	F calculated, of PQ and PF	40.089	254.238
3.	F listed, of PQ and PF	7.88	7.95

at 1% level of significance using two tailed test.

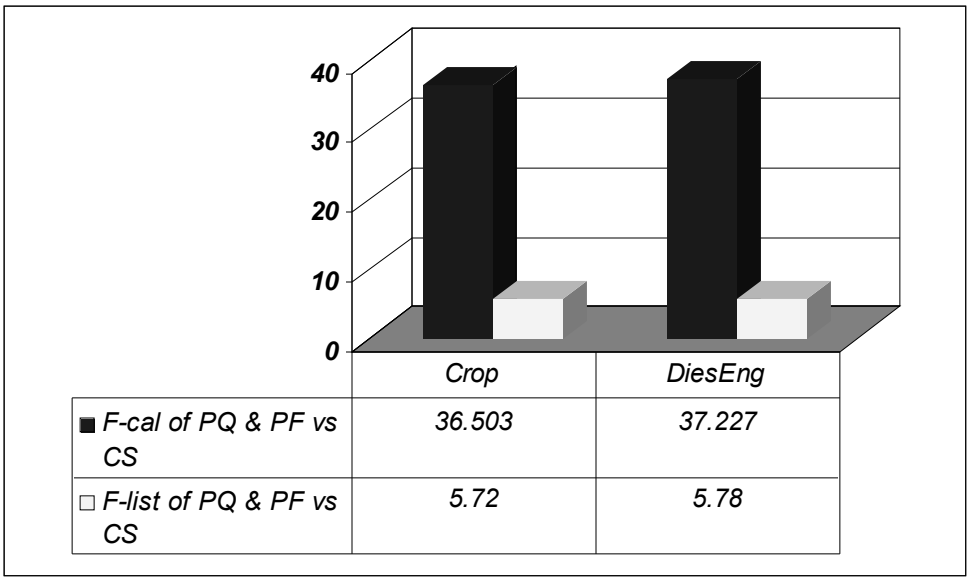
The serial numbers 1 to 3 of Table 7.4 depict correlation of PQ and PF is 0.797 in Crop and is 0.959 in DiesEng. F-calculated (40.089) is greater than F-listed (7.88) in case of Crop and F-calculated (254.238) is greater than F-listed (7.95) in case of DiesEng both.

These results of Table 7.1 and 7.4 confirm that $H_{03.1}$ is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'price fairness', though of somewhat higher intensity in DiesEng than in Crop

$H_{03.2}$: There is no relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.
$H_{a3.2}$: There is a significant relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.



	R2 of PQ & PF vs CS	adj R2, of PQ & PF vs	r2, of PQ and CS	r2, of PF and CS
■ Crop	0.768	0.747	0.766	0.527
□ DiesEng	0.78	0.759	0.771	0.755



at 1% level of significance using two tailed test.

Fig 7.1 Regression Analysis of PQ, PF, and CS

Results of Fig 7.1 illustrate both in Crop and in DiesEng, R^2 of the combined variables PQ and PF versus CS (at 0.768, 0.780) is greater than the r^2 of the variables PQ and CS (at 0.766, 0.771) and also greater than the r^2 of the variables PF and CS (at 0.527, 0.755). From this we can conclude that the modeled relationship between PQ and CS derives more strength by the addition of PF to the PQ variable and then correlating that with CS. This pattern has been observed for both the companies. Moreover the value of R^2 of both the companies (0.768, 0.780) has been compared with the 'adjusted $R^{2'}$ (0.747, 0.759); and it has been observed that the value of 'adjusted $R^{2'}$ is close to R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

Results of Fig 7.1 also indicate that the calculated F (36.503, 37.227) of both the companies is greater than the listed F (5.72, 5.78) at 1% level of significance using two tailed test.

These results of Table 7.1 and Fig 7.1 confirm that $H_{03.2}$ get rejected, indicating that the combined effect of 'product quality' and 'price fairness', has a greater effect on 'customer satisfaction' than individual effect of each one.

The fourth set of hypotheses is:

$H_{04.1}$: There is no relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.
$H_{a4.1}$: There is a significant relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

Table 7.5 Regression Analysis of RQTA and CS

Sr. No.		Crop*	DiesEng **
1	r, of RQTA and CS	.649	.467
2	F calculated, of RQTA and CS	16.706	6.138
3	F listed, of RQTA and CS	7.88	5.79

at 1% level (2.5%level) of significance using two tailed test.*

The serial numbers 1 to 3 of above Table 7.5 report correlation of RQTA and CS is 0.649 in Crop and is 0.467 in DiesEng. F-calculated (16.706) is greater than F-listed (7.88) in case of Crop at 1% level of significance; and F-calculated (6.138) is greater than F-listed (5.79) in case of DiesEng at 2.5% level of significance using two tailed test

These results of Table 7.1 and 7.5 confirm that $H_{04.1}$ is rejected indicating that there is a positive relationship of moderate degree between 'relationship quality (transactional aspects)' and 'customer satisfaction' in Crop. There is a positive relationship of low degree between 'relationship quality (transactional aspects)' and 'customer satisfaction' in DiesEng.

$H_{04.2}$: There is no relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.
$H_{a4.2}$: There is a significant relationship between 'relationship quality (softer aspects') and 'customer satisfaction'.

Table 7.6 Regression Analysis of RQSA and CS

Sr. No.		Crop*	DiesEng **
1	R, of RQSA and CS	.694	.353
2	F calculated, of RQSA and CS	21.334	3.12
3	F listed, of RQSA and CS	7.88	Not listed

at 1% level (9.1%) of significance using two tailed test.*

The serial numbers 1 to 3 of above Table 7.6 present correlation of RQSA and CS is 0.694 in Crop and is 0.353 in DiesEng. F-calculated (21.334) is greater than F-listed (7.88) in case of Crop at 1% level of significance. And F-calculated (3.12) can not be inferred upon in case of Eng Co due to high error of significance.

These results of Table 7.1 and 7.6 in case of Crop, confirm that $H_{04.2}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality (softer aspects)' and 'customer satisfaction'.

Where as these results of Table 7.1 and 7.6 in case of DiesEng, can not confirm that $H_{04.2}$ is rejected; indicating the results can not confirm a significant positive relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'; however there is a positive relationship of low degree.

H_{04}: There is no relationship between' relationship quality' and 'customer satisfaction'.
H_{a4}: There is a significant relationship between 'relationship quality' and 'customer satisfaction'.

Table 7.7 Regression Analysis of RQ (RQTA and RQSA together as independent variable) **and CS**

Sr. No.		Crop	DiesEng *
1	r, of RQ (RQTA, RQSA) and CS	.700	.467
2	F calculated, of RQ and CS	10.555	2.930

3	F listed, of RQ and CS	7.95	No listing

at 1% level (7.5% level) of significance using two tailed test.*

The serial numbers 1 to 3 of above Table 7.7 show correlation of RQ and CS is 0.700 in Crop and is 0.467 in DiesEng. F-calculated (10.555) is greater than F-listed (7.95) in case of Crop at 1% level of significance. And F-calculated (2.930) can not be inferred upon in case of DiesEng.

These results of Table 7.1 and 7.7 in case of Crop, confirm that H_{04} is rejected, indicating a significant positive relationship of high degree between 'relationship quality (softer aspects)' and 'customer satisfaction'.

Where as these results of Table 7.1 and 7.7 in case of DiesEng , can not confirm that H_{04} is rejected; indicating the results can not confirm a significant positive relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'; however there a positive relationship of low degree.

The fifth hypothesis is:

H_{05}: There is no relationship between 'order management cycle' and 'customer satisfaction'.
H_{a5}: There is a significant relationship between 'order management cycle' and 'customer satisfaction'.

Table 7.8 Regression Analysis of CS and OMC

Sr. No.		Crop*	DiesEng **
1	r, of CS and OMC	.624	.497
2	F calculated, of CS and OMC	14.684	7.219
3	F listed, of CS and OMC	7.88	5.79

at 1% level (2.5% level) of significance using two tailed test.*

The serial numbers 1 to 3 of above Table 7.8 present correlation of CS and OMC is 0.624 in Crop and is 0.497 in Eng. F-calculated (14.684) is greater than F-listed (7.88) in case of Crop at 1% level of significance; and F-calculated (7.219) is greater than F-listed (5.79) in case of DiesEng at 2.5% level of significance, using two tailed test in both cases.

These results of Table 7.1 and 7.8 confirm that in Crop, H_{05} is rejected indicating a positive relationship of moderate degree between 'order management cycle' and 'customer satisfaction'. In case of DiesEng, there is a positive relationship of low degree between 'order management cycle' and 'customer satisfaction'.

The sixth set of hypotheses is:

$H_{06.1}$: There is no relationship between 'relationship quality' and 'order management cycle'
$H_{a6.1}$: There is a significant relationship between 'relationship quality' and 'order management

Table 7.9 Regression Analysis of RQ (RQTA, RQSA) and OMC

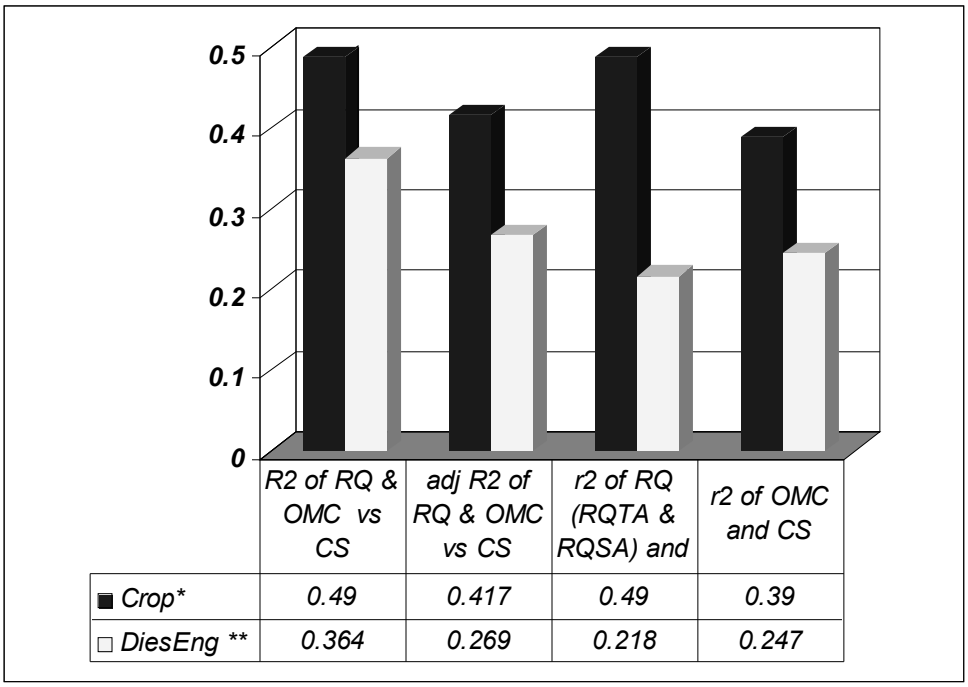
Sr. No.		Crop	DiesEng
1.	R of RQ (RQTA, RQSA) and OMC	.955	.778
2.	F calculated, of RQ and OMC	112.724	16.124
3.	F listed, of RQ and OMC	5.72	5.78

at 1% level of significance using two tailed test.

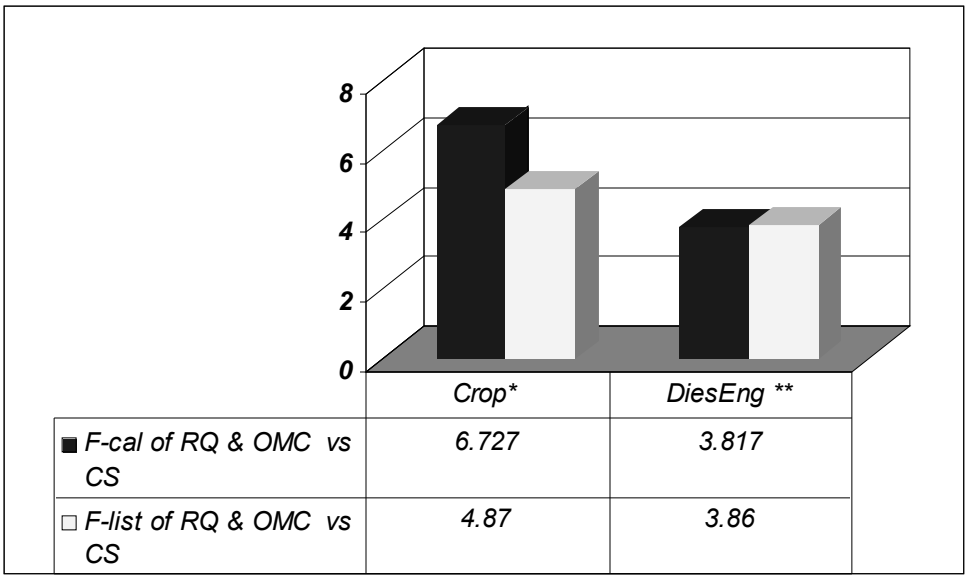
The serial numbers 1 to 3 of above Table 7.9 indicate correlation of RQ and OMC is 0. .955 in Crop and is 0.778 in DiesEng. F-calculated (112.724, 16.124) is greater than F-listed (5.72, 5.78,) in both the companies at 1% level of significance using two tailed test.

These results of Table 7.1 and 7.9 confirm that $H_{06.1}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality' and 'order management cycle' though of somewhat higher intensity in Crop than DiesEng.

$H_{06.2}$: There is no relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'
$H_{a6.2}$: There is a significant relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'.



	R2 of RQ & OMC vs CS	adj R2 of RQ & OMC vs CS	r2 of RQ (RQTA & RQSA) and	r2 of OMC and CS
Crop*	0.49	0.417	0.49	0.39
DiesEng **	0.364	0.269	0.218	0.247



*at 1% level (**2.5%) of significance using two tailed test.*

Fig 7.2 Regression Analysis of RQ (RQTA, RQSA), OMC and CS

Results in Fig 7.2 report that in Crop, the R^2 of combined variables RQ & OMC versus the dependent variable, CS (at 0.490) is same as correlation r^2 of RQ and CS (0.490), but is greater than r^2 of OMC and CS (0.390).

In DiesEng, the R^2 of the combined variables RQ & OMC versus dependent variable, CS (at 0.364) is greater than the r^2 of RQ and CS (0.218), and similarly it is also greater than r^2 of OMC and CS (0.247).

So we can conclude that the modeled relationship between OMC and CS derives more strength by the additional variables RQ in both the cases. Moreover the value of R^2 of both the companies (0.490, 0.364) has been compared with the 'adjusted $R^{2'}$ (0.417, 0.269); and it has been observed that the 'adjusted R^2' is marginally lower than the R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

The serial number 5 and 6 of above Table 7.11 shows, that the calculated F (6.727) is greater than the listed F (4.87) at 1% level of significance using two tailed test in Crop.

These results confirm that in case of Crop, $H_{06.2}$ is rejected indicating that the combined effect of 'relationship quality' and 'order management cycle' has a greater effect on 'customer satisfaction' than individual effect of each one in case of Crop.

The serial number 5 and 6 of above Table 7.11 also shows that in DiesEng the calculated F (3.817) is marginally less than listed F (3.86) at 2.5% level of significance using two tailed test.

These results in case of DiesEng, can not confirm that $H_{04.2}$ is rejected indicating that the results can not confirm that the combined effect of 'relationship quality' and 'order management cycle' has greater effect on 'customer satisfaction' than the individual effects of each one

In open-ended questions, some of the customers of Crop expressed their unhappiness of short supply against the order and also for not informing the customers in the event of delay in execution of order. This has been reflected in lower rating towards effectiveness of OMC in close-ended questions also.

In open-ended questions, most of the customers of DiesEng did not express their unhappiness for the price increase, but the way the increase was done by the company, without any discussion was termed as high handedness. The company did not consider the customers as their business partners. This has been reflected in low rating of RQ especially in RQSA by the respondents in close-ended questions. In turn it reflected low rating in overall effect of RQ and combined effect of RQ and OMC on CS

Study results showed encouraging results which was our motivation to subsequently undertake the longitudinal as well as the final survey.

Chapter VIII

LONGITUDINAL STUDY

Case Studies (Phase III)

The research design moved to Phase III when longitudinal data was collected from same two companies for research during the year 2002 to 2004. At the cost of an extended time frame, this method is known to lend solidity to findings especially when they involve organizational wide contexts [Cooper and Schindler, 2003].

As stated earlier the companies chosen were large manufacturing companies which had detailed order management cycle, yet they did not have significant positive impact over their customers. This provided a sound basis for the study. Also these companies were keenly interested in this research study and provided easy access to the researcher in the latter's capacity as their consultant.

The companies on which case studies and research have been done have preferred to remain anonymous. The researcher did not mention the names of the companies as well as the individual names of the executives and managers.

The researcher interviewed the primary customers – original equipment manufacturer (OEM) customers and the intermediaries. Before that, as stated earlier, the researcher interviewed the managers of the companies including senior managers at the level of senior vice presidents. Since the project was supported by the company, the researcher could use the branch managers/field managers for accessing and conducting the interview of the customers across the country. Since the top executives were interested in increasing the customer satisfaction, the researcher could make the schedule of evidence collection. The study was planned for three years, in the unlikely event that many of the managers do get transferred or change their job, the researcher made this project institutionalized in the company so that if there was a change of guard, there would be no

problem in data collection. Number of respondents were chosen in such a manner so that if some of them did not remain associated with the company at a later point of time, still the desired data of longitudinal study would not get affected.

8.1 The Specialty Chemical Company – Crop Protection Division (Crop)

In 2001-02, the company was amongst the top three marketers in the Crop Protection market of India but the company was eroding profit to Indian generic producers of pesticides.

Most senior managers believed that quality and brand image of the company was good but the price of the company was not competitive and hence the customers were dissatisfied.

With the help of Managers in corporate marketing division and branch managers, the researcher selected 50 primary organizations all over India based on convenience sampling. Normally phenomenologists rarely consider random selection method relevant; where as non-probability sampling which is based on some sort of subjective judgment or convenience is relevant in exploratory research. Since the study was to be done with the most readily available representative organizations and periodical survey needs to be done, convenience sampling was adopted [Aaker et al 2001].

Survey was conducted using pre-tested and validated structured questionnaire, Appendix B. Five point Likert scales were used: very satisfied; somewhat satisfied; neither satisfied nor dissatisfied; somewhat dissatisfied; very dissatisfied. There was also an open ended question. Survey results are tabulated using SPSS and shown below. Longitudinal study was carried out for three consecutive years in the year 2002, 2003, and 2004.

Findings of the exploratory study in the year 2001 revealed the weakness of the company in the management of RQ and OMC. The findings were presented to the top management. They decided to implement SAP for managing the entire supply-chain,

including receiving the orders and executing the same for the Primary customers. Simultaneously all 50 managers all over India were put in management development program with focus on relationship management and customer satisfaction, over the period of one year.

We now present the data and analysis of longitudinal survey over three years i.e. 2002, 2003 and 2004, interpretation and test all hypotheses:

8.1.1. Data Analysis and Interpretation of Crop

Table 8.1 Descriptive Statistics (Crop)

Variables	2002		2003		2004	
	Mean	SD	Mean	SD	Mean	SD
Customer Satisfaction	4.50	.814	4.67	.595	4.90	.303
Product Quality	4.72	.536	4.71	.582	4.76	.517
Price Fairness	3.84	1.131	3.96	1.071	3.88	1.118
Relationship Quality Transactional Aspect	4.08	.488	4.17	.377	4.70	.463
Relationship Quality Softer Aspect	4.40	.495	4.50	.505	4.60	.495
OMC	4.28	.730	4.31	.689	4.80	.404

The data analysis in Table 8.1 shows the central tendency, mean and the corresponding standard deviation of all variables for three years under study. The mean of all variables are between 3.84 and 4.90 from a five-point Likert scale; hence we can conclude that respondents are favorable to the questions. The standard deviation shows that the dispersion is very low stating the high degree of homogeneity, or the coherence between the replies of the respondents.

Now we test the hypotheses with the help of multiple regressions for three years of study i.e. the year 2002, 2003 and 2004 as follows.

The first hypothesis is:

H_{01}: There is a no relationship between 'product quality' and 'customer satisfaction'.
H_{a1}: There is a significant relationship between 'product quality' and 'customer satisfaction'.

Table 8.2 Regression Analysis of PQ and CS (Crop)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of PQ and CS	.888	.941	.755
2	F calculated, of PQ and CS	179.374	358.512	63.572
3	F listed, of PQ and CS	7.31	7.31	7.31

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.2 show correlation of PQ and CS is 0.888, 0.941, and 0.755 for the year 2002, 2003, and 2004. F-calculated (179.374, 358.512, 63.572) is greater than F-listed (7.31) in all the years at 1% level of significance using two tailed test.

These results of Table 8.1 and 8.2 confirm that H_{01} is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'customer satisfaction', in all the three years; though somewhat higher degree in 2003, followed by 2002 and 2004.

The second hypothesis is:

H_{02}: There is no relationship between 'price fairness' and 'customer satisfaction'.
H_{a2}: There is a significant relationship between 'price fairness' and 'customer satisfaction'

Table 8.3 Regression Analysis of PF and CS (Crop)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of PF and CS	.820	.812	.566
2	F calculated, of PF and CS	98.166	88.865	22.632
3	F listed, of PF and CS	7.31	7.31	7.31

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of Table 8.3 depict correlation of PF and CS is 0.820, 0.812, and 0.566 for the year 2002, 2003 and 2004. F-calculated (98.166, 88.865, 22.632) is greater than F-listed (7.31) in all the years at 1% level of significance using two tailed test.

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These results of Table 8.1 and 8.3 confirm that H_{02} is rejected, indicating there is a significant positive relationship of high degree between 'price fairness' and 'customer satisfaction' in 2002 and 2003, though of moderate degree of correlation in the year 2004.

The third set of hypotheses is:

$H_{03.1}$: There is no relationship between 'product quality' and 'price fairness'
$H_{a3.1}$: There is a significant relationship between 'product quality' and 'price fairness'

Table 8.4 Regression Analysis of PQ and PF (Crop)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1.	r, of PQ and PF	.732	.765	.725
2.	F calculated, of PQ and PF	55.488	64.992	53.216
3.	F listed, of PQ and PF	7.31	7.31	7.31

at 1% level of significance using two tailed test.

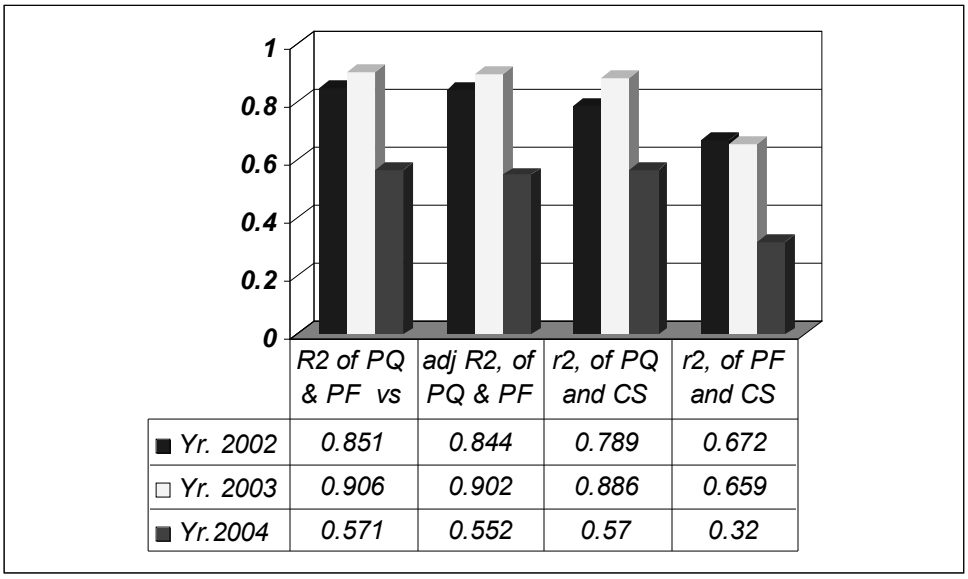
The serial numbers 1 to 3 of above Table 8.4 present correlation of PQ and PF is 0.732, 0.765, and 0.725 for the years 2002, 2003, and 2004. F-calculated (55.488, 64.992,

53.216) is greater than F-listed (7.31) in all the years at 1% level of significance using two tailed test.

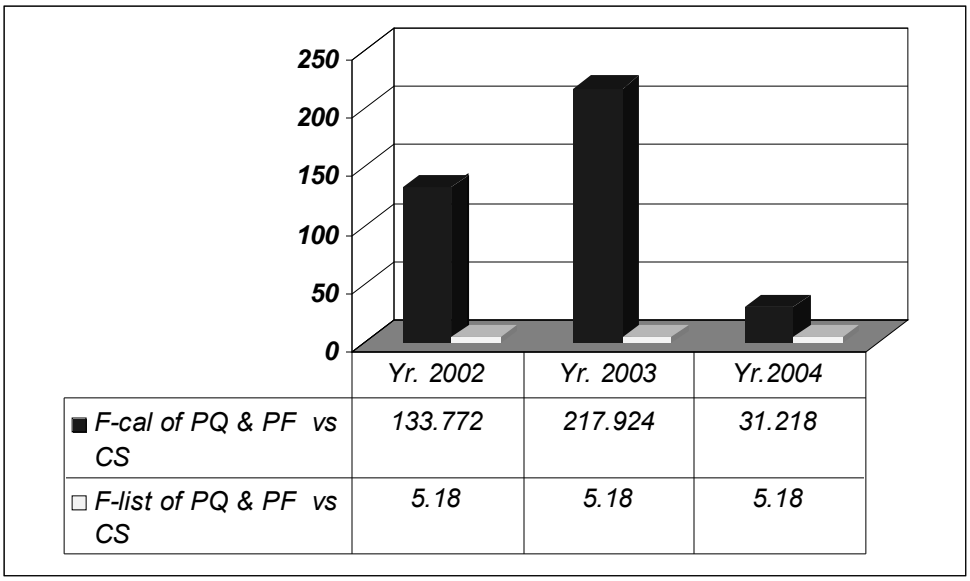
These results of Table 8.1 and 8.4 confirm that $H_{03.1}$ is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'price fairness', in all the three years of similar intensity.

$H_{03.2}$: There is no relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.

$H_{a3.2}$: There is a significant relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.



	R2 of PQ & PF vs	adj R2, of PQ & PF	r2, of PQ and CS	r2, of PF and CS
Yr. 2002	0.851	0.844	0.789	0.672
Yr. 2003	0.906	0.902	0.886	0.659
Yr.2004	0.571	0.552	0.57	0.32



at 1% level of significance using two tailed test.

Figure 8.1 Regression Analysis of PQ, PF, and CS (Crop)

Figure 8.1 reports that in all the years 2002, 2003, and 2004, R^2 of the combined variables PQ & PF versus CS (at 0.851, 0.906, 0.571) is greater than the r^2 of the variables PQ and CS (at 0.789, 0.886, 0.570) and also greater than the r^2 of the variables PF and CS (at 0.672, 0.659, 0.320). From this we can conclude that the modeled relationship between PQ and CS derives more strength by the addition of PF to the PQ variable and then correlating that with CS. This pattern has been observed in all the three years. Moreover the value of R^2 of all the three years (0.851, 0.906, 0.571) has been compared with the 'adjusted $R^{2'}$ (0.844, 0.902 0.552); and it has been observed that the 'adjusted $R^{2'}$ is only marginally lower than the R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

The results in Fig 8.1 indicate F calculated (133.772, 217.924, 31.218) of all the three years is greater than the F listed (5.18) at 1% level of significance using two tailed test.

These results of Table 8.1 and Fig 8.1 confirm that $H_{03.2}$ get rejected, indicating that the combined effect of 'product quality' and 'price fairness', has a greater effect on 'customer satisfaction' than individual effect of each one in all three years.

The fourth set of hypotheses is:

$H_{04.1}$: There is no relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.
$H_{a4.1}$: There is a significant relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

Table 8.5 Regression Analysis of RQTA and CS (Crop)

Sr. No.		Yr. 2002*	Yr. 2003**	Yr.2004*
1	r, of RQTA and CS	.513	.253	.509
2	F calculated, of RQTA and CS	17.167	3.145	16.800
3	F listed, of RQTA and CS	7.31	Not listed	7.31

at 1% level (8.3%level) of significance using two tailed test.*

The serial numbers 1 to 3 of Table 8.5 show correlations of RQTA and CS is 0.513, 0.253, and 0.509 for the year 2002, 2003, and 2004. F-calculated (17.167, 16.800) is greater than F-listed (7.31) in case of the year 2002 and 2004 at 1% level of significance using two tailed test. And F-calculated (3.145) can not be inferred upon in case of the year 2003.

These results of Table 8.1 and 8.5 confirm that $H_{04.1}$ is rejected indicating that there is a positive relationship of moderate degree between 'relationship quality (transactional aspects)' and 'customer satisfaction' for the year 2002 and 2004.

These results of Table 8.1 and 8.5 can not confirm that $H_{04.1}$ is rejected in case of the year 2003, indicating that the results can not confirm any relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction' for the year 2003.

$H_{04.2}$: There is no relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.
$H_{a4.2}$: There is a significant relationship between 'relationship quality (softer aspects') and 'customer satisfaction'.

Table 8.6 Regression Analysis of RQSA and CS (Crop)

Sr. No.		Yr. 2002*	Yr. 2003*	Yr.2004**
1	r, of RQSA and CS	.506	.566	.408
2	F calculated, of RQSA and CS	16.552	21.647	9.600
3	F listed, of RQSA and CS	7.31	7.31	4.08

at 1% level (5% level) of significance using two tailed test.*

The serial numbers 1 to 3 of above Table 8.6 depict correlation of RQSA and CS is 0.506, 0.566, and 0.408 for the year 2002, 2003, 2004. F-calculated (16.552, 21.647) is greater than F-listed (7.31) for the year 2002 and 2003 at 1% level of significance using two tailed test. And F-calculated (9.600) is greater than F-listed (4.08) for the year 2004 at 5% level of significance using two tailed test.

These results of Table 8.1 and 8.6 confirm that $H_{04.2}$ is rejected indicating there is a positive relationship of moderate degree between 'relationship quality (softer aspects)' and 'customer satisfaction' for the year 2002, 2003, and 2004.

H_{04}: There is no relationship between' relationship quality' and 'customer satisfaction'.
H_{a4}: There is a significant relationship between 'relationship quality' and 'customer satisfaction'.

Table 8.7 Regression Analysis of RQ (RQTA and RQSA together as independent variable) **and CS [Crop]**

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	R, of RQ (RQTA, RQSA) and CS	.581	.566	.509
2	F calculated, of RQ and CS	11.970	10.588	8.225
3	F listed, of RQ and CS	5.18	5.18	5.18

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.7 shows correlation of RQ and CS is 0.581, 0.566 and 0.566 in the year 2002, 2003 and 2004. F-calculated (11.970, 10.588, 8.225) is greater than F-listed (5.18) at 1% level of significance in all the years.

These results of Table 8.1 and 8.7 confirm that H_{04} is rejected, indicating a positive relationship of moderate degree between 'relationship quality (softer aspects)' and 'customer satisfaction' in all the years.

The fifth hypothesis is:

H_{05}: There is no relationship between 'order management cycle' and 'customer satisfaction'.
H_{a5}: There is a significant relationship between 'order management cycle' and 'customer satisfaction'.

Table 8.8 Regression Analysis of CS and OMC (Crop)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of OMC and CS	.790	.726	.667
2	F calculated, of OMC and CS	79.699	51.264	38.400
3	F listed, of OMC and CS	7.31	7.31	7.31

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.8 show correlation of OMC and CS is 0.790, 0.726, and 0.667 for the year 2002, 2003, and 2004. F-calculated (79.699, 51.264, 38.400) is greater than F-listed (7.31) in all the years at 1% level of significance using two tailed test.

These results of Table 8.1 and 8.8 confirm that H_{05} is rejected, indicating there is a significant positive relationship of high degree between 'order management cycle' and 'customer satisfaction' in 2002 and 2003, though of moderate degree of correlation in the year 2004.

The sixth set of hypotheses is:

$H_{06.1}$: There is no relationship between 'relationship quality' and 'order management cycle'
$H_{a6.1}$: There is a significant relationship between 'relationship quality' and 'order management

Table 8.9 Regression Analysis of RQ (RQTA, RQSA) and OMC (Crop)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of RQ (RQTA, RQSA) and OMC	.843	.830	.764
2	F calculated, of RQ and OMC	57.555	49.865	32.700
3	F listed, of RQ and OMC	5.18	5.18	5.18

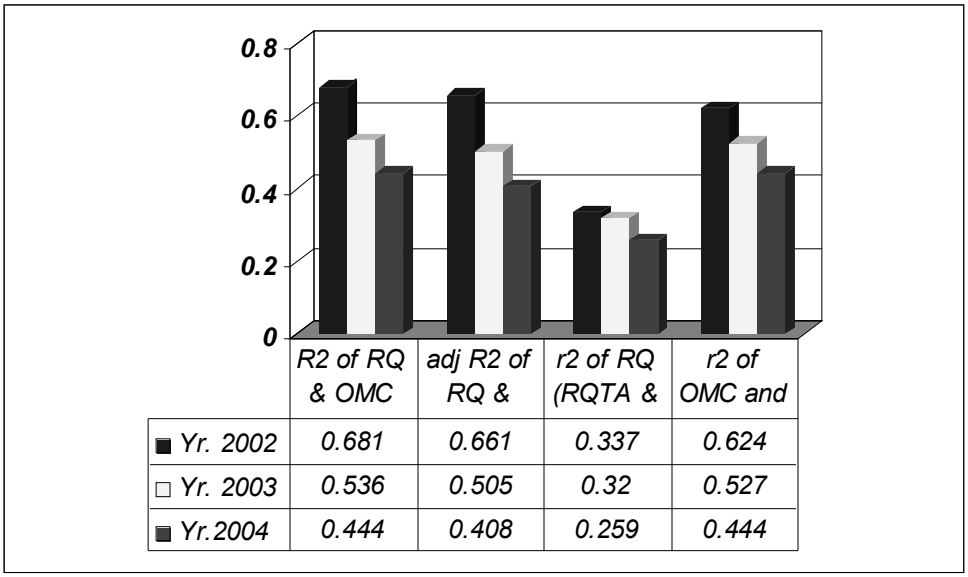
at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.9 shows correlation of RQ and OMC is 0.843, 0.830, and 0.764 for the year 2002, 2003 and 2004. F-calculated (57.555, 49.865, 32.700) is greater than F-listed (5.18) in all the years at 1% level of significance using two tailed test.

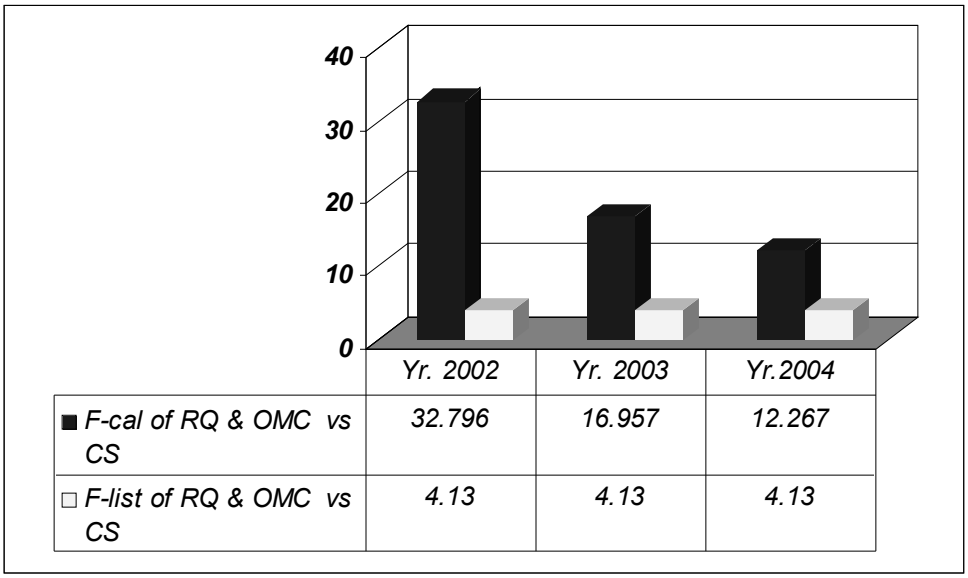
These results of Table 8.1 and 8.9 confirm that $H_{06.1}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality' and 'order management cycle' though of somewhat higher intensity in the year 2002 and 2003 than in the year 2004.

$H_{06.2}$: There is no relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'

$H_{a6.2}$: There is a significant relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'.



	R2 of RQ & OMC	adj R2 of RQ &	r2 of RQ (RQTA &	r2 of OMC and
Yr. 2002	0.681	0.661	0.337	0.624
Yr. 2003	0.536	0.505	0.32	0.527
Yr.2004	0.444	0.408	0.259	0.444



	Yr. 2002	Yr. 2003	Yr.2004
F-cal of RQ & OMC vs CS	32.796	16.957	12.267
F-list of RQ & OMC vs CS	4.13	4.13	4.13

at 1% level of significance using two tailed test.

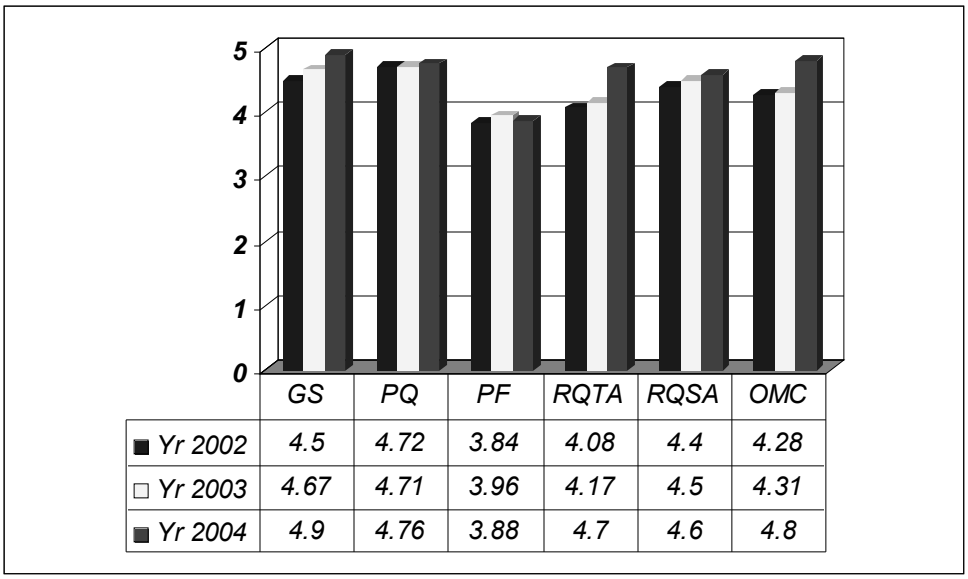
Figure 8.2 Regression Analysis of RQ (RQTA, RQSA), OMC and CS (Crop)

Figure 8.2 shows that in all the three years, R^2 of the combined variables RQ & OMC versus CS (at 0.681, 0.536, 0.444) is greater than the r^2 of the variables RQ and CS (at 0.337, 0.320, 0.259) and also greater than the r^2 of the variables OMC and CS (at 0.624, 0.527, 0.444). From this we can conclude that the modeled relationship between RQ and CS derives more strength by the addition of OMC to the RQ variables and then correlating that with CS. This pattern has been observed in all the three years. Moreover the value of R^2 of all the three years (0.681, 0.536, 0.444) has been compared with the 'adjusted $R^{2'}$ (0.661, 0.505 0.408) and it has been observed that the 'adjusted $R^{2'}$ is only marginally lower than the R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

The results of Figure 8.2 indicate F calculated (32.796, 16.957, 12.267) of all the three years is greater than the F listed (4.13) at 1% level of significance using two tailed test.

These results of Table 8.1 and Figure 8.2 confirm that $H_{06.2}$ is rejected indicating that the combined effect of 'relationship quality' and 'order management cycle' has a greater effect on 'customer satisfaction' than individual effect of each one in all the years.

In answers to open ended question responded expressed high level of satisfaction about quality of the product and appreciated offering latest technology in the market. They expect higher price commensurate with quality but some of them felt price should have been lower. In the year 2003 most of the customer complained about communication gap and lack of training by the company for placing order through SAP system. They attributed lack of empathy more than transactional difficulty faced in the system. In the 2004 they that SAP system is getting stabilized as company mangers have conducted training and became more responsive.



	GS	PQ	PF	RQTA	RQSA	OMC
Yr 2002	4.5	4.72	3.84	4.08	4.4	4.28
Yr 2003	4.67	4.71	3.96	4.17	4.5	4.31
Yr 2004	4.9	4.76	3.88	4.7	4.6	4.8

Figure 8.3 Changes of Mean of variables over the years in Crop

It is further observed from results of mean given in Figure 8.3 above that not much change has taken place in the perception of customers in the year 2003 comparing to the year 2002. The main reason was identified as teething trouble in implementation of SAP and understanding and communicating to the primary customers as well. As a result more confusion and dissatisfaction in OMC was created in the mind of customers. An IT and a Supply Chain Management consultant were then engaged, and teething trouble were taken care of. In each branch, workshop was conducted and customers were explained and communication gap was removed. The benefit of SAP could be felt towards the end of the year 2003 only.

Fifty senior managers of the company were undergoing management development program with SPJIMR, Mumbai were enthusiastic and could felt the need of implementing relationship management. But, for the company as whole, it took time to implement relationship management down the line to all employees who are directly or indirectly dealing with the customers. From the above Table 8.1 and Fig 8.3, it is observed that by the year 2004, some perceptible positive changes took place in the perception of customers regarding RQ (of both transactional and softer variety) and also in the OMC. Similar findings, such as progressive change being observed over the years

02-04, even also in the variable like general satisfaction. Interestingly, customer satisfaction went up, though there was not much change in perception of product quality and price fairness.

8.2 Diesel Engine Manufacturing Company (DiesEng)

In 2002, the company was a market leader and gained 80% market share in 'Fuel Oil heavy power plants' in India. The company like any other capital manufacturing firm earned more profit during the life-time of the plant/engine by maintaining the plant/engine than profit earned by selling the plant/engine.

One leading OEM customer in Hyderabad purchased diesel engine for the first time from the company in 1995 and had been getting the engine overhauled in 1998, 1999, and 2000 by the company, and the company earned INR 7 Million, INR 10 Million and INR 10 Million respectively from this account. When the second engine's overhaul was due in 2001, the customer did not accept the offer for spares as well as service from the company. Instead the customer decided to buy parts and service from the other party. Branch Managers attributed the defection to high price of the company.

The senior Managers decided to find out the reason of defection of the customer by the researcher as he was associated as a consultant to the company. Open-ended interview with the customer reveal that customer was paying higher price due to the brand image, quality service and almost no breakdown maintenance. Vendor Company was increasing the price of spares every year by 5 percent in 1998 and 1999. However, they did not increase the price in 2000, but did that with an increase of 12 percent in 2001 for some of the critical spare parts. Customers probably would have accepted a consistent price rise or even a negotiated increase, but not this (seemingly) adhoc rise of 12 percent, no matter how realistic and/or technically correct the figure was. The customer's logic was more accentuated due to the fact that there was in fact some reduction in price on some of the parts, notwithstanding the fact these were non-critical parts.

Lack of communication in all such matters was viewed as high handedness of the company Managers. Poor relationship quality and not managing order management cycle efficiently, led to the defection inspite of excellent quality of product and services and acceptable price.

In view of above findings, an exploratory study was done as shown in phase I case study. The result of the study was an eye-opener to the top management. The company management accepted the suggestion of the researcher for conducting periodic customer satisfaction study and take corrective measures to improve customer satisfaction proactively.

Since the researcher had specific purpose in mind and samples were likely to represent best practice in a particular issue, non-probability judgment or purposive sampling method was used [Sandhu and Singh, 1996]. Since major revenues come from the South Indian market, four large direct customers (Power plants) and 26 intermediaries (supplying diesel engines and maintenance parts) were chosen based on suggestions by the company managers. These 30 customers contribute 80 percent of the revenue in South India; company managers felt that these customers have the required knowledge and information and would provide useful ideas and insights.

We now present the data and analysis of longitudinal survey over three years i.e. 2002, 2003 and 2004, interpretation and test all hypotheses:

8.2.1 Data Analysis and Interpretation of DiesEng

Table 8.10 Descriptive Statistics (DiesEng)

Variables	2002		2003		2004	
	Mean	SD	Mean	SD	Mean	SD
General Satisfaction	3.93	.691	4.08	.688	4.22	.751
Product Quality	4.53	.776	4.69	.471	4.70	.465
Price Fairness	4.30	.988	4.62	.496	4.59	.694
Relationship Quality Transactional Aspect	3.60	.675	3.69	.679	4.15	.602
Relationship Quality Softer Aspect	4.40	.498	4.50	.510	4.63	.742
OMC	4.23	1.135	4.50	.762	4.63	.492

The data analysis in Table 8.10 shows the central tendency, mean and the corresponding standard deviation of all variables for three years under study. The mean of all variables are between 3.60 and 4.69 from a five-point Likert scale; hence we can conclude respondents are favorable to the questions. The standard deviation shows that the dispersion is very low stating the high degree of homogeneity, or the coherence between the replies of the respondents.

Now we test the hypotheses with the help of regressions for three years of study i.e. the year 2002, 2003 and 2004 as follows.

The first hypothesis is:

H_{01}: There is a no relationship between 'product quality' and 'customer satisfaction'.
H_{a1}: There is a significant relationship between 'product quality' and 'customer satisfaction'.

Table 8.11 Regression Analysis of PQ and CS (DiesEng)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of PQ and CS	.711	.693	.746
2	F calculated, of PQ and CS	28.640	22.208	31.353

3	F listed, of PQ and CS	7.64	7.82	7.77

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of Table 8.11 show correlation of PQ and CS is 0.711, 0.693, and 0.746 for the year 2002, 2003, and 2004. F-calculated (28.640, 22.208, 31.353) is greater than F-listed (7.64, 7.82, 7.77) in all the years at 1% level of significance using two tailed test.

These results of Table 8.10 and 8.11 confirm that H_{01} is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'customer satisfaction', though of somewhat higher intensity in the year 2004 followed by 2003 and 2002.

The second hypothesis is:

H_{02}: There is no relationship between 'price fairness' and 'customer satisfaction'.
H_{a2}: There is a significant relationship between 'price fairness' and 'customer satisfaction'

Table 8.12 Regression Analysis of PF and CS (DiesEng)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of PF and CS	.787	.676	.771
2	F calculated, of PF and CS	45.712	20.164	36.597
3	F listed, of PF and CS	7.64	7.82	7.77

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.12 depict correlation of PF and CS is 0.787, 0.676, and 0.771 for the year 2002, 2003 and 2004. F-calculated (45.712, 20.164, 36.597) is greater than F-listed (7.64, 7.82, 7.77) in all the years at 1% level of significance using two tailed test.

.

These results of Table 8.10 and 8.12 confirm that H_{02} is rejected, indicating there is a significant positive relationship of high degree between 'price fairness' and 'customer satisfaction' though of somewhat higher intensity in the year 2002 followed by 2004 and 2003.

The third set of hypotheses is:

$H_{03.1}$: There is no relationship between 'product quality' and 'price fairness'
$H_{a3.1}$: There is a significant relationship between 'product quality' and 'price fairness'

Table 8.13 Regression Analysis of PQ and PF (DiesEng)

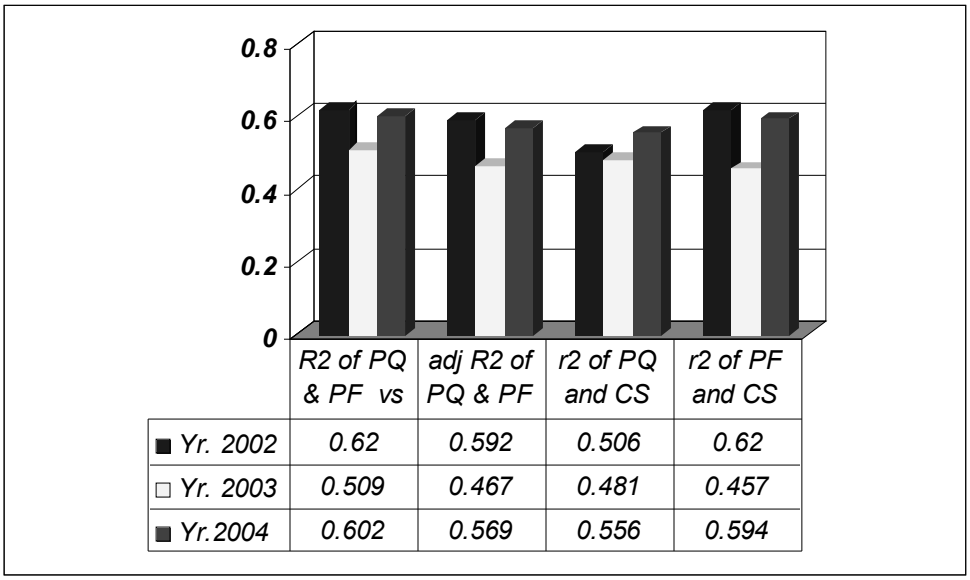
Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1.	r, of PQ and PF	.909	.843	.922
2.	F calculated, of PQ and PF	132.440	59.077	141.914
3.	F listed, of PQ and PF	7.64	7.82	7.77

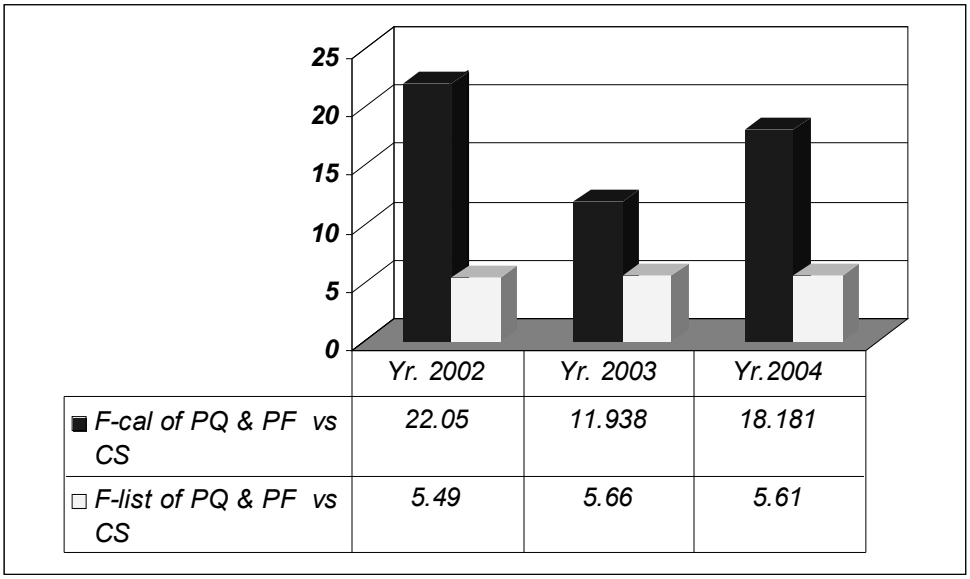
at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.13 illustrate correlation of PQ and PF is 0.909, 0.843, and 0.922 for the years 2002, 2003, and 2004. F-calculated (132.440, 59.077, 141.914) is greater than F-listed (7.64, 7.82, 7.77) in all the years at 1% level of significance using two tailed test.

These results of Table 8.10 and 8.13 confirm that $H_{03.1}$ is rejected, indicating there is a significant positive relationship of high degree between 'product quality' and 'price fairness', in all the three years.

$H_{03.2}$: There is no relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.
$H_{a3.2}$: There is a significant relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.





at 1% level of significance using two tailed test.

Figure 8.4 Regression Analysis of PQ, PF, and CS (DiesEng)

Figure 8.4 presents that in all the three years 2002, 2003, and 2004, R^2 of the combined variables PQ & PF versus CS (at 0.620, 0.509, 0.602) is greater than the r^2 of the variables PQ and CS (at 0.506, 0.481, 0.556) and also equal to or greater than the r^2 of the variables PF and CS (at 0.620, 0.457, 0.594). From this we can conclude that the modeled relationship between PQ and CS derives more strength by the addition of PF to

the PQ variable and then correlating that with CS. This pattern has been observed in all the three years. Moreover the value of R^2 of all the three years (0.620, 0.509, 0.602) has been compared with the 'adjusted $R^{2'}$ (0.592, 0.467, 0.569); and it has been observed that the 'adjusted $R^{2'}$ is only marginally lower than the R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

Figure 8.4 shows that the F calculated (22.050, 11.938, 18.181) of all the three years is greater than the F listed (5.49, 5.66, 5.61) at 1% level of significance using two tailed test.

These results of Table 8.10 and Figure 8.4 confirm that $H_{03.2}$ get rejected, indicating that the combined effect of 'product quality' and 'price fairness', has a greater effect on 'customer satisfaction' than individual effect of each one in all three years.

The fourth set of hypotheses is:

$H_{04.1}$: There is no relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.
$H_{a4.1}$: There is a significant relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

Table 8.14 Regression Analysis of RQTA and CS (DiesEng)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of RQTA and CS	.754	.737	.776
2	F calculated, of RQTA and CS	36.875	28.520	37.758
3	F listed, of RQTA and CS	7.64	7.82	7.77

at 1% level of significance using two tailed test.

The above Table 8.14 shows correlation of RQTA and CS is 0.754, 0.737, and 0.776 for the year 2002, 2003, and 2004. F-calculated (36.875, 28.520, 37.758) is greater than F-listed (7.64, 7.82, 7.77) in all the years at 1% level of significance using two tailed test.

These results of Table 8.10 and 8.14 confirm that $H_{04.1}$ is rejected indicating that there is a significant positive relationship of high degree between 'relationship quality (transactional aspects)' and 'customer satisfaction' in the year 2002, 2003, and 2004.

$H_{04.2}$: There is no relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.
$H_{a4.2}$: There is a significant relationship between 'relationship quality (softer aspects') and 'customer satisfaction'.

Table 8.15 Regression Analysis of RQSA and CS (DiesEng)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of RQSA and CS	.681	.684	.775
2	F calculated, of RQSA and CS	24.155	21.073	37.598
3	F listed, of RQSA and CS	7.64	7.82	7.77

at 1% level of significance using two tailed test.

The above Table 8.15 shows correlation of RQSA and CS is 0.681, 0.684, and 0.775 for the year 2002, 2003, 2004. F-calculated (24.155, 21.073, 37.598) is greater than F-listed (7.64, 7.82, 7.77) for the year 2002, 2003, and 2004 at 1% level of significance for all three years.

These results of Table 8.10 and 8.15 confirm that $H_{04.2}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality (softer aspects)' and 'customer satisfaction' for the year 2002, and 2003, and some what higher intensity in 2004.

H_{04}: There is no relationship between' relationship quality' and 'customer satisfaction'.
H_{a4}: There is a significant relationship between 'relationship quality' and 'customer satisfaction'.

Table 8.16 Regression Analysis of RQ (RQTA and RQSA together as independent variable) **and CS [DiesEng]**

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	R, of RQ (RQTA, RQSA) and CS	.784	.752	.855
2	F calculated, of RQ and CS	21.564	14.963	32.578
3	F listed, of RQ and CS	5.49	5.66	5.61

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.16 report correlation of RQ and CS is 0.784, 0.752 and 0.855 in the year 2002, 2003 and 2004. F-calculated (21.564, 14.963, 32.578) is greater than F-listed (5.49. 5.66, 5.61) at 1% level of significance using two tailed test in all the years.

These results of Table 8.10 and 8.16 confirm that H_{04} is rejected, indicating a significant positive relationship of high degree between 'relationship quality (softer aspects)' and 'customer satisfaction' in the year 2002 and 2003, though somewhat higher intensity in 2004.

The fifth hypothesis is:

H_{05}: There is no relationship between 'order management cycle' and 'customer satisfaction'.
H_{a5}: There is a significant relationship between 'order management cycle' and 'customer satisfaction'.

Table 8.17 Regression Analysis of CS and OMC (DiesEng)

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of OMC and CS	.767	.763	.752
2	F calculated, of OMC and CS	40.092	33.441	32.450
3	F listed, of OMC and CS	7.64	7.82	7.77

at 1% level of significance using two tailed test.

The serial numbers 1 to 3 of above Table 8.17 show correlation of OMC and CS is 0.767, 0.763, and 0.752 for the year 2002, 2003, and 2004. F-calculated (40.092, 33.441, 32.450) is greater than F-listed (7.64, 7.82, 7.77) at 1% level of significance using two tailed test in all the years.

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These results of Table 8.10 and 8.17 confirm that H_{05} is rejected, indicating there is a significant positive relationship of high degree between 'order management cycle' and 'customer satisfaction' and almost equally intense in 2002, 2003, and 2004.

The sixth set of hypotheses is:

$H_{06.1}$: There is no relationship between 'relationship quality' and 'order management cycle'

$H_{a6.1}$: There is a significant relationship between 'relationship quality' and 'order management

Table 8.18 Regression Analysis of RQ (RQTA, RQSA) and OMC [DiesEng]

Sr. No.		Yr. 2002	Yr. 2003	Yr.2004
1	r, of RQ (RQTA, RQSA) and OMC	.758	.719	.694
2	F calculated, of RQ and OMC	18.218	12.321	11.127
3	F listed, of RQ and OMC	5.49	5.66	5.61

at 1% level of significance using two tailed test.

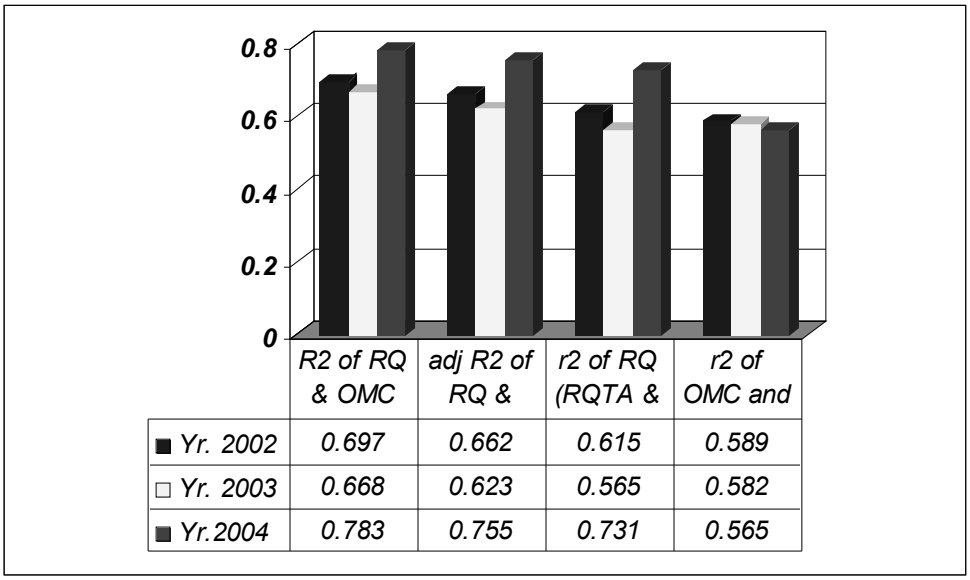
The serial numbers 1 to 3 of above Table 8.18 depict the correlation of RQ and OMC is 0.758, 0.719, and 0.694 for the year 2002, 2003 and 2004. F-calculated (18.218, 12.321, 11.127) is greater than F-listed (5.49, 5.66, 5.61) in all the years at 1% level of significance using two tailed test.

.

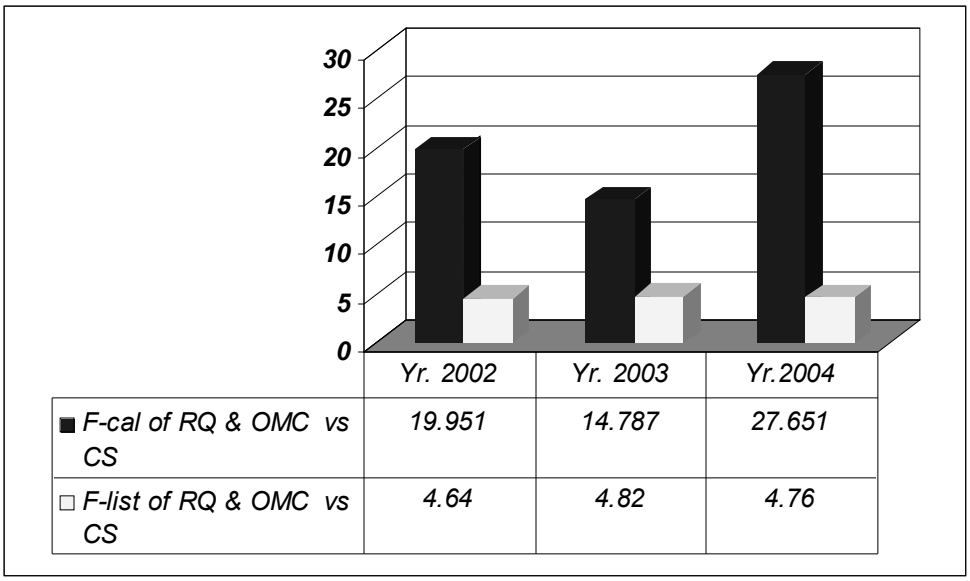
These results of Table 8.10 and 8.18 confirm that $H_{06.1}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality' and 'order management cycle' though of somewhat higher intensity in the year 2002 than the year 2003 and 2004.

$H_{06.2}$: There is no relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'

$H_{a6.2}$: There is a significant relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'.



	R2 of RQ & OMC	adj R2 of RQ &	r2 of RQ (RQTA &	r2 of OMC and
Yr. 2002	0.697	0.662	0.615	0.589
Yr. 2003	0.668	0.623	0.565	0.582
Yr.2004	0.783	0.755	0.731	0.565



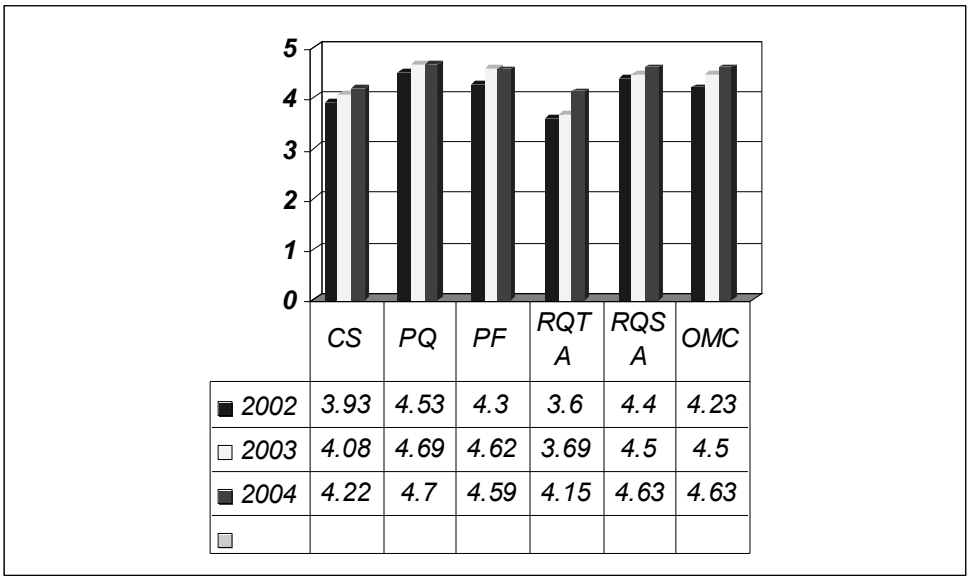
at 1% level of significance using two tailed test.

Figure 8.5 Regression Analysis of RQ (RQTA, RQSA), OMC and CS (DiesEng)

Figure 8.5 illustrate that in all the three years, R^2 of the combined variables RQ & OMC versus CS (at 0.697, 0.668, 0.783) is greater than the r^2 of the variables RQ and CS (at 0.615, 0.565, 0.731) and also greater than the r^2 of the variables OMC and CS (at 0.589, 0.582, 0.565). From this we can conclude that the modeled relationship between RQ and CS derives more strength by the addition of OMC to the RQ variables and then correlating that with CS. This pattern has been observed in all the three years. Moreover the value of R^2 of the combined variables RQ & OMC versus CS (at 0.697, 0.668, and 0.783) has been compared with the adjusted R^2 of the combined variables RQ & OMC versus CS (at 0.662, 0.623, and 0.755) and it has been observed that the 'adjusted $R^{2'}$ is only marginally lower than the R^2. This gives us an idea that the strength of interrelationship between these variables is very strong.

Figure 8.5 presents that the F calculated (19.951, 14.787, 27.651) of all the three years is greater than the F listed (4.64, 4.82, 4.76) at 1% level of significance using two tailed test.

These results of Table 8.10 and Figure 8.5 confirm that $H_{06.2}$ is rejected indicating that the combined effect of 'relationship quality' and 'order management cycle' is greater on 'customer satisfaction' than individual effect of each one on CS in all the years.



	CS	PQ	PF	RQTA	RQSA	OMC
2002	3.93	4.53	4.3	3.6	4.4	4.23
2003	4.08	4.69	4.62	3.69	4.5	4.5
2004	4.22	4.7	4.59	4.15	4.63	4.63

Figure 8.6 Changes of Mean of variables over the years in DiesEng

In this case also the customer satisfaction index have gone up with increase in RQ and better management of OMC. It can be easily seen from the above Fig 8.6 that if the company controls the product quality and price fairness, there may or may not be any perceptible change towards a favorable customer satisfaction. However, if this is complemented with a conscious improvement of the RQ (of either the transactional or softer variety or both) and OMC, it is bound to enhance customer satisfaction. When confronted with a result like this, the top management of the company changed its opinion that it is not just the competitive market price that makes a customer to move on. It is the RQ and OMC (not the price), that makes a customer to remain loyal with the company.

The analysis and findings based on this study alone was expected to cater to the development of six hypotheses given in the chapter III. However, it was decided to test these hypotheses across six companies for extensive validation of the results with minimum error. This was done in Phase IV of the research where six companies were chosen with contrasting business performance. Two such (contrasting) companies were chosen in each of the three industries and the subsequent validation results were presented accordingly.

Chapter IX

SURVEY AND DATA ANALYSIS

The researcher has adopted the following process in a structured manner for validation of results of earlier three phases of case study in two companies. We give a brief back ground of each company and sample size. As mentioned, a survey was conducted in six companies and results are recorded and analyzed as follows..

9.1. Company 1: Specialty Chemical company, Corp Protection Division (Crop)

The Indian operation of the multinational specialty chemical company has annual sales of INR 6881 Million (USD 138 Million) [source: company's annual report of the FY 2006]. Products of Crop Protection Division are supplied from production units to consignment agents to stockists to dealer and then to farmers. So the primary customers are stockists for our purpose of study. Target population is 1005.

9.1.1. Type of sample and size of sample

The researcher has done a non-probability and convenience sampling to represent the stockists from all states and covered stockists who contribute 80 percent business of that geographical area. After stratifying target population as above, random proportionate sample was chosen depending upon the size of population. A total of 350 samples were chosen; from which 285 responded; out of which 240 were both complete and valid. The feedback was taken by personal interview by the field executives of the company.

9.2. Company 2: Polymer Manufacturing Company (Polymr)

This company has technical collaboration with an American company that used to belong to an Indian business house having annual sales of INR 5850 Million (USD 117 Million) [source: company's annual report of the FY 2006].

The company is located at Navi Mumbai. Products of Polymer Division are supplied to OEM customers, mainly manufacturers of tube of automobile tyres as the product is used to improve the quality of the tube. OEM customers, engine oil manufactures use the product as viscosity improver. The company supplies the product to OEM customers through distributors/stockists when quantum consumed is less or the distributors/stockists have good relationship with the particular OEM customers.

9.2.1. Type of sample and size of sample

The company has 10 large OEM (original equipment manufacturer) customers and four regional distributors/stockists who supply 12 large customers and 30 small OEM customers. The researcher has taken entire population of direct 10 large OEM and 12 large OEM customers (served by four regional distributors/stockists) for the purpose of personal interview. The researcher has ignored small OEM customers as they contribute less than 10 percent of the revenue of the company. Out of which 21 responded and their response was valid and complete

9.3. Company 3: Diesel Engine Manufacturing Company (DiesEng)

Indian operation of the multinational company has annual sales of INR 2540 Million (USD 51 Million) [source: company's annual report of the FY 2005]. They manufacture Diesel Engines and undertake servicing of Diesel Engines and also sell spare parts. Products are supplied to the OEM customers and dealers. The total number of customers is 203. Maximum numbers of customers are located in western and southern region of India according to the database of the company.

9.3.1. Type of sample and size of sample

The researcher has done non-probability and judgmental sampling to represent the customers mainly from western and southern region. Samples of 32 customers were selected from which 25 responded and 24 of them were correct and valid responses. These were taken up for analysis.

9.4. Company 4: Seamless Tube Manufacturing Company (SeamTb)

The company is a major supplier to the domestic bearing and forging industry with annual sales of INR 4500 Million (USD 100 million) [source: company's annual report of the FY 2005].

9.4.1. Type of sample and size of sample

The researcher has done non-probability and convenience sampling to represent the twelve large OEM customers and thirty dealers who in turn supply to all small customers. Eight samples of large customers were chosen and six of them responded. Twenty dealers were chosen; 16 of them responded. A total number of valid and complete answers was received from 20 customers.

9.5. Company 5: American Laptop Company (Lap_AmCo)

The company is a leading American multinational with annual sales UDS 91 Billion [source: company's annual report of the FY 2005]. They are in a leading position in Indian operation. The company markets their Laptop PCs to large number of customers directly. The accredited dealers supply and offer after sales service, but company was responsible for all the services to their direct customers. The researcher has chosen two business schools as large customers where the company and the Japanese competitor supply a very similar configuration of laptops.

9.5.1. Type of sample and size of sample

The total population of study was 360 and 300 students (who are users) respectively in the two Business Schools. Quota based sampling was undertaken to collect similar sample size of users. Getting this quota provided no bias to the study since it was observed, that the student population was more or less equally divided amongst the two brands.

The researcher selected a sample of 27 and 25 randomly chosen from the second year students numbering 180 and 150 from each of two Business Schools. This was done keeping in view that the second year students have a greater exposure to the product and hence in its service. Valid response came from 25 and 23 students from each of two Business Schools. So the total valid sample size is 48

9.6. Company 6: Japanese Laptop Company (Lap_JapCo)

The company is a leading Japanese multinational with annual sales Japanese Yen 3259 Billion (USD 28 Billion) [source: company's annual report of the year 2006]. They are one of the leading players in the Indian operation.

The company markets their Laptop PCs to large customers directly. The accredited dealers supply and offer after sales service but the company was responsible for all the service. The researcher has chosen two business schools as direct customers where the company and its American competitor supply a very similar configuration of laptops.

9.6.1. Type of sample and size of sample

Total population of study was 360 and 300 students (who are users) respectively in the two Business Schools. Quota based sampling was undertaken to collect similar sample size of users. Getting this quota provided no bias to the study since it was observed, that the student population was more or less equally divided amongst the two brands.

We selected a sample of 33 and 29 randomly chosen from second year students numbering 180 and 150 from each of two Business Schools. This was done keeping in view that the second year students have a greater exposure to the product and hence in its service. Valid response came from 30 and 26 students from each of two Business Schools.

9.7. Regression and data analysis of survey results

We have stated the methodology of our study in chapter V. In this chapter we have recorded the survey conducted in six companies. The analysis of the data has been done using SPSS. Regression analysis has been administered. We have calculated mean and standard deviation, bivariate correlation, r; square of bivariate correlation, r^2; coefficient of multiple determination R^2; adjusted R^2; and F-statistic value.

All result of above analysis has been given in **Appendix M**

We now take the respective portion of analysis of data captured in above appendix for further analysis and interpretation

Table 9.1.Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.55	.859	409
Product Quality	4.76	.519	409
Price Fairness	4.16	1.085	409
Relationship Quality Transactional Aspect	3.96	.850	409
Relationship Quality Softer Aspect	4.30	.939	409
OMC	4.41	.983	409

The data analysis in Table 9.1 shows the central tendency, mean and the corresponding standard deviation of all variables under study. The mean of all variables are between

3.96 and 4.76 in five point Likert scale; hence we can conclude respondents are favorable to the questions. The standard deviation shows that the dispersion is very low, except price fairness is being somewhat higher stating the high degree of homogeneity or the coherence between the replies of the respondents.

Now we test the six hypotheses as follows.

The first hypothesis is:

H_{01}: There is a no relationship between 'product quality' and 'customer satisfaction'.
H_{a1}: There is a significant relationship between 'product quality' and 'customer satisfaction'.

Table 9.2 Regression Analysis of PQ and CS

Sr. No.		
1	r, of PQ and CS	.374
2	F calculated, of PQ and CS	66.270
3	F listed, of PQ and CS	6.63

at 1% level of significance

Serial numbers 1 to 3 of above Table 9.2 show correlation of PQ and CS is 0.374. F-calculated (66.270) is greater than F-listed (6.63) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.2 confirm that the H_{01} is rejected indicating there is a positive relationship of low degree between 'product quality' and 'customer satisfaction'.

The second hypothesis is:

H_{02}: There is no relationship between 'price fairness' and 'customer satisfaction'.

H_{a2}: There is a significant relationship between 'price fairness' and 'customer satisfaction'

Table 9.3 Regression Analysis of PF and CS

Sr. No.		
1	r, of PF and CS	.026
2	F calculated, of PF and CS	.279
3	F listed, of PF and CS	Can not be measured

at 59.8% level of significance

Serial numbers 1 to 3 of above Table 9.3 depict correlation of PF and CS is 0.026. F-calculated (0.279) at 59.8% level of significance using two tailed test, can not be inferred upon against F-listed.

These results of Table 9.1 and 9.3 confirm that the H_{02} can not be rejected, indicating that the results can not confirm that there is a significant positive relationship between 'price fairness' and 'customer satisfaction'; however there is positive relationship of very low degree exists.

The third set of hypotheses is:

$H_{03.1}$: There is no relationship between 'product quality' and 'price fairness'
$H_{a3.1}$: There is a significant relationship between 'product quality' and 'price fairness'

Table 9.4 Regression Analysis of PQ and PF

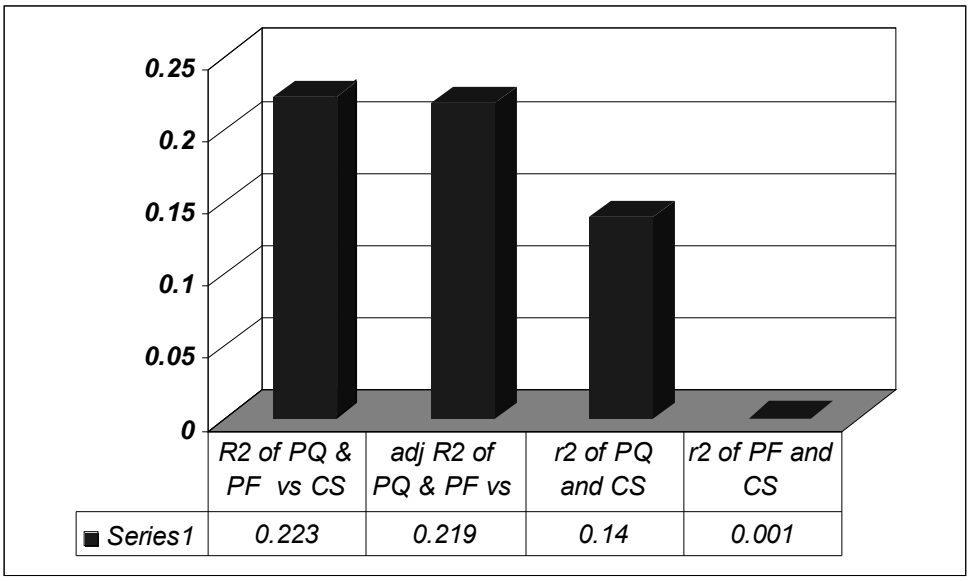
Sr. No.		
1.	r, of PQ and PF	.654
2.	F calculated, of PQ and PF	303.524
3.	F listed, of PQ and PF	6.63

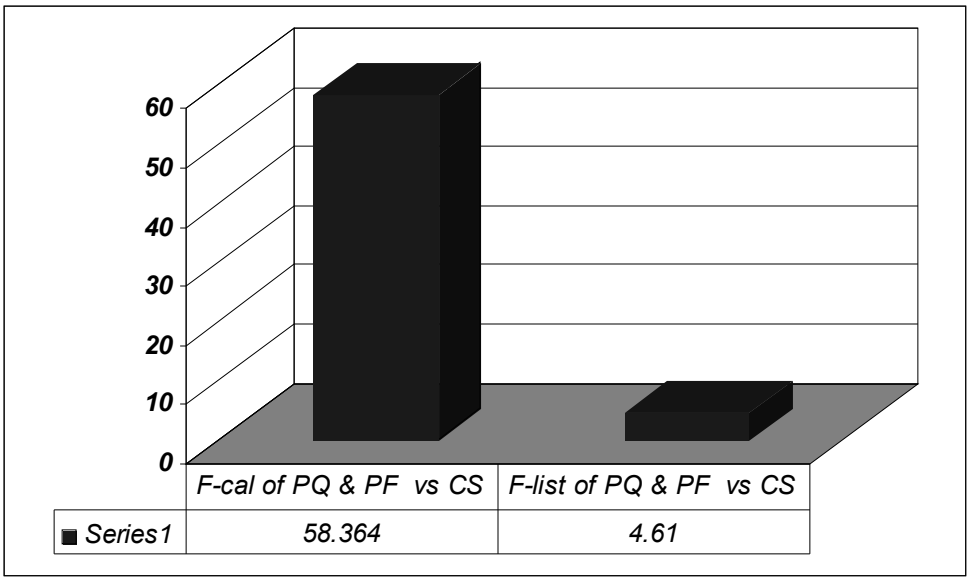
at 1% level of significance

Serial numbers 1 to 3 of above Table 9.4 illustrate correlation of PQ and PF is 0.654. F-calculated (303.524) is greater than F-listed (6.63) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.4 confirm that $H_{03.1}$ is rejected, indicating there is a positive relationship of moderate degree between 'product quality' and 'price fairness'.

$H_{03.2}$: There is no relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.
$H_{a3.2}$: There is a significant relationship between the combined effect of both 'product quality' and 'price fairness' on 'customer satisfaction'.





at 1% level of significance

Figure 9.1 Regression Analysis of PQ, PF, and CS

Above Figure 9.1 present that value of R^2 (0.223) is close to 'adjusted $R^{2'}$ of PQ & PF versus CS (0.219) and both are substantially higher than r^2 of PQ and CS (0.140) and r^2 of PF and CS (0.001). So we can conclude that the modeled relationship between PQ and CS derives more strength by the additional PF variable however smaller it may.

Figure 9.1 also reports that the calculated F (58.364) is greater than the listed F (4.61) at 01% level of significance using two tailed test.

These results of Table 9.1 and Figure 9.1 confirm that $H_{03.2}$ get rejected, indicating that the combined effect of 'product quality' and 'price fairness', has a greater effect on 'customer satisfaction' than individual effect of each one.

The fourth set of hypotheses is:

$H_{04.1}$: There is no relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

$H_{a4.1}$: There is a significant relationship between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

Table 9.5 Regression Analysis of RQTA and CS

Sr. No.		
1	r, of RQTA and CS	.800
2	F calculated, of RQTA and CS	722.257
3	F listed, of RQTA and CS	6.33

at 1% level of significance

The serial numbers 1 to 3 of above Table 9.5 report correlation of RQTA and CS is 0.800. F-calculated (722.257) is greater than F-listed (6.63) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.5 confirm that $H_{04.1}$ is rejected, indicating there is a significant positive relationship of high degree between 'relationship quality (transactional aspects)' and 'customer satisfaction'.

$H_{04.2}$: There is no relationship between 'relationship quality (softer aspects)' and 'customer satisfaction'.
$H_{a4.2}$: There is a significant relationship between 'relationship quality (softer aspects') *and 'customer satisfaction'.*

Table 9.6 Regression Analysis of RQSA and CS

Sr. No.		
1	r, of RQSA and CS	.824
2	F calculated, of RQSA and CS	859.665
3	F listed, of RQSA and CS	6.63

at 1% level of significance

The serial numbers 1 to 3 of above Table 9.6 Show correlation of RQSA and CS is 0.824. F-calculated (859.665) is greater than F-listed (6.63) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.6 confirm that $H_{04.2}$ is rejected, indicating there is a significant positive relationship of high degree between 'relationship quality (softer aspects)' and 'customer satisfaction'

H_{04}: There is no relationship between' relationship quality' and 'customer satisfaction'.
H_{a4}: There is a significant relationship between 'relationship quality' and 'customer satisfaction'.

Table 9.7 Regression Analysis of RQ (RQTA and RQSA together as independent variable) **and CS**

Sr. No.		
1	r, of RQ and CS	.851
2	F calculated, of RQ and CS	532.020
3	F listed, of RQ and CS	4.61

at 1% level of significance

The serial numbers 1 to 3 of above Table 9.7 depict correlation of RQ and CS is 0.851. F-calculated (532.020) is greater than F-listed (4.61) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.7 confirm that H_{04} is rejected indicating there is a significant positive relationship of high degree between 'relationship quality' and 'customer satisfaction'.

The fifth hypothesis is:

H_{05}: There is no relationship between 'order management cycle' and 'customer satisfaction'.

H_{a5}: There is a significant relationship between 'order management cycle' and 'customer satisfaction'.

Table 9.8 Regression Analysis of CS and OMC

Sr. No.		
1	r, of CS and OMC	.905
2	F calculated, of CS and OMC	1842.779
3	F listed, of CS and OMC	6.63

at 1% level of significance

The serial numbers 1 to 3 of Table 9.8 illustrate correlation of CS and OMC is 0.905. F-calculated (1842.779) is greater than F-listed (6.63) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.8 confirm that H_{05} is rejected indicating there is a significant positive relationship of high degree between 'order management cycle' and 'customer satisfaction'.

The sixth set of hypotheses is:

$H_{06.1}$: There is no relationship between 'relationship quality' and 'order management cycle'
$H_{a6.1}$: There is a significant relationship between 'relationship quality' and 'order management

Table 9.9 Regression Analysis of RQ and OMC

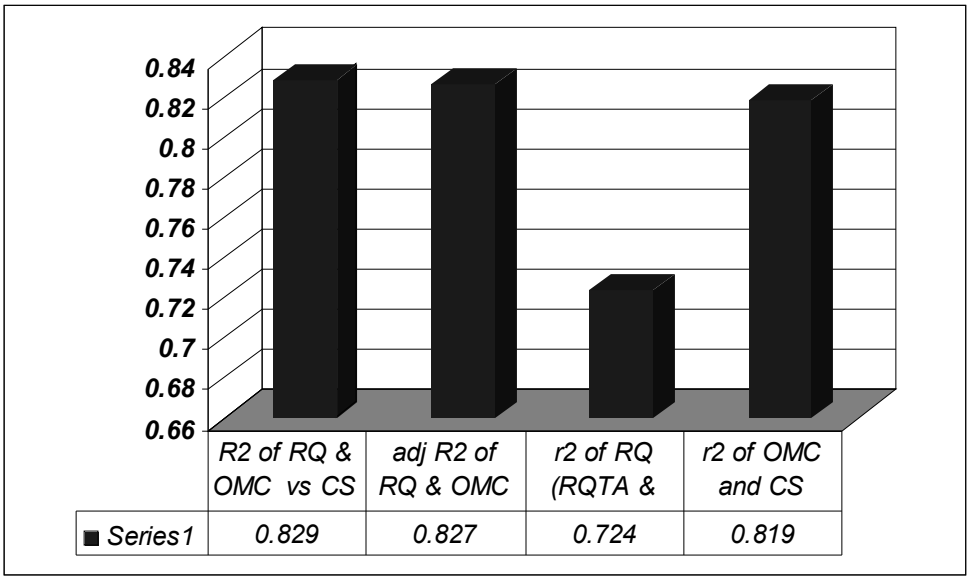
Sr. No.		
1.	r, of RQ (RQTA & RQSA) and OMC	.897
2.	F calculated, of RQ and OMC	836.692
3.	F listed, of RQ and OMC	4.61

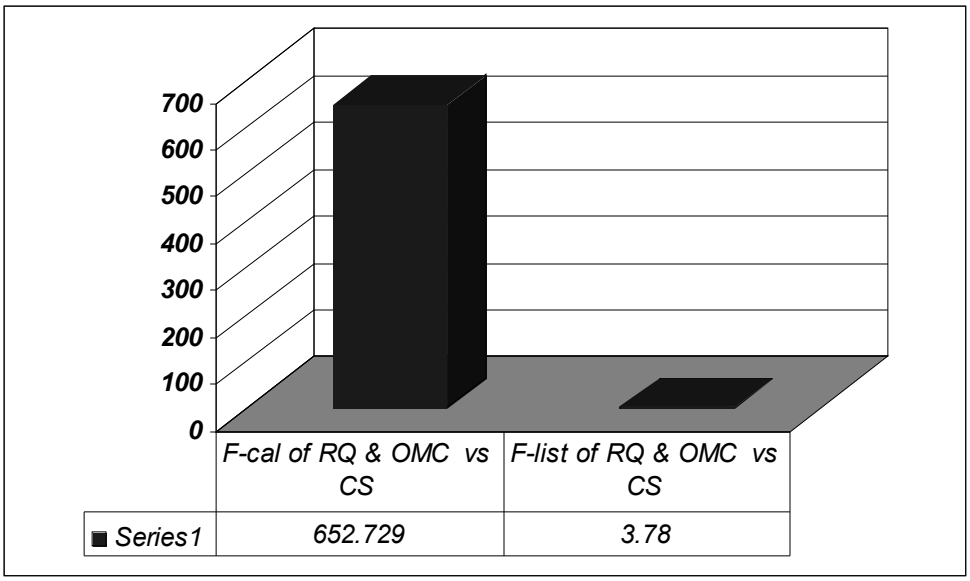
at 1% level of significance

The serial numbers 1 to 3 of above Table 9.9 present the correlation of RQ (RQTA & RQSA) and OMC is 0.897. F-calculated (836.692) is greater than F-listed (4.61) at 1% level of significance using two tailed test.

These results of Table 9.1 and 9.9 confirm that $H_{06.1}$ is rejected indicating there is a significant positive relationship of high degree between 'relationship quality' and 'order management cycle'.

$H_{06.2}$: There is no relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'
$H_{a6.2}$: There is a significant relationship between the combined effect of both 'relationship quality' and 'order management cycle' on 'customer satisfaction'.





at 1% level of significance

Figure 9.2 Regression Analysis of RQ (RQTA and RQSA together), OMC and CS

Figure 9.2 reports that value of 'adjusted $R^{2'}$ (0.827) is close to R^2 of RQ & OMC versus CS (0.829) and both are higher than r^2 of RQ and CS (0.724) and r^2 of OMC and CS (0.819). So we can conclude that the modeled relationship between OMC and CS derives more strength by the additional variables, RQ.

Figure 9.2 shows that the calculated F (652.729) is greater than the listed F (3.78) at 01% level of significance.

These results of Table 9.1 and Figure 9.2 confirm $H_{06.2}$ is rejected indicating that the combined effect of 'order management cycle' and 'relationship quality' has a greater impact on 'customer satisfaction' than individual impact of each one.

Summary of answers to open-ended questions and analysis there of are as follows:

1. Acceptable product quality is essential for purchase of a product, hence it plays lower degree of significant role in CS; corroborating with the regression.

2. Price and availability of credit help to get higher quantity of order in each transaction, but this way, the repeat purchase and CS cannot always be guaranteed.

3. If product quality is acceptable, customers look for lower price, in fact fair price is acceptable. If price is not fair, customers do not buy unless the supplier is monopoly or they require the product very urgently. Price is important but rarely plays any role in CS. This also corroborates the findings of regression.

4. Selling, at lowest price may attract many volatile customers but relationship plays important role to retain existing customers.

3. Customers prefer the company to explain the justification of price increase as they expect relationship, partnership approach from the company. This is not understood by many managers; they try to get CS by lowering the price. In fact customers look for relationship approach rather than lowering the price alone. This corroborates the findings of regression of high degree of relationship between RQ and CS.

4. Customers prefer an OMC which is not only efficient but also responsive in nature and interactive, and offer prompt service; this corroborates the findings of regression of high degree of relationship between OMC and CS.

5. When new technology products are introduced, customers are willing to pay higher price and tolerate deficiency in OMC; however RQ helps in accepting new products much easily.

Chapter X

INTERPRETATION

Having done the data collection and analysis of the pilot study, the longitudinal study and also the final in previous chapters, we now state the interpretation of all the studies, in this chapter.

10.1. Interpretation of findings of exploratory and pilot study (case study phase I and II)

In phase I of case studies of two companies in Crop and DiesEng, the researcher has observed customer satisfaction was due to product quality, performance, and after sales services but customer dissatisfaction was higher due to RQ and OMC. Customer dissatisfaction of OMC is specifically observed in Prioritization and scheduling; fulfillment; billing; returns, claims, and issuance of credit notes.

In phase II of case study (pilot study) of the same two companies, the researcher finds there is a high degree of positive relationship between PQ & CS, PF & CS, and PQ & PF; also the combined effect PQ and PF on CS is greater than individual effect of PQ and PF on CS. Managers of both the companies has been under impression that price being higher than market, is major source of dissatisfaction. But contrary to their belief in the open-ended questions, the researcher has found all respondents were not unhappy on PF; however some of them stated that their satisfaction would have been higher if price was a little less. The findings of open-ended questions tally the regression results as above.

There is a positive relationship between RQTA and CS is of moderate degree in Crop and of low degree in DiesEng. There is a positive relationship between RQSA and CS of high degree in Crop; but the relationship between these variables in DiesEng cannot be confirmed. There is a positive relationship between RQ and CS of high degree in Crop; the relationship between these variables in DiesEng cannot be confirmed.

RQTA and RQSA are components of RQ. The degree of relationship of any of the components as above on CS, has got an effect on the relationship between overall RQ and CS. The researcher notices the effect of components on main variable in both Crop and DiesEng. In open-ended question a good number of respondents of DiesEng expressed very high level of dissatisfaction on RQSA for the way and manner the price increase was handled by the manager, which reflects in the result of regression of RQSA with CS as well as RQ with CS.

The degree of relationship between OMC and CS is not same in two companies; the relationship between the variables is of positive moderate degree in Crop, and of a very low degree in DiesEng. The relationship between RQ and OMC is of high positive degree in both the companies. The combined effect of RQ and OMC on CS is greater than individual effects of RQ and OMC on CS in Crop; but same could not be confirmed in case of DiesEng.

Thus it can be interpreted that in the pilot study, similarity is observed in response in respect PQ and PF with CS in two companies but response is different in two companies in respect of RQ and OMC with CS. We can also infer that the variables, RQ and OMC themselves are highly correlated irrespective of degree of responses in different companies. Hence the combined effect of RQ and OMC on CS could vary depending upon the level of satisfaction in either of the two variables. But the combined effect of RQ and OMC is always greater than individual effects of them on CS in any company.

Though a single case study can provide a source of new hypothesis and constructs simultaneously [Cooper and Schindler, 2003], the above differences in findings justify our case study in two companies, helping us with some extent of generalization of our results [Green et. al., 2000].

10.2. Interpretation of findings of longitudinal study (case study phase III)

In the phase III we concentrated on the longitudinal case study spanning three years in the same two companies. Since two companies belong to two different industries, the researcher has attempted to interpret commonality and difference in each environment to arrive at generalization.

The researcher observes the high degree of homogeneity, or the coherence between the replies of the respondents over all the years. This helps the researcher to make more stable inferences about the relationship amongst the variables used in our study.

The researcher finds there is a high degree of relationship between PQ and CS, as well as between PQ and PF in both the companies in all the three years. In case of PF and CS there is high degree of relationship in both the companies in the years 2002 and 2003 but moderate in Crop in the year 2004. However the combined effect PQ and PF on CS is greater than individual effect of PQ and PF on CS in both the companies in all the three years.

The researcher has inferred that the degree of relationship between PQ and CS as well as between PF and CS can change depending upon the responses but PQ and PF are highly correlated in nature irrespective of degree of responses. Both PQ and PF can gain strength from each other.

In Crop, the relationship between RQTA and CS is moderate in the year 2002 and 2004; no such relationship could be confirmed in the year 2003. It is interesting to note that customers complained maximum regarding implementation SAP in open-ended question in the year 2003. But in DiesEng, there is a high positive relationship between RQTA and CS in all the three years. The relationship between RQSA and CS as well as between RQ and CS was moderate degree in Crop but of high degree in DiesEng in all the three years.

RQTA and RQSA being the components of RQ, we can interpret that the high degree of softer aspect of relationship (RQSA) has been able to overcome the shortcomings, if any, of transactional aspect of relationship (RQTA); and higher degree of contribution of RQ on CS has been reported.

The relationship between OMC and CS is of positive high degree in the year 2002 and 2003 and moderate degree in the year 2004 in Crop; but is of positive high degree in DiesEng for all the three years. The combined effect RQ and OMC is greater than individual effect of each one on CS for both the companies in all the years.

The researcher can interpret that degree may vary but OMC has always an impact on CS. We can also infer that RQ and OMC draw the strength from each other and combined effect of RQ and OMC is always greater than individual effect of each one on CS, irrespective of degree of association.

The researcher also notice that mean of CS has gone up from the year 2002 to 2004 in both the companies. But almost no change has been notice in PQ and PF over the years. Where as mean of RQ and OMC has progressively gone up over the years.

The researcher interprets that contribution RQ and OMC have made changes in CS. So we can further interpret that even there is no change in PQ and PF, CS can be increased by RQ and OMC.

It was observed that if the company controls the product quality and price fairness, there may or may not be any perceptible change towards a favorable customer satisfaction. However, if this is supplemented with a conscious improvement of the relationship quality (of either the transactional or softer or both forms), and order management cycle, it is bound to enhance customer satisfaction. Conversely, any short comings of 'relationship quality or any components there of' and 'order management cycle' can lead to lesser customer satisfaction.

10.3. Interpretation of findings of survey (phase IV)

In this phase IV, a survey was conducted on six chosen companies of three different industries. Findings of the phase III were extensively validated in this phase. We now attempt to interpret the results of survey of entire sample 409 of target population.

It has been found that there is a low degree of relationship between PQ and CS. No significant relationship could be confirmed between PQ and PF; a very low value (0.026) of positive relationship emerged. Thus there is only a positive, and moderate degree of relationship between PQ and PF. The combined effect PQ and PF on CS is greater than individual effect of PQ and PF on CS in both the companies in all the three years.

The researcher has inferred that the degree of relationship between PQ and CS as well as between PF and CS can change depending upon the responses but PQ and PF are highly correlated in nature irrespective of degree of responses. Both PQ and PF can gain strength from each other. The researcher can also interpret that the combined effect of PQ and PF is always greater than individual effect of each one on CS, irrespective of degree of association.

There is a positive high degree relationship between RQTA and CS well as between RQSA and CS. The relationship between RQ and CS is also positive high degree. The relationship between OMC and CS is of positive high degree. Combined effect RQ and OMC is greater than individual effect of each one on CS for both the companies in all the years.

The researcher can interpret that each of both components of RQ, overall RQ and OMC has contributed substantially to CS.

The researcher also can interpret that degree may vary but RQ and OMC always has an impact on CS. We can also infer that RQ and OMC draw the strength from each other and the combined effect of RQ and OMC is always greater than individual effects of each one of them on CS.

Now we advance to interpret the answers to the open-ended question.

1. It is not that the high quality product and low price generates CS, acceptable product quality and price fairness together contributes to CS.

2. Price and availability of credit help to get higher quantity of order in each transaction, but CS cannot always be guaranteed.

3. Customers do not get dissatisfied when there is a genuine need of price increase in a company; they prefer a relationship approach by the company for price increase.

4. An efficient OMC contributes to higher level CS. High level of RQ and both components (transactional and softer aspects) contributes to CS.

5. When new technology products are introduced, customers are willing to pay higher price and tolerate deficiency in OMC; however RQ helps in accepting new products much easily.

So the researcher infers that RQ and OMC has got a great impact on CS. Customers buy for PQ and PF; but CS is achieved by RQ and OMC. In fact RQ and OMC increases the level CS achieved with PQ and PF.

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Chapter XI

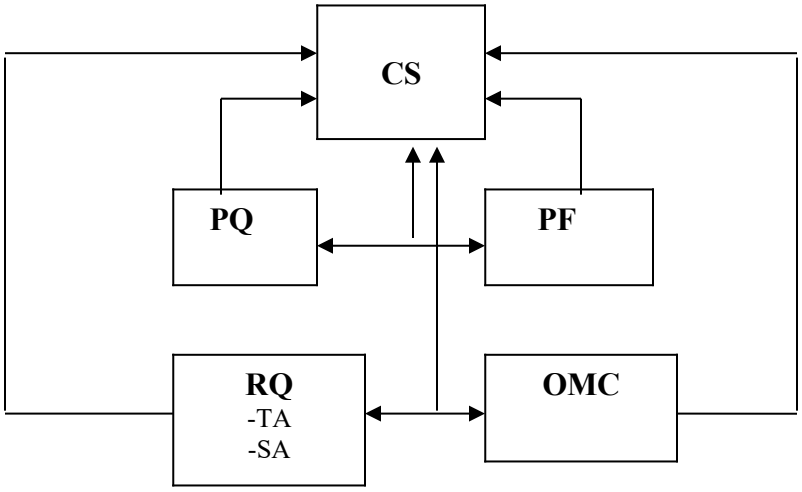
CONCLUSIONS

In this chapter on conclusions, we will now outline the recommendations, limitations of the study, specific contribution and future scope of work on the topic.

11.1. Recommendations

Customer Satisfaction is an outcome of (1) Product Quality, (2) Price Fairness, (3) the combined effect of Product Quality and Price Fairness, (4) Relationship Quality, (5) Order Management Cycle, and (6) the combined effect of Relationship Quality and Order Management Cycle.

Figure 11.1 Model



First, there is a positive relationship of low degree between 'product quality' and 'customer satisfaction'.

Second, there is an insignificant but positive relationship, between 'price fairness' and 'customer satisfaction'.

Third, there is a positive relationship of moderate degree, between 'product quality' and 'price fairness'

Fourth, the combined effect of ‘product quality’ and ‘price fairness’ has a greater effect on ‘customer satisfaction’ than the individual effects of each one.

Fifth, there is a significant positive relationship of high degree, between ‘relationship quality (transactional aspects)’ and ‘customer satisfaction’.

Sixth, there is a significant positive relationship of high degree, between ‘relationship quality (softer aspects’) and ‘customer satisfaction’.

Seventh, there is a significant positive relationship of high degree, between ‘relationship quality’ and ‘customer satisfaction’.

Eighth, there is a significant positive relationship of high degree, between ‘order management cycle’ and ‘customer satisfaction’.

Ninth, there is a significant positive relationship of high degree, between ‘relationship quality’ and ‘order management cycle’.

Tenth, the combined effect of ‘relationship quality’ and ‘order management cycle’, has a greater effect on ‘customer satisfaction’ than individual effect of each one.

The researcher would also like to recommend the following; these have emerged from the open ended questions during our study:

- When new technology products are introduced, customers are willing to pay higher price and tolerate deficiency in order management cycle; however it is the presence of relationship quality, which helps in accepting new products much easily.

- Price and offer of credit can help to get higher quantity of order, but this way, the customer satisfaction cannot always be guaranteed and more importantly sustained.
- Selling at lowest price may attract many volatile OEM customers, but it is the relationship quality which helps to retain existing customers.

In summary the researcher would like to state that 'product quality' and 'price fairness' alone are not the differentiating factors, in the evolved markets. For best differentiation, 'relationship quality' and 'order management cycle' need to be used together.

11.2. Limitations of the study

11.2.1. Two companies in each industry were studied; hence generalization of each industry is limited. Study of uniqueness of each industry could have been captured better with the study of more number of companies in each industry.

11.2.2. A prescriptive generalization in business-to-business market may also be limited due to the use of three specific industries, albeit all three of them have been high growth industries. A strict control and uniformity on the technical environment influencing them at that time was not possible by us. Hence there would be a possibility of differences at the (respective) industry level that could have crept into our results. So, there could be further research to propose better generalizations of the findings.

11.2.3. The demographic profile and the cultural background of the company under study might have influenced the perception of customer firms. In other words they may not show emphasis on certain aspects due to power equation amongst the company and the buying firm, and probably also due to lack of specific knowledge.

11.2.4. A number of customer firms of each vendor company, which contributes 20 percent or less in terms of revenue for the company, were not included in the sample especially when population of firms surveyed was large. In some cases, samples were

drawn from particular region, partly due to convenience sampling. They would have surely contributed to an otherwise avoidable variance in the data. In this context, the researcher feels, inclusion of all customer firms for sampling could have rendered our analysis statistically more acceptable, but probably could have deprived us from a timely extraction of the analysis.

11.2.5. Certain information on qualitative aspects could not be collected in the case study carried out by the researcher due to company's secrecy and fear of inadvertent dissemination by the competition. However the researcher could collect a lot of relevant information assuring not to divulge the name of the company in the dissertation. But, further information on the matter could have added more value to our findings and implications.

11.2.6. The researcher has tried to overcome the generic problem of snap shot data in the survey phase, by a longitudinal research over the period of three years. However the business environment was not constant during this period. The environment might have caused difference in the perception of customer firms and hence in the results.

11.2.7. This study has also the generic problem of surveys. There could be two aspects of the problem. In certain cases, the respondents of customer firms are knowledgeable and holding important position (say owner or the powerful executive get motivated/excited to respond instead of the regular purchase executive approached). So the question was whether the responses are comparable across the individuals and do they reflect real differences amongst the companies studied. Also, given a five-point Likert scale, there could also be inherent psychometric problems in perceived distances by each respondent of the point of her/his choice (very satisfied to very dissatisfied). However to overcome this problem, meaning of the questions were objectively explained to the respondents; still there could be differences in respondent interpretation and hence the findings due to this aspect.

11.3. Specific Contributions

Major contributions of the study are as follows:

11.3.1. It beats the common belief of practicing managers that Price Fairness alone is significant for achieving Customer Satisfaction.

11.3.2. The Price Fairness is one of the economic factors, which govern the purchase behavior of Decision Making Unit, and works in conjunction with other contributing factors

11.3.3. Relationship Quality and Order Management Cycle are interrelated and together they can further increase the level of Customer Satisfaction, which is already augmented due to perceived quality (arising out of Product Quality and Price Fairness).

11.3.4. Marketing companies need to focus on Product Quality, Price Fairness, Relationship Quality and Order Management Cycle together for sustained high level of Customer Satisfaction.

11.4. Future Scope of Work

From the above limitations of the study, we can identify the future scope of work in this field. These are:

11.4.1. To work towards providing further typological classification of the firms using additional demographic and cultural background, to strengthen the analysis of existing relationship.

11.4.2. The case study method is very important to set benchmarks for analysis. Accordingly replication of this research in number industry to complement the study could be conducted. Care has to be taken to ensure larger coverage of customer firms in the sample.

11.4.3. The study could be conducted in different industries, other than already studied in this research, to complement this study.

11.4.4. The study also could be undertaken in industries of various contexts e.g. low growth, high growth, market driven industries.

11.4.5. Further study could be carried out in various market structures e. g. highly competitive, oligopoly, and monopoly market.

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APPENDIX A

Preliminary questionnaire before Pre-testing

Questionnaire

Note: I, Prof. A. K. Dasbiswas is conducting his PhD study under BITS, Pilani. We are to get information relating to product and service offered by ------ to you. You are randomly selected as one of our valuable respondents. Kindly spare sometime to complete this questionnaire to help me proceed with the study. Information provided to us shall be treated strictly confidential and not related to anybody for any other purpose. This information is to be used for the academic analysis only.

Customer Satisfaction Survey questionnaires

General satisfaction

1.Based on your recent experience, how satisfied you with ----?	Very satisfied	Somewhat satisfied	Neither Satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied

2. Based on your recent experience, would buy again from ----? 3. Based on your recent experience, would you recommend to buy from ----?	Definitely yes	Probably yes	Might or might not	Probably not	Definitely not

Product Quality and Price

4. How satisfied you are with over all quality of ? a) Design/technology b) Consistent product reliability c) Meet all quality requirement	Very satisfied	Somewhat satisfied	Neither Satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied

	d) Price is competitive e) Priced appropriately for value received f) Price is comparable to previous price	Definitely yes	Probably Yes	Might or might not	Probably not	Definitely not
g)Provide	g) Provide functionality not readily available					
h)Operate	h) Operates and perform as expected					

Relationship Quality (Sales and Marketing Support)

5. How satisfied are you with ----- Sales and Marketing Managers and Executives a)Timeliness of response to your enquires b)Frequency of contact to review your needs c) Frequency of contact to provide technical/commercial information d) Product knowledge/value delivery e) Application knowledge f) Understanding your business needs g) Ability to offer tailored solution to your business needs h)Accuracy in explaining terms/conditions i) Ability to resolve	Very satisfied	Somewhat satisfied	Neither Satisfied nor dissatisfied	Somewhat dissatisfied	Very dis-satisfied

problem j) Clarify grey areas					

Customer support

6. What was the purpose of your most recent call? have not called/can't answer (skip to Q10)	Inquiry	Problem	have not called	can't answer	

7. How long ago did you make this call ---	Within 2 weeks	2-4 Weeks	1-2 months	2-6 months	More than 6 months

8. What function did you call	Sales	Marketing	Customer Service	Order Processing	Logistics(dispatch)
	Billing	Collection	Return &Claims	Telephone/1600	Internet

Relationship Quality (Soft Quality)

9. How satisfied are you with support you received? a) Ability to get the right person b) Attitude of ----- person who assisted you c) Ability to provide a solution	Very satisfied	Somewhat satisfied	Neither Satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied

d)Ability to keep promise e) Promptness f) Helpfulness g) Competent, skilled, having knowledge h) Empowered to take decision i) Respectful, friendly j)Effectiveness of the solution k)Overall satisfaction with support received					

Order Management Cycle

10. How satisfied you are in efficiency of management order cycle	Very satisfied	Somewhat satisfied	Neither Satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied
a) Discussion of Sales people regarding your yearly requirement/future project in advance b) Frequency of visit by Sales/Marketing people c) Timeliness of submission of estimate/pricing by sales people d) Intimation of receipt of order e) Intimation of expected date of delivery f) Intimation about change of scheduling, if any					

g) Timely receipt of Bill/Invoice h) Correctness of billing –quantitity, pricing as per promise/agreement i) Intimation about partial order despatch ----Timeliness j) Intimation about further balance dispatch k) Promptness of settling claims /credit note l) Promptness of After Sales Service ---Technical ---Commercial					

11.What specific things we do to increase satisfaction with -----. Our products, our service, our responsiveness/relationship quality, and our order cycle management?

Thank you for your feedback

Respondent ----------
Organization ----------
Position ----------
Date ----------
Investigator ----------

APPENDIX B

Final questionnaire

Questionnaire

Note: I, Prof. A. K. Dasbiswas is conducting his PhD study under BITS, Pilani. We are to get information relating to product and service offered by ------ to your firm. Your firm has been randomly selected as one of our valuable respondents. Kindly spare sometime to complete this questionnaire to help me proceed with the study. Information provided to us shall be treated strictly confidential and not related to anybody for any other purpose. This information is to be used for the academic analysis only.

Customer Satisfaction Survey questionnaires

Customer Satisfaction

General Satisfaction

1.Based on your recent experience, how satisfied you are with ----?	Very satisfied 5	Somewhat satisfied 4	Neither Satisfied nor dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1

Loyalty

2. Based on your recent experience, would buy again from ----? 3. Based on your recent experience, would you recommend others to buy from----?	Definitely Yes 5	Probably Yes 4	Might or might not 3	Probably not 2	Definitely not 1

Product Quality

	Very satisfied	Somewhat satisfied	Neither Satisfied nor	Somewhat dissatisfied	Very dissatisfied

	How satisfied you are with 4. Over all quality of product of ----? 5. Design/ Technology? 6. Consistent product reliability? 7. Meeting all quality requirements?	5 Definitely yes 5	4 Probably Yes 4	dissatisfied 3 Might or might not 3	2 Probably not 2	1 Definitely not 1
g)Provide 5. P5.5.	8. Functionality not readily available?					
h)Operate	9. Product's operations and performance against your expectation?					

Price Fairness

How satisfied you are with 10. Overall price fairness of ---? 11. Price competitiveness? 12. Appropriateness of price for	Very satisfied 5	Somewhat satisfied 4	Neither Satisfied nor dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1

value received? 13. Price comparing to previous price?					

Relationship Quality (transactional aspect)

How satisfied are you with ----- Sales and Marketing Managers and Executives (contact employees) in	Very satisfied 5	Somewhat satisfied 4	Neither Satisfied nor Dissatisfied 3	Somewhat dissatisfied 2	Very dis-satisfied 1
14.Timeliness of response to your enquires 15. Frequency of contact to review your needs 16. Frequency of contact to provide technical/commercial information 17. Product knowledge/value delivery 18. Application knowledge 19. Understanding your business needs 20. Ability to offer tailored solution to your business needs 21. Accuracy in explaining terms/conditions					

22. Ability to resolve problem 23. Clarifying grey areas					

Relationship Quality (Softer aspects)

How satisfied are you with	Very satisfied 5	Somewhat satisfied 4	Neither Satisfied nor dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1
24. In locating right person 25. Attitude of ----- employee who assisted you 26. Ability of employee to provide a solution 27. Ability of employee to keep promise 28. Promptness of employee 29. Helpfulness of employee 30. Competency, skill, and knowledge of employee 31. Empowerment of employee to take decision					

32. Respectful, friendly attitude of employee 33. Effectiveness of the solution provided by the employee 34. Overall support received					

Order Management Cycle

How satisfied you are in/with	Very satisfied 5	Somewhat satisfied 4	Neither Satisfied nor Dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1
35. Efficiency of discussion of Sales people regarding your yearly requirement/future project in advance 36. Frequency of visit by Sales/Marketing people 37. Timeliness of submission of estimate/pricing by sales people 38. Intimation of receipt of order 39. Intimation of expected date of delivery 40. Intimation about					

change of scheduling, if any 41. Timely receipt of Bill/Invoice 42. Correctness of billing –quantity, pricing as per promise/agreement 43. Intimation about partial order despatch ----Timeliness 44. Intimation about further balance dispatch 45. Promptness of settling claims /credit note 46. Promptness of After Sales Service ---Technical ---Commercial					

50. What specific things we need to do to increase satisfaction with -----. Our products, our service, our responsiveness/relationship quality, and our order cycle management? Or, any other aspect you feel will make more satisfied

Thank you for your feedback

Respondent ----------
Organization ----------
Position ----------
Date ----------
Investigator ----------

APPENDIX C

Statistics and Reliability Estimates in Specialty Chemical Company: Crop Protection Division (N=25)

Scale Items*		Mean	Standard Deviation	Cronbach's Alpha
Customer Satisfaction	1	4.4800	.82260	.9052
	2	4.6800	.55678	
	3	4.4000	.91287	
Product Quality	4	4.9600	.20000	.9136
	5	4.8800	.43970	
	6	4.6800	.69041	
	7	4.6800	.62716	
	8	4.6400	.70000	
	9	4.4800	.96264	
Price Fairness	10	4.7600	.59722	.9784
	11	4.3600	.95219	
	12	4.3600	.95219	
	13	4.3600	.95219	
Relationship Quality (TA)	14	4.4800	.71414	.9705
	15	2.7600	1.12842	
	16	2.6800	1.21518	
	17	4.4800	.71414	
	18	4.4000	.70711	
	19	3.7200	1.02144	
	20	3.7600	1.05198	
	21	2.7200	1.24231	
	22	3.6400	.95219	
	23	2.6400	1.22066	
Relationship Quality (SA)	24	3.1200	1.33292	.9828
	25	4.5600	.65064	
	26	4.5600	.65064	
	27	4.5600	.65064	
	28	4.5600	.65064	
	29	3.8400	.94340	

	30	3.1200	1.33292	
	31	3.1200	1.33292	
	32	3.1200	1.33292	
	33	3.8400	.94340	
	34	3.8400	.94340	
Order Management Cycle	35	2.5600	1.12101	.9774
	36	2.5600	1.12101	
	37	4.3200	.69041	
	38	3.6000	1.04083	
	39	3.7200	.89069	
	40	3.4400	.86987	
	41	2.5600	1.12101	
	42	4.8800	.33166	
	43	3.2000	1.08012	
	44	2.6800	1.21518	
	45	4.1200	.60000	
	46	4.2000	.64550	

APPENDIX D

Statistics and Reliability Estimates in Diesel Engine Manufacturing Company (N 24)

Scale Items*		Mean	Standard Deviation	Cronbach's Alpha
Customer Satisfaction	1	4.3750	.49454	.7383
	2	4.7500	.44233	
	3	4.0417	.85867	
Product Quality	4	4.8750	.33783	.9362
	5	4.1250	.94696	
	6	4.8750	.33783	
	7	4.2500	.67566	
	8	3.6250	1.13492	
	9	4.2500	.67566	
Price Fairness	10	4.8333	.38069	.9598
	11	4.2083	.72106	
	12	4.2083	.72106	
	13	4.2083	.72106	
Relationship Quality (TA)	14	4.9167	.28233	.9486
	15	3.5833	.92861	
	16	3.5833	.92861	
	17	4.9167	.28233	
	18	4.9167	.28233	
	19	4.9167	.46431	
	20	4.2083	.58823	
	21	4.2083	.58823	
	22	3.5000	1.02151	
	23	3.5000	1.02151	
Relationship Quality (SA)	24	3.6250	1.24455	.9658
	25	4.7917	41485	
	26	4.7500	.44233	
	27	4.7500	.44233	
	28	4.6667	.56466	
	29	4.1667	.86811	
	30	3.6667	1.20386	

	31	3.6250	1.24455	
	32	3.6250	1.24455	
	33	4.2917	.80645	
	34	4.3333	.76139	
Order Management Cycle	35	2.9583	.90790	.9478
	36	2.9583	.90790	
	37	4.6667	.48154	
	38	4.0000	.78019	
	39	3.6667	.86811	
	40	3.9167	.71728	
	41	2.9583	.90790	
	42	4.9167	.28233	
	43	3.7917	.72106	
	44	3.3750	1.09594	
	45	4.5000	.51075	
	46	4.5833	.50361	

APPENDIX E

Regression Result of Specialty Chemical Company: Crop Protection Division (Pilot Study) [N 25]

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.48	.823	25
Product Quality	4.72	.542	25
Price Fairness	4.32	.988	25
Relationship Quality TA	3.52	.918	25
Relationship Quality SA	3.84	.943	25
Order Management Cycle	3.44	.870	25

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.875(a)	.766	.756	.406

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.445	1	12.445	75.412	.000(a)
	Residual	3.795	23	.165		
	Total	16.240	24			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.726(a)	.527	.506	.578

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.554	1	8.554	25.597	.000(a)
	Residual	7.686	23	.334		
	Total	16.240	24			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797(a)	.635	.620	.334

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.473	1	4.473	40.089	.000(a)
	Residual	2.567	23	.112		
	Total	7.040	24			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877(a)	.768	.747	.413

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.479	2	6.240	36.503	.000(a)
	Residual	3.761	22	.171		
	Total	16.240	24			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.649(a)	.421	.396	.640

a Predictors: (Constant), Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.833	1	6.833	16.706	.000(a)
	Residual	9.407	23	.409		
	Total	16.240	24			

a Predictors: (Constant), Relationship Quality TA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694(a)	.481	.459	.605

a Predictors: (Constant), Relationship Quality SA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.815	1	7.815	21.334	.000(a)
	Residual	8.425	23	.366		
	Total	16.240	24			

a Predictors: (Constant), Relationship Quality SA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700(a)	.490	.443	.614

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.952	2	3.976	10.555	.001(a)
	Residual	8.288	22	.377		
	Total	16.240	24			

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.624(a)	.390	.363	.656

a Predictors: (Constant), Order Management Cycle

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.328	1	6.328	14.684	.001(a)
	Residual	9.912	23	.431		
	Total	16.240	24			

a Predictors: (Constant), Order Management Cycle
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.955(a)	.911	.903	.271

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.545	2	8.273	112.724	.000(a)
	Residual	1.615	22	.073		
	Total	18.160	24			

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Order Management Cycle

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700(a)	.490	.417	.628

a Predictors: (Constant), Order Management Cycle, Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.959	3	2.653	6.727	.002(a)
	Residual	8.281	21	.394		
	Total	16.240	24			

a Predictors: (Constant), Order Management Cycle, Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.884(a)	.781	.723	.433

a Predictors: (Constant), Order Management Cycle, Product Quality, Price Fairness, Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.678	5	2.536	13.525	.000(a)
	Residual	3.562	19	.187		
	Total	16.240	24			

a Predictors: (Constant), Order Management Cycle, Product Quality, Price Fairness, Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Customer Satisfaction

APPENDIX F

Regression Result of Diesel Engine Manufacturing Company (Pilot Study) [N 24]

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.38	.495	24
Product Quality	4.25	.676	24
Price Fairness	4.21	.721	24
Relationship Quality TA	4.21	.588	24
Relationship Quality SA	4.21	.779	24
Order Management Cycle	4.71	.464	24

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.878(a)	.771	.761	.242

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.339	1	4.339	74.250	.000(a)
	Residual	1.286	22	.058		
	Total	5.625	23			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869(a)	.755	.744	.250

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.245	1	4.245	67.687	.000(a)
	Residual	1.380	22	.063		
	Total	5.625	23			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

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

1	.959(a)	.920	.917	.195

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.664	1	9.664	254.238	.000(a)
	Residual	.836	22	.038		
	Total	10.500	23			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.883(a)	.780	.759	.243

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.387	2	2.194	37.227	.000(a)
	Residual	1.237	21	.059		
	Total	5.625	23			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467(a)	.218	.183	.447

a Predictors: (Constant), Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.227	1	1.227	6.138	.021(a)
	Residual	4.398	22	.200		
	Total	5.625	23			

a Predictors: (Constant), Relationship Quality TA
b Dependent Variable: Customer Satisfaction

Model Summary

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

1	.353(a)	.124	.085	.473

a Predictors: (Constant), Relationship Quality SA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.700	1	.700	3.125	.091(a)
	Residual	4.925	22	.224		
	Total	5.625	23			

a Predictors: (Constant), Relationship Quality SA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467(a)	.218	.144	.458

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.227	2	.614	2.930	.075(a)
	Residual	4.398	21	.209		
	Total	5.625	23			

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497(a)	.247	.213	.439

a Predictors: (Constant), Order Management Cycle

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.390	1	1.390	7.219	.013(a)
	Residual	4.235	22	.193		
	Total	5.625	23			

a Predictors: (Constant), Order Management Cycle
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.778(a)	.606	.568	.305

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.003	2	1.501	16.124	.000(a)
	Residual	1.955	21	.093		
	Total	4.958	23			

a Predictors: (Constant), Relationship Quality SA, Relationship Quality TA
b Dependent Variable: Order Management Cycle

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603(a)	.364	.269	.423

a Predictors: (Constant), Order Management Cycle, Relationship Quality TA, Relationship Quality SA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.048	3	.683	3.817	.026(a)
	Residual	3.577	20	.179		
	Total	5.625	23			

a Predictors: (Constant), Order Management Cycle, Relationship Quality TA, Relationship Quality SA
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.909(a)	.826	.777	.233

a Predictors: (Constant), Order Management Cycle, Relationship Quality TA, Product Quality, Relationship Quality SA, Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.645	5	.929	17.062	.000(a)
	Residual	.980	18	.054		
	Total	5.625	23			

a Predictors: (Constant), Order Management Cycle, Relationship Quality TA, Product Quality, Relationship Quality SA, Price Fairness
b Dependent Variable: Customer Satisfaction

APPENDIX G

Regression Result of Longitudinal Study of Specialty Chemical:

Crop Protection Division for the Year 2002 (N 50)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.50	.814	50
Product Quality	4.72	.536	50
Price Fairness	3.84	1.131	50
Relationship Quality Transactional Aspect	4.08	.488	50
Relationship Quality Softer Aspect	4.40	.495	50
OMC	4.28	.730	50

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888(a)	.789	.785	.378

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.639	1	25.639	179.379	.000(a)
	Residual	6.861	48	.143		
	Total	32.500	49			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820(a)	.672	.665	.472

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.827	1	21.827	98.166	.000(a)
	Residual	10.673	48	.222		
	Total	32.500	49			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

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

1	.732(a)	.536	.527	.369

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.549	1	7.549	55.488	.000(a)
	Residual	6.531	48	.136		
	Total	14.080	49			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922(a)	.851	.844	.321

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.644	2	13.822	133.772	.000(a)
	Residual	4.856	47	.103		
	Total	32.500	49			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.513(a)	.263	.248	.706

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.562	1	8.562	17.167	.000(a)
	Residual	23.938	48	.499		
	Total	32.500	49			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

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

1	.506(a)	.256	.241	.710

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.333	1	8.333	16.552	.000(a)
	Residual	24.167	48	.503		
	Total	32.500	49			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581(a)	.337	.309	.677

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.968	2	5.484	11.970	.000(a)
	Residual	21.532	47	.458		
	Total	32.500	49			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790(a)	.624	.616	.504

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.284	1	20.284	79.699	.000(a)
	Residual	12.216	48	.255		
	Total	32.500	49			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843(a)	.710	.698	.401

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.519	2	9.259	57.555	.000(a)
	Residual	7.561	47	.161		
	Total	26.080	49			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825(a)	.681	.661	.474

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.146	3	7.382	32.796	.000(a)
	Residual	10.354	46	.225		
	Total	32.500	49			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

APPENDIX H

Regression Result of Longitudinal Study of Specialty Chemical:

Crop Protection Division for the Year 2003 (N 48)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.67	.595	48
Product Quality	4.71	.582	48
Price Fairness	3.96	1.071	48
Relationship Quality Transactional Aspect	4.17	.377	48
Relationship Quality Softer Aspect	4.50	.505	48
OMC	4.31	.689	48

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941(a)	.886	.884	.203

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.771	1	14.771	358.512	.000(a)
	Residual	1.895	46	.041		
	Total	16.667	47			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.812(a)	.659	.652	.352

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.982	1	10.982	88.865	.000(a)
	Residual	5.685	46	.124		
	Total	16.667	47			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.765(a)	.586	.577	.379

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.320	1	9.320	64.992	.000(a)
	Residual	6.597	46	.143		
	Total	15.917	47			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952(a)	.906	.902	.186

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.107	2	7.553	217.924	.000(a)
	Residual	1.560	45	.035		
	Total	16.667	47			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.253(a)	.064	.044	.582

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.067	1	1.067	3.145	.083(a)
	Residual	15.600	46	.339		
	Total	16.667	47			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.566(a)	.320	.305	.496

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.333	1	5.333	21.647	.000(a)
	Residual	11.333	46	.246		
	Total	16.667	47			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.566(a)	.320	.290	.502

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.333	2	2.667	10.588	.000(a)
	Residual	11.333	45	.252		
	Total	16.667	47			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.726(a)	.527	.517	.414

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.784	1	8.784	51.264	.000(a)
	Residual	7.882	46	.171		
	Total	16.667	47			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.830(a)	.689	.675	.393

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.375	2	7.687	49.865	.000(a)
	Residual	6.938	45	.154		
	Total	22.313	47			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.732(a)	.536	.505	.419

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.937	3	2.979	16.957	.000(a)
	Residual	7.730	44	.176		
	Total	16.667	47			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.954(a)	.910	.899	.189

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Product Quality, Relationship Quality Softer Aspect, Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.165	5	3.033	84.825	.000(a)
	Residual	1.502	42	.036		
	Total	16.667	47			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Product Quality, Relationship Quality Softer Aspect, Price Fairness
b Dependent Variable: Customer Satisfaction

APPENDIX I

Regression Result of Longitudinal Study of Specialty Chemical: Crop Protection Division for the Year 2004 (N 50)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.90	.303	50
Product Quality	4.76	.517	50
Price Fairness	3.88	1.118	50
Relationship Quality Transactional Aspect	4.70	.463	50
Relationship Quality Softer Aspect	4.60	.495	50
OMC	4.80	.404	50

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755(a)	.570	.561	.201

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.564	1	2.564	63.572	.000(a)
	Residual	1.936	48	.040		
	Total	4.500	49			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.566(a)	.320	.306	.252

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.442	1	1.442	22.632	.000(a)
	Residual	3.058	48	.064		
	Total	4.500	49			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725(a)	.526	.516	.360

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.898	1	6.898	53.216	.000(a)
	Residual	6.222	48	.130		
	Total	13.120	49			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755(a)	.571	.552	.203

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.567	2	1.284	31.218	.000(a)
	Residual	1.933	47	.041		
	Total	4.500	49			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.509(a)	.259	.244	.264

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.167	1	1.167	16.800	.000(a)
	Residual	3.333	48	.069		
	Total	4.500	49			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408(a)	.167	.149	.280

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.750	1	.750	9.600	.003(a)
	Residual	3.750	48	.078		
	Total	4.500	49			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.509(a)	.259	.228	.266

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.167	2	.583	8.225	.001(a)
	Residual	3.333	47	.071		
	Total	4.500	49			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.667(a)	.444	.433	.228

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.000	1	2.000	38.400	.000(a)
	Residual	2.500	48	.052		
	Total	4.500	49			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764(a)	.583	.566	.266

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.667	2	2.333	32.900	.000(a)
	Residual	3.333	47	.071		
	Total	8.000	49			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.667(a)	.444	.408	.233

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.000	3	.667	12.267	.000(a)
	Residual	2.500	46	.054		
	Total	4.500	49			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.772(a)	.597	.551	.203

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.685	5	.537	13.019	.000(a)
	Residual	1.815	44	.041		
	Total	4.500	49			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

APPENDIX J

Regression Result of Longitudinal Study of Diesel Engine Manufacturing Company for the Year 2002 (N 30)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	3.93	.691	30
Product Quality	4.53	.776	30
Price Fairness	4.30	.988	30
Relationship Quality Transactional Aspect	3.60	.675	30
Relationship Quality Softer Aspect	4.40	.498	30
OMC	4.23	1.135	30

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711(a)	.506	.488	.495

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.012	1	7.012	28.640	.000(a)
	Residual	6.855	28	.245		
	Total	13.867	29			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.787(a)	.620	.607	.434

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.599	1	8.599	45.712	.000(a)
	Residual	5.267	28	.188		
	Total	13.867	29			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.909(a)	.825	.819	.330

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.418	1	14.418	132.440	.000(a)
	Residual	3.048	28	.109		
	Total	17.467	29			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788(a)	.620	.592	.442

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.601	2	4.300	22.050	.000(a)
	Residual	5.266	27	.195		
	Total	13.867	29			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754(a)	.568	.553	.462

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.882	1	7.882	36.875	.000(a)
	Residual	5.985	28	.214		
	Total	13.867	29			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681(a)	.463	.444	.516

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.422	1	6.422	24.155	.000(a)
	Residual	7.444	28	.266		
	Total	13.867	29			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.784(a)	.615	.586	.445

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.528	2	4.264	21.564	.000(a)
	Residual	5.339	27	.198		
	Total	13.867	29			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767(a)	.589	.574	.451

a Predictors: (Constant), OMC

nt), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.165	1	8.165	40.092	.000(a)
	Residual	5.702	28	.204		
	Total	13.867	29			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758(a)	.574	.543	.767

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.462	2	10.731	18.218	.000(a)
	Residual	15.904	27	.589		
	Total	37.367	29			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.835(a)	.697	.662	.402

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.667	3	3.222	19.951	.000(a)
	Residual	4.199	26	.162		
	Total	13.867	29			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839(a)	.704	.642	.414

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Product Quality, Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.759	5	1.952	11.402	.000(a)
	Residual	4.108	24	.171		
	Total	13.867	29			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Product Quality, Price Fairness
b Dependent Variable: Customer Satisfaction

APPENDIX K

Regression Result of Longitudinal Study of Diesel Engine Manufacturing Company for the Year 2003 (N 26)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.08	.688	26
Product Quality	4.69	.471	26
Price Fairness	4.62	.496	26
Relationship Quality Transactional Aspect	3.69	.679	26
Relationship Quality Softer Aspect	4.50	.510	26
OMC	4.50	.762	26

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693(a)	.481	.459	.506

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.693	1	5.693	22.208	.000(a)
	Residual	6.153	24	.256		
	Total	11.846	25			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.676(a)	.457	.434	.518

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.409	1	5.409	20.164	.000(a)
	Residual	6.437	24	.268		
	Total	11.846	25			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843(a)	.711	.699	.258

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.938	1	3.938	59.077	.000(a)
	Residual	1.600	24	.067		
	Total	5.538	25			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.714(a)	.509	.467	.503

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.034	2	3.017	11.938	.000(a)
	Residual	5.813	23	.253		
	Total	11.846	25			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737(a)	.543	.524	.475

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.433	1	6.433	28.520	.000(a)
	Residual	5.413	24	.226		
	Total	11.846	25			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684(a)	.468	.445	.513

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.538	1	5.538	21.073	.000(a)
	Residual	6.308	24	.263		
	Total	11.846	25			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.752(a)	.565	.528	.473

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.698	2	3.349	14.963	.000(a)
	Residual	5.148	23	.224		
	Total	11.846	25			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763(a)	.582	.565	.454

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.897	1	6.897	33.441	.000(a)
	Residual	4.950	24	.206		
	Total	11.846	25			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719(a)	.517	.475	.552

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.500	2	3.750	12.321	.000(a)
	Residual	7.000	23	.304		
	Total	14.500	25			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.818(a)	.668	.623	.423

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.919	3	2.640	14.787	.000(a)
	Residual	3.927	22	.179		
	Total	11.846	25			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836(a)	.699	.624	.422

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Product Quality, Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.285	5	1.657	9.306	.000(a)
	Residual	3.561	20	.178		
	Total	11.846	25			

a Predictors: (Constant), OMC, Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect, Product Quality, Price Fairness
b Dependent Variable: Customer Satisfaction

APPENDIX L

Regression Result of Longitudinal Study of Diesel Engine Manufacturing Company for the Year 2004 (N 27)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.22	.751	27
Product Quality	4.70	.465	27
Price Fairness	4.59	.694	27
Relationship Quality Transactional Aspect	4.15	.602	27
Relationship Quality Softer Aspect	4.63	.742	27
OMC	4.63	.492	27

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746(a)	.556	.539	.510

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.160	1	8.160	31.353	.000(a)
	Residual	6.507	25	.260		
	Total	14.667	26			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771(a)	.594	.578	.488

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.714	1	8.714	36.597	.000(a)
	Residual	5.953	25	.238		
	Total	14.667	26			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922(a)	.850	.844	.184

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.786	1	4.786	141.914	.000(a)
	Residual	.843	25	.034		
	Total	5.630	26			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.776(a)	.602	.569	.493

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.835	2	4.418	18.181	.000(a)
	Residual	5.832	24	.243		
	Total	14.667	26			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.776(a)	.602	.586	.483

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.824	1	8.824	37.758	.000(a)
	Residual	5.843	25	.234		
	Total	14.667	26			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775(a)	.601	.585	.484

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.809	1	8.809	37.598	.000(a)
	Residual	5.858	25	.234		
	Total	14.667	26			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855(a)	.731	.708	.406

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.719	2	5.359	32.578	.000(a)
	Residual	3.948	24	.165		
	Total	14.667	26			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.752(a)	.565	.547	.505

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.284	1	8.284	32.450	.000(a)
	Residual	6.382	25	.255		
	Total	14.667	26			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694(a)	.481	.438	.369

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.029	2	1.515	11.127	.000(a)
	Residual	3.267	24	.136		
	Total	6.296	26			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.885(a)	.783	.755	.372

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.483	3	3.828	27.651	.000(a)
	Residual	3.184	23	.138		
	Total	14.667	26			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.896(a)	.802	.755	.372

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect, Product Quality, Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.767	5	2.353	17.041	.000(a)
	Residual	2.900	21	.138		
	Total	14.667	26			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect, Product Quality, Price Fairness
b Dependent Variable: Customer Satisfaction

APPENDIX M

Regression Result of Survey of Six Companies (N 409)

Descriptive Statistics

	Mean	Std. Deviation	N
Customer Satisfaction	4.55	.859	409
Product Quality	4.76	.519	409

Price Fairness	4.16	1.085	409
Relationship Quality Transactional Aspect	3.96	.850	409
Relationship Quality Softer Aspect	4.30	.939	409
OMC	4.41	.983	409

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.374(a)	.140	.138	.798

a Predictors: (Constant), Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.193	1	42.193	66.270	.000(a)
	Residual	259.128	407	.637		
	Total	301.320	408			

a Predictors: (Constant), Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.026(a)	.001	-.002	.860

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.206	1	.206	.279	.598(a)
	Residual	301.114	407	.740		
	Total	301.320	408			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654(a)	.427	.426	.393

a Predictors: (Constant), Price Fairness

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.

1	Regression	46.988	1	46.988	303.524	.000(a)
	Residual	63.007	407	.155		
	Total	109.995	408			

a Predictors: (Constant), Price Fairness
b Dependent Variable: Product Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473(a)	.223	.219	.759

a Predictors: (Constant), Price Fairness, Product Quality

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.287	2	33.643	58.364	.000(a)
	Residual	234.033	406	.576		
	Total	301.320	408			

a Predictors: (Constant), Price Fairness, Product Quality
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.800(a)	.640	.639	.517

a Predictors: (Constant), Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192.720	1	192.720	722.257	.000(a)
	Residual	108.600	407	.267		
	Total	301.320	408			

a Predictors: (Constant), Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824(a)	.679	.678	.488

a Predictors: (Constant), Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.

1	Regression	204.501	1	204.501	859.665	.000(a)
	Residual	96.819	407	.238		
	Total	301.320	408			

a Predictors: (Constant), Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851(a)	.724	.722	.453

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	218.101	2	109.050	532.020	.000(a)
	Residual	83.220	406	.205		
	Total	301.320	408			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.905(a)	.819	.819	.366

a Predictors: (Constant), OMC

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	246.809	1	246.809	1842.779	.000(a)
	Residual	54.511	407	.134		
	Total	301.320	408			

a Predictors: (Constant), OMC
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897(a)	.805	.804	.436

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	317.575	2	158.788	836.692	.000(a)
	Residual	77.051	406	.190		

	Total	394.626	408			

a Predictors: (Constant), Relationship Quality Softer Aspect, Relationship Quality Transactional Aspect
b Dependent Variable: OMC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910(a)	.829	.827	.357

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	249.680	3	83.227	652.729	.000(a)
	Residual	51.640	405	.128		
	Total	301.320	408			

a Predictors: (Constant), OMC, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918(a)	.843	.841	.342

a Predictors: (Constant), OMC, Price Fairness, Product Quality, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	254.089	5	50.818	433.602	.000(a)
	Residual	47.231	403	.117		
	Total	301.320	408			

a Predictors: (Constant), OMC, Price Fairness, Product Quality, Relationship Quality Transactional Aspect, Relationship Quality Softer Aspect
b Dependent Variable: Customer Satisfaction

List of Publications and Presentations

1. Dasbiswas, A. K. and Das, S., 2007. A Study of the Relationship between Order Management Cycle and Customer Satisfaction in a Specialty Chemical Company. *The Icfai Journal of Marketing Management.* Vol VI. No 3, August, pp. 22-37.

2. Dasbiswas, A. K. and Das, S., 2007. Building Customer Satisfaction by Managing the Order Cycle: A Pilot Study in Engineering Company. *The Icfai Journal of Consumer Behavior.* Vol II. No 3, September, pp. 14-21.

3. Dasbiswas, A. K., 2007. Impact of Order Management Cycle in Seamless Steel Tube Manufacturing Company: A case study. *Innovations in Management Practices* pp. 37-44 (selected papers published from presentations in 7th National Conference in "Innovations in Management Practices" held on September 10-11, 2007 at Gurukul Kangri University, Haridwar) published by Macmillion India Limited, New Delhi.

Brief Biography of the Candidate

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Date of birth : November 3, 1943

Qualification : Passed Associateship examination of Institution of Chemists (India), Post Graduate Diploma [equivalent to M.Sc. degree in chemistry by CSIR, Govt of India] in the year 1970 with 69.3% of marks securing 8th rank on all India basis.

Passed Advanced Diploma in Management Research in the specialized area of Marketing Management.

Attended several Management Development Program of IIMs etc in functional as well as behavioral areas.

Successfully completed Executive Education Program of Columbia University Business School, New York, USA.

Pursuing Doctoral Program with BITS, Pilani. Final submission of Thesis, on "**Customer Satisfaction in Business-to-Business Marketing: An Analysis of the Role of Relationship Quality and Order Management Cycle"** have been done.

Experience : 34 years in industry and 11 years in academics.

34 years of experience in FMCG and Pharmaceutical (ethical and OTC), Consumer Durable and in Business to Business Marketing (Chemicals, Specialty Chemicals, Water-proofing, Road building, Protective Coating, Paints, Industrial System and Projects)

Out of above experience as SBU chief for 14 years. Head of Marketing for 6 years. 6 years in various position in Sales and Marketing from District Manager level to Regional Sales Manager. 8 years in Quality Assurance and Research and Development.

Since 1997, also undertaking consultancy assignments and conducting various training programs, workshops, seminars in the area of Marketing and general Management. Some of my clients are : **Mafatlal Industries, SKF Bearings, Herdillia, HOC, Tata Donnelley, Godrej Reliance Industries, Wartsila, ISSAL/ISMT, BASF, Wochardt, GSK, EID Parry etc.**

2005 onwards : Dean and Director, Institute for Technology and Management; current position is Dean of the campus. Professor of Marketing and Strategy.

1998 (Oct)–2005(Jan): Professor and coordinator for Marketing area at S. P.Jain Institute of Management and Research, Mumbai. Marketing Management, Marketing Strategy, Business to Business Marketing, and Services Marketing courses are of my special interest.

!997(Jun) – 1998(Sep): Professor and Faculty Advisor at Institute of Technology and Management, Mumbai.

Prior to 1997 and since 1987, while working in the industry I have been teaching as Visiting Faculty for MBA level course at IISWBM, Calcutta University; NMIMS, Mumbai University; SYMBIOSIS, Pune; IES, Mumbai and ITM,Mumbai.

1996 Jan) – 1997(Jun): As Vice-President, Commercial of Herdillia Unimers/Polymers Limited (Duncan-Goenka Group).

1993-1995 : As Executive Vice President and COO of STP Limited (Turner Morrison Group).

1992-1993 : As Vice President of Mangalam Timber Products Ltd (B.K.Birla Group)

1990-1992	: As General Manager, Marketing of Shalimar Paints Ltd (International Paints, UK; later on Jindal Group)
!984 – 1990	: Joined as Divisional Manager and SBU Chief and promoted in 1987 as General Manager, Operation and COO of STP Limited (Turner Morrison Group)
1980 – 1983	: As General Manager, Marketing, personnel and Production of Neo-Pharma Ltd (German Collaborated firm)
1978 – 1980	:As Dy Marketing Manager of Kemp and Company Ltd (A Piramal Group company)
!963 – 1978	: As Regional Sales manager; Field Manager; and Executive, R&D of Smith Stanistreet & co Ltd (Turner Morrison Group)

While in Corporate, I was Chairman/members of working Committee of various Business and Trade Associations e.g. Indian Pharmaceutical Association, Indian Chemical Manufacturers Association, ASSOCHAM, Bengal Chamber of Commerce and Industries, Indo American Chamber of Commerce.
Led the trade delegation to the Government of India; traveled various countries for business discussion.

Brief Biography of the Supervisor

1.	Name	:	Dr. Suranjan Das
2.	Present Designation	:	Professor
	Official Address	:	S.P. Jain Institute of Management & Research Munshi Nagar, Dadabhai Road [Bhavan's Campus] Andheri (West) Mumbai 400 058
	Telephone Number	:	+91.22.26237454 (Work)
	E-mail address	:	suranjan@spjimr.org
3.	Permanent Address	:	Flat 6D, Gera Riverside Popular Heights Road, Koregaon Park Pune 411001, Maharashtra
4.	Date of birth	:	January 26, 1962

5. Education :
   : H.S.C. Cotton College, Guwahati, BSE Assam1977
   : B.Sc. Econ(Hons), St.Xavier's College, Kolkata 1984
   : M.Sc. Econ. Calcutta University, Kolkata 1986
   : Fellow in Management, IIM Ahmedabad 1997

6. Academic distinction attained: National Scholarships in Std X, XII and B.Sc.

7. Professional career beyond Master's degree to present date :
   1. Full-time faculty at Goa Institute of Management, Ribandar, Goa, India [1997 to 2003]
   2. Visiting Faculty at IIM (Indore & Kolkata), Antwerp University, Erasmus University at Rotterdam, ICFAI Ahmedabad Chapter, Goa University [1995 to 2004]
   3. Sales Manager, in the Electronics Industry– 1995-96 (Retail chain, Distributors, OEM, Trade Fairs by ECMA); Commercial Manager in Steel Industry– 1996-98 (Materials mgmt, Purchase, Imports, Logistics); Special Team Member for Computerization Project, in the Steel Industry– 1998-99 (of Hospital inventory, of Materials Mgmt functions)

8.	Broad field of research in	:	Application of Quantitative Methods Business, Consumer Behavior, Marketing Models and New Product Innovations.
9.	Publications : give titles of papers, names of journals and Society, dates of publications	: : :	1. Presented papers at Operational Research India, 1996 to 2001. 2. Presented papers at Millennium R&D Conference, India, 2000 3. Attended Exchange programs at Belgium and Netherlands, 1997, 98. 4. Presented paper at Rotterdam; Target Costing in Japanese Industry- A technology based perspective 5. Presented paper at IIM Bangalore; Modelling the deployment of special purpose railway wagons in India, 1999 6. Awarded a World Bank Nomination for India Group, for the ABCDE (Annual Bank Conference on Development Economics) at Washington DC, 1998. 7. Papers presented to the Development Economics Research Group at World Bank HQ, Washington DC and at Harvard University, 1997, 98. 8. Presented paper at National Strategic Management Conferences, India, 2002, 2003. 9. Paper presented at the UTI Institute of Capital Markets, India, 2002
10.	Consultancy and Projects	:	1. Melvin Goldman World Bank Technology Project for 7-products in 7-countries in Asia (World Bank &ICICI funded. Consultancy Coordinated by IIM Ahmedabad) 2. Consultancy projects of Telecommunication Industry in India. 3. Associated with the TRAI Research Committee from IIM Ahmedabad

			4. Intercity Freight Transportation (Case paper). Modeling the movement of NDDB milk tankers in India 5. Augmenting network data management for Circle Traffic Volume Analysis by Mobile operators in India 6. Branch consolidation for Portals of Business World featured successful portals in India (g)Supporting New Product Innovation at Tata Motors
11.	Patents obtained	:	Nil
12.	Visits abroad	:	Has taught at management institutes in Europe under faculty exchange programs at Erasmus University, Rotterdam and UFSIA, Belgium. Participated at World Bank seminars and research studies.
13.	Membership of professional services	:	ORSI, IFORS, CII, etc.
14.	Doctoral degrees thesis already advisory	:	(Three – co-member of thesis committee)
	supervised, if any (list titles)	:	Research guidance to Masters and PhD participants at IIT Bombay. PhD and Masters dissertation assessment, IIT Bombay.
15.	Number of PhD candidates, if any, currently registered under him along with university details:	:	One R&C Division, SPJIMR-BITS, Pilani
16.	State in what manner connected: with candidate's organization and proposed place of work		As a colleague at S.P. Jain Institute of Management& Research, Mumbai, where the candidate was an erstwhile Professor, in Marketing Area.