CHAPTER VII

DEVELOPING RESEARCH HYPOTHESES AND CONCEPTUAL RESEARCH MODELS
7.1 Introduction

This chapter describes the development of various research hypotheses from previous empirical studies and the development of TQM models based on the hypotheses developed for this study. The following sections discuss these hypotheses and TQM models.

7.2 Hypotheses between TQM enabling Constructs and Key Business Performance Indictor constructs

1. Strategic Vision and Plan

Vision and mission are two important elements in providing strategic direction (Robbins and Coulter, 2003). Vision should play a vital role in determining a business’s market potential (Tedlow, 2001) and position the business within the marketplace (Chun and Davies, 2001). A vision focuses a business’s strategy and is the root for continued success (Shrivastava, 1994). Sidney Schoeffler et al., (1974) report that strategic planning has a positive impact on profit performance of business. Bhide (2000) also suggests the impact of business plans on financial performance. Effective strategic management is instrumental to high performance and improved financial returns to grow in this dynamic environment. These findings indicate that strategic vision and mission has a strong relationship with strategic business performance. It makes the following hypothesis

*Hypothesis 1: Strategic vision and plan has a positive effect on strategic business performance*

2. Top Management Commitment and Leadership

Top level managers are responsible for determining quality aims and strategies and necessary sources to implement TQM program (Deming, 1982; Garvin, 1987; Leonard and Sasser, 1982; Saraph et al. 1989; Ahire et al.; 1996). It is the responsibility of top management to analyze organizational problems, review its vision and mission, and properly define the strategy needed to achieve organizational goals and objectives. Strong, positive, open-minded leadership will lead to long-term and sustainable business success (Randell and Mannas, 1999). Top management acts as a stimulant in TQM implementation by creating the values, goals and customer satisfaction systems (Lee et al., 2003). Support of top management improves the organization’s relations with customers and suppliers (Flynn, 1995; Kaynak, 2003).
The previous empirical studies show that the top management commitment has strong positive effect on creating an organizational form and instituting organizational practices to bolster the goal of organizational survival (Anderson et al., 1995). Some studies support that top management commitment has positive effect on organizational strategic business performance (DuBrin, 1995). Hence, it could conceivably be hypothesized that:

*Hypothesis H2: Top management commitment and leadership has a positive effect on strategic business performance.*

### 3. Supplier Quality Management

Supplier quality management can be defined as the set of supplier-related quality management practices for improving suppliers’ quality of products and services. Data from several studies suggest that suppliers can contribute to quality performance in organizations (Flynn et al., 1995). Poor quality of supplier products results in extra costs for the purchaser (Juran and Gryna, 1993). Juran and Gryna (1993), reported that materials and purchased parts are often a major source of quality problems. One study by Newman (1988) found that a firm pursuing long-term relationships with suppliers can benefit from improved quality and process performance and continuous cost reductions. Therefore, improving supplier quality management will contribute to the improvement of the firm’s product quality. These results provide further support for the hypothesis that:

*Hypothesis H3: Supplier quality management has a positive effect on product quality.*

### 4. Process Quality Management

Process management aims on managing the manufacturing process. Feigenbaum (1991) stated that machines and mechanization are very important factors affecting product quality. If statistical process control is implemented and practiced effectively, it will bring about process improvements by eliminating special causes of variation and reducing common causes of variation (Juran and Gryna (1993) and Anderson et al. (1994). Effective process management significantly affects the organizations’ important outcomes (Mir-Fakhroddini et al., 2011). Process management is helpful to decrease process variance (Flynn et al., 1995) and minimize chances of employee errors (Forker, 1997; Kaynak, 2003; Saraph et al., 1989). As a consequence, rate of damaged materials and late delivery, lead-time, unnecessary costs are reduced
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(Ahire and Dreyfus, 2000, Anderson et al., 1995), output increases and uniformity of products get higher (Anderson et al., 1995; Forza and Flippini, 1998). Furthermore, the use of preventive equipment maintenance make manufacturing process operate smoothly by improving reliability of equipment and restricting disruption in production (Ho et al., 1999). Anderson et al., (1995) indicated that process management is one of the important elements of integrated quality efforts. Moreover, Anderson et al., (1994); Fynn et al., (1995) indicated that the objective of process management is to reduce the variation by paving the way to incorporate quality into the production process. Moreover, Forza and Flippini (1998) stressed that the achievement of the above-mentioned objective helps to reduce costs related to rework and waste. The relation of process management to operational performance is founded in the studies of Ahire and Dreyfus (2000); Forza and Filippini (1998). Ultimately it leads to better operative business performance. It is possible to hypothesize that:

Hypothesis H4: Process Quality Management has a positive effect on operative business performance.

5. Continual Improvement and Learning

Continuous improvement refers to searching for never-ending improvements and developing processes to find better methods in the process of converting inputs into outputs. By continual improvement, a firm can satisfy its customers’ needs and expectations (Stevenson, 1996; Dean and Bowen, 1994). Deming advocated decreasing the proportion of defects and continuously improving product design (Deming, 1986). In a total quality management practice, it is need necessary to review and improve work processes constantly (Spencer, 1994). Continual improvement is possible only by continual learning of sophisticated technology. Continuous improvement and learning leads to reduction in process variation and improves output quality and it also decreases the need for rework, mistakes, and waste of staff, machine time, and materials (Anderson et al., 1994; Walton, 1986; Johnston and Daniel, 1991). These findings suggest that:

Hypothesis H5: Continual Improvement and Learning has a positive effect on Operative Business Performance.
6. Teamwork and Co-operation

Teamwork is central to TQM (Aubrey and Felkins, 1988; Kochan et al., 1995; Wilkinson, 1992; Yang, 2006). There is a consensus in the literature that multidisciplinary teamwork in teams composed of members from different organizational functional areas promotes TQM (Mohanty and Sethi, 1996; Schonberger, 1994; Simmons et al., 1995). Teamwork is necessary because it involves the collaboration between managers and non-managers, between functions, as well as with customers and suppliers (Dean and Bowen, 1994). Within the context of TQM, teamwork is an important outcome and a condition for continuous improvement. It facilitates collaborative efforts to solve quality problems (Waldman, 1994), places overall responsibility for quality with the team while reducing the potential for individual blame (Wilkinson, 1992), allows greater sharing of information within the work group (Oakland, 1989) and facilitates greater co-operation to improve continuously the functioning of the work group. In line with this argument, and in agreement with the results of Boon et al. (2007), teamwork was perceived as the dominant TQM practice, which has a strong association with the job satisfaction of employees.

Hypothesis H6: Teamwork and Co-operation has a positive effect on employee Satisfaction

7. Social Responsibility and Business Ethics

Social responsibility is a relatively new concept in business management (Ghobadian et al., 2007). Social responsibility and Business ethics are themes that have been given considerable attention in organizations and academic publications (Carroll, 1999). Friedman was one of the authors who first started the discussion about social responsibility, saying it should let the business people do what they must do and that is, let them take care of their business (Kok et al., 2001). Different authors agree that there are obvious connections between these two disciplines (Hazlett et al., 2007; Moir, 2001). Both TQM and CSR follow a set of philosophies and practices for the responsible management of an organization (Tarí, 2011) that may have positive impacts on customers’ interest in product (Barrett, 2009; Sila, 2007). According to Steeples (1994) there is a strong correlation between ethics and quality apparently in the
company's shares and on the actions of its customers. These findings suggest the following hypothesis:

Hypothesis H7: Social responsibility and business ethics has a positive effect on customer satisfaction

8. Organizational-Wide Communication

According to Kasongo&Moono (2010), the success of an organization depends on the communication system existing in the organization. Employees usually complain that they are not part of the communication system of the organization (Jefferson, 2002). Communication plays a vital role in the production of high quality products. The misunderstanding of procedures and instructions may negatively influence a production system. Employees cannot do their work effectively if they are not provided written instruction for quality improvement process (Aly & Schloss, 2003). Shahin, A. & Dabestani, R. (2011), write that perceptions of open communication in the organization contribute to employees’ feelings of satisfaction and commitment to the organizations. This finding, while preliminary, suggests that:

Hypothesis H8: Organizational wide communication has a positive effect on employee satisfaction.

9. Quality System Management

Employees can understand exactly what they can do in their work areas if the organization follows a documented quality management system. Many studies reveal that there is a positive relationship between ISO standards and waste reduction, increased customer satisfaction, employee morale, more efficient and responsive organization, better position in the market place, and bigger profits (Mirams and McElheron, 1995). Adopting ISO certification brings the following benefits: Improvement in operational efficiency; improvement in time and materials utilization; clearly defined responsibilities and authorities; improved accountability of individuals, departments, and systems; improved communication and quality of information; formalized systems with consistent quality, punctual in delivery, and a framework for future quality improvement; fewer rejects, less repeated work and warranty costs; less scrap, etc. (Randall, 1995). Ultimately, all of these lead to product quality. Previous researchers have already identified that having an ISO 9000 certificate can help firms
improve product quality (e.g., Motwani et al., 1996). Thus, the following hypothesis was made:

**Hypothesis H9:** Quality system Management has a positive effect on product quality.

### 10. Design Quality Management

For complex products, errors during product development cause about 50% of fitness-for-use problems (Juran and Gryna, 1993). Various researchers have identified design management as an important element of integrated quality efforts (Flynn et al., 1994; Ahire et al., 1996). It is true that product design quality will be improved if product designers have more shop floor and marketing experiences. Better product design can contribute to the betterment of product quality which leads to customer satisfaction and also increasing a firm’s competitive advantage in the marketplace. The American Quality Foundation and Ernst and Young study (1991) suggested that high quality performance firms invested more efforts in design management while low quality performance firms focused on inspections. Newell (2000)’s study suggests that product design leads to customer satisfaction and it fosters long-term relationship with customers. ISO 8402 (1994) guidelines strongly advocate that new product design should be deeply reviewed before production process in order to meet customer requirements and avoiding problems during the production. Ultimately, it helps in achieving customer satisfaction. These findings suggest the hypothesis that:

**Hypothesis H10:** Design quality management has a positive effect on customer satisfaction.

### 11. Measurement and Evaluation

Many researchers strongly argue that performance measurement is one of the major dimensions of TQM and it is critical for the successful implementation of TQM (Dixon et al., 1990; Neely et al. 1995; Bititci et al. 1997; Choi and Eboch, 1998; Kanji, 1998; Davidson et al., 2000; Cua et al., 2001; Mehra et al. 2001; Brah et al. 2002; Chang, 2005, 2006; Taylor and Wright, 2006). The existing traditional performance measurement systems and performance measures, developed from costing and accounting systems, are considered as not very well suited to the TQM environment (McAdam & Bannister 2001). They have been widely criticized for their short-term orientation and lack of flexibility (Hayes and Garvin, 1982; Jonsson&Lesshammar 1999; van Schalkwyk 1998; Bourne et al. 2000; Ghalayini& Noble 1996;
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Motwani (2001), lack of strategic focus (Skinner, 1974), not covering performances relative to the competitive capabilities (Dixon et al., 1990; Parker, 2000; White, 1996), encouraging local optimisation (Fry and Cox, 1989), not encouraging continuous improvement (Johnson and Kaplan, 1987; Lynch and Cross, 1991), or not being externally focused (Kaplan and Norton, 1992). It is obvious that a comprehensive performance measurement and evaluation system would ultimately lead to improved product quality. Thus, the following hypothesis was proposed:

Hypothesis H11: Measurement and evaluation has a positive effect on product quality.

12. Employee Participation and Empowerment

Japan succeeded in attaining better quality product by the formation of quality offices concept. Success of such offices relied upon active participation of all members of the organization (Lagrosen, 2003). Lot of previous empirical studies emphasize that in order to improve the quality of an organization’s products/services, its responsibilities should be scattered into all units of the organization (Black and Porter, 1996; Deming, 1982; Garvin, 1987). According to Gunasekaran et al. (1998) and Kanji (1990), Total quality management may be defined as a management philosophy based on people and with a strong emphasis on continuous improvement seeking to achieve total quality through a total participation of everyone in organizations. Deming (1986) has characterized human resources management as a significant driver of total quality management’s implementation, emphasizing its implications in quality continuous improvement. Employees' involvement in decision making is intrinsically at the heart of the TQM concept (Welikala and Sohal., 2008). It is obvious that employees will be glad if their suggestions are implemented by the firm. As a result, employees may increase their satisfaction level. Zhang (2000)’s study shows that there is a positive relationship between employee participation and involvement on employee satisfaction. This finding suggests that:

Hypothesis H12: Employee participation and empowerment has a positive effect on employee satisfaction.

13. Recognition and Reward

Expectancy theory implies that employees will be more satisfied if they are provided money incentives for their efforts (Cherrington, 1995). One of the major reasons people work is to earn money. Even those intrinsically motivated to work
because of the satisfaction they derive from their jobs must earn sufficient money. If their jobs do not gain adequate income, people are forced to seek other jobs, no matter how satisfying they find their present job (Cherrington, 1995). Empowerment, job autonomy, communication, teamwork, planned training, development, and reward and recognition based on the employees performance is an important enabler of TQM implementation (Carter et al., 2000; Gunasekaran, 1999; Oakland and Oakland, 2001). Moreover, it has a positive effect on organizational performance (Bayo-Moriones and Merino-Díás de Cerio, 2001). According to Feigenbaum (1991), besides monetary rewards, employees require reinforcement of a sense of accomplishment in their jobs and the positive recognition that they are personally contributing to the achievement of firm goals. Career development can provide increased satisfaction for employees (Cherrington, 1995). The above discussion indicates that recognition and reward activities are valued by employees, and it will enhance employees commitment to their jobs and make their jobs more enjoyable. It can thus be suggested that:

*Hypothesis H13: Recognition and reward has a positive effect on employee satisfaction.*

14. Education and Training

Samson and Terzirovski (1999) found that training is vital to the internal diffusion of quality ideas and practices, as without it there is no solid foundation for a formal quality programme. TQM training is not a one time effort, but should be conducted on a continuous basis (Schonberger, 1994; Schuler and Harris, 1991; Schuler and Jackson, 1987; Simmons et al., 1995; Snape et al., 1995; Vermeulen and Crous, 2000). Employee education and training are fundamental for many TQM programmes such as the adoption of new quality concepts, the set-up and practices of customer satisfaction systems, the use of statistical quality control, or the change of culture or quality control circle (Bowen and Lawler, 1992; Yang, 2006). Training and development have been recognized as essential to the implementation of TQM. One of Deming’s 14 points was that all employees must be trained in quality improvement techniques. Companies committed to TQM invest in training (Mandal et al., 1998; Schonberger, 1994). Cherrington (1995)’s study indicates that a successful training and education program will lead to creating more favorable attitudes, loyalty and cooperation among employees and it also helps employees in their personal development and advancement. Comprehensive literature review by Anderson et al.
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(1994) suggested that an employee deserves to take pride in his or her work. Deming believed that this pride comes from self-improvement, and that it is the firm’s job to offer opportunities for continuous education. According to Cherrington (1995), most learning environments are intrinsically reinforcing to the employees because of the satisfaction associated with acquiring new knowledge or skills. Hence, it could conceivably be hypothesised that:

Hypothesis H14: Education and training has a positive effect on employee satisfaction

15. Customer Focus

The focus on the customer has become a part of quality journey. According to Jarrod M Haar and Chester S. Spell (2008), successful implementation of TQM involves customer retention and increase in market share. Customer focus leads to customer loyalty which can be achieved by providing customers with reliable, durable product/service (Ana, 2008). Therefore, customer focus in organizations incorporates customer satisfaction, confidence, loyalty and reduction in complaints. Recent studies show that TQM cannot exist without focusing on customer. There should be proper systems and processes in the organization that continuously endeavor about customers’ needs and also about how to raise their satisfaction and provide new information (Dean and Bowen, 1994; Anderson et al. 1995; Black and Porter, 1996; Ahire et al., 1996). In addition to this, according to MBNQA, more emphasis is placed on this criterion than other quality criteria (Baldrige, 1998; Collier, 1992). The above findings indicate that the aim of any customer focus effort is to pursue customer satisfaction. It can therefore be assumed that:

Hypothesis H15: Customer focus has a positive effect on customer satisfaction.

16. Organizational Culture

Comprehensive quality culture highly emphasizes on cooperative behavior among members of the organization and encourages sharing information and assisting partners to complete duties and solving problems. Highly effective quality programs are performed when organizations overcome traditional limitations (Waldman, 1994). Successful introduction and practice of TQM requires close attention to organizational culture (Gallear and Ghobadian, 2004). Total quality management (TQM) is a management paradigm that propagates certain values, behavior, integrity, commitment, honesty, openness, respect and working methods (Dean and Bowen, 1994). TQM
implementation has a positive impact on the culture of an organization (Deming, 1986; Juran, 1989; Hackman and Wageman, 1995; Lawler et al., 1994). Many studies have emphasized that cultural factors bring TQM success (Dean and Bowen, 1994; Hackman and Wageman, 1995; Powell, 1995). Previous studies have shown that organizational environment and culture have a positive effect on competitive advantage, increased productivity and a firm’s performance (Yeung, 1991). Besides this, organizational culture has a positive effect on employee’s participation and involvement. This shows that employees play a significant role in constructing an organization. Organizational culture is ultimately manifested, represented and maintained by sense-making efforts and actions of individuals (Harris, 2002). Denison and Mishra (1995) found the relationship between culture traits and employee satisfaction. Thus, it can be inferred that there is a connection between organizational culture and employee satisfaction. So the following hypothesis was framed:

Hypothesis H16: Organizational culture has a positive effect on employee satisfaction.

7.3 Hypotheses among Key Business Performance Indicators construct

1. Employee Satisfaction

Anderson et al. (1995) reported that employee satisfaction has a positive and significant effect on customer satisfaction. Employee motivation affects product quality (Feigenbaum, 1991). Tornow and Wiley (1991) suggested that employees’ perceptions and attitudes are positively related to customer satisfaction. Saha’s (1989) study reveals that Japanese employees possess superior motivation compared to their counterparts elsewhere in the industrialized world, with greater dedication and commitment to their work. These characteristics will obviously contribute to product quality. It is well known that satisfied employees will have greater dedication and commitment to their job. It is true that, for improving the product quality, it requires motivation and reward change on the part of all parties concerned (Juran and Gryna, 1993). Employee attributes potentially a vital factor for operational efficiency (Oliva and Sterman 2001; Ukko et al. 2007). The behavior psychologists in studying the linkage between employee satisfaction and work behaviors goes back to the Hawthorne studies (Roethlisberger and Dickson 1939) a landmark study that ushered in the organizational behavior perspective. Employees who are less stressed enhance their motivation and satisfaction performance levels, which finally leads to operational performance of
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*Hypothesis H17: Employee satisfaction has a positive effect on customer satisfaction.*

*Hypothesis H18: Employee satisfaction has a positive effect on product quality.*

*Hypothesis H19: Employee satisfaction has a positive effect on operative business performance.*

2. Customer Satisfaction

Bednar (1994) reported that customers are satisfied only when the firm provides superior product quality at reasonable prices; that is, when the value offered by products is superior to that of the competing products. Therefore, high quality products at reasonable prices will attract customers, thus improving the firm’s competitive business performance. DuBrin (1995) stated that product quality can contribute to sales growth and market share. There is significant association between customer satisfaction and accounting return on assets; (Anderson, Fornell and Lehmann, 1994). Shareholder value is very elastic with respect to customer satisfaction (Ittner and Larckner, 1996). Many researchers (Buzzell and Gale (1987); Jacobson and Aaker (1987); Gale (1992); Hallowell (1996); Fornell (1992)) found that higher customer satisfaction translates into higher than normal market share growth, the ability to charge a higher price, improved customer loyalty with a strong link to improved profitability, and lower transaction costs. Zairi et al. (1994) suggested that customer satisfaction can lead to an increase in a firm’s market share and profits. Kristensen et al. (2002) reported that customer satisfaction is the strongest predictor of further business performance such as yearly sales growth, net operating cash flows and market share (strategic business performance). According to Naumann and Giel (1995), strategic business performance refers to market share, increased revenues, and/or profit. Lee et al. (1995) proposed a hierarchical structure for overall business performance in which a higher level performance includes market share and profitability. Kaynak (2003) indicated that quality improvement had positive effects on improving a firm’s financial and market performance. Financial performance is measured through annual sales, sales growth, profits, market share, and exports. In this study, strategic business performance
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was measured by annual net sales, annual net profits, market share, and competitive position. Quality is the antecedent of customer satisfaction and leads to an increased competitive position (Ishikawa 1985, Juran 1986; Feigenbaum 1991, Reed, Lemak, & Mero, 1996; Tehran Sarfarazi, & Behboodi. 2012).

Many studies have reported that high level of customer satisfaction is strongly associated with profitability of firm. If any firm has low customer satisfaction, it will experience a continual erosion of its customer base, resulting in declining market share (Naumann and Giel, 1995). Rust and Zahorik (1993) suggested that customer satisfaction has positive effects on customer retention and market share. Zairi et al. (1994) reported that customer satisfaction can lead to an increase in a firm’s market share and profits. Customer satisfaction is an important indicator of a firm’s overall financial health, largely because it is perceived to be a key indicator of the firm’s market share and profitability (Rust and Zahorik, 1993). It is true that satisfied customers will repeat their purchases of products, increasing the firm’s market share and profits. Deming (1986) point out that dissatisfied customers are detrimental to a firm’s future development. The research conducted by Cronin and Taylor (1992) show that customer satisfaction has a significant effect on purchase intentions. Increases in customer satisfaction help to reduce marketing costs, reduce customer turnover, and enhance reputation, lower transaction costs such as contract negotiations, order processing, bargaining etc. (Fornell, 1992). These findings led to the following hypothesis:

Hypothesis H20: Customer satisfaction has a positive effect on strategic business performance.

3. Product Quality

Deming (1986) defined it as satisfying the customer, not merely to meet his expectations, but to exceed them. Juran and Gryna (1993) defined quality as customer satisfaction or fitness for use. Feigenbaum (1991) defined quality as the total composite product and service characteristics of marketing, engineering, manufacture, and maintenance through which the product and service in use will meet the expectations of the customer. Anderson et al. (1994) suggests that improving the product quality is the best way to achieve customer satisfaction. Reeves and Bednar (1994) reported that customers are satisfied only when the firm provides superior product quality at
reasonable prices; that is, when the value offered by products is superior to that of the competing products. Many previous studies have proved the strategic benefits of product quality. Product quality contributes to greater market shares and return on investments (Cole, 1992; US General Accounting Office, 1991), as well as lower manufacturing costs in the long run and improve productivity (Garvin, 1988). The production of the top quality products is considered as one of the most important strategic objectives of modern manufacturing firms. It has a link to profits, market share, and economic survival in the international world of competition (Wacker and Sheu, 1994). Primrose and Leonard (1988) argued that product quality has a direct effect on sales, and consequently profits, and Anderson et al. (1994) commended that product quality has a positive impact on customer satisfaction, providing best quality products and high customer satisfaction is rewarded by economic returns.

DuBrin (1995) suggested that product quality can contribute to sales growth and market share. Juran and Gryna (1993) found out that the evidence of the importance of quality to retaining present customers is dramatic. Zhang (2000)’s study shows that product quality has a positive impact on customer satisfaction and strategic business performance. The above mentioned findings suggested the following two hypotheses:

*Hypothesis H21: Product quality has a positive effect on customer satisfaction.*

*Hypothesis H22: Product quality has a positive effect on strategic business performance.*

4. **Operative Business Performance**

In a similar vein, Ramamurthy (1995); Beaumont et al. (2002); Brah et al. (2002); and Koh et al. (2007) measured performance in two dimensions: operational performance and organizational performance. Operational performance reflects the performance of internal operation of the company in terms of cost and waste reduction, improving the quality of products, improving flexibility, improving delivery performance; and productivity improvement. They are considered as primary measures because they follow directly from the actions taken during the implementation of TQM. Brah and Lim (2006), suggested that the operational performance has a positive correlation with overall organizational performance including competitive and strategic organizational performance. One possible explanation could be due to the success of TQM implementation as measured by operational measures such as producing high
quality products, speed of delivery, high flexibility, switching costs, safety, waste reduction, resource conservation and high productivity which would lead to success in the secondary measures, i.e. financial and non-financial measures

Hypothesis H23: Operative business performance has a positive effect on strategic business Performance

7.4 Developing hypothesized conceptual TQM model

Based on the twenty-three hypotheses developed by this study, the following TQM model was developed. It reflects the effects of practices of TQM principles on Key Business Performance Indicators and effects of TQM practices between Key Business Performance Indicators in ISO certified large-scale manufacturing firms in Kerala. The following table shows the 23 hypotheses developed by this study.

Table 7.1: Summary of proposed hypotheses developed by this study

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<th>SI No.</th>
<th>Index of path analysis</th>
<th>Hypotheses</th>
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<tr>
<td>H1</td>
<td>SBP ← SVP</td>
<td>Strategic Vision and Plan has a positive effect on Strategic Business Performance</td>
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<tr>
<td>H2</td>
<td>SBP ← TMCL</td>
<td>Top Management Commitment and Leadership has a positive effect on Strategic Business Performance</td>
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<td>H3</td>
<td>PQ ← SQM</td>
<td>Supplier Quality Management has a positive effect on Product Quality</td>
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<td>H4</td>
<td>OBP ← PQM</td>
<td>Process Quality Management has a positive effect on Operative Business Performance</td>
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<tr>
<td>H5</td>
<td>OBP ← CIL</td>
<td>Continual Improvement and Learning has a positive effect on Operative Business Performance</td>
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<tr>
<td>H6</td>
<td>ES ← TWC</td>
<td>Teamwork and Co-operation has a positive effect on Employee Satisfaction</td>
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<tr>
<td>H7</td>
<td>CS ← SRBE</td>
<td>Social Responsibility and Business Ethics has a positive effect on Customer Satisfaction</td>
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<tr>
<td>H8</td>
<td>ES ← OWC</td>
<td>Organizational-Wide Communication has a positive effect on Employee Satisfaction</td>
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<tr>
<td>H9</td>
<td>PQ ← QSM</td>
<td>Quality System Management has a positive effect on Product Quality</td>
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<td>H10</td>
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<td>H11</td>
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Design Quality Management has a positive effect on Customer Satisfaction
Measurement and Evaluation has a positive effect on Product Quality
Employee Participation and Empowerment has a positive effect on Employee Satisfaction
Recognition and Reward has a positive effect on Employee Satisfaction
Education and training has a positive effect on Employee Satisfaction
Customer Focus has a positive effect on Customer Satisfaction
Organizational Culture has a positive effect on Employee Satisfaction
Employee satisfaction has a positive effect on customer satisfaction
Employee satisfaction has a positive effect on product quality
Employee satisfaction has a positive effect on operative business performance
Customer satisfaction has a positive effect on strategic business performance
Product quality has a positive effect on customer satisfaction
Product quality has a positive effect on strategic business performance
Operative business performance has a positive effect on strategic business performance

Based on these hypotheses, the researcher developed a TQM implementation model for the ISO certified large-scale manufacturing firms in Kerala which will help these firms to identify potential benefits by practicing TQM enabling factors towards different business performances. The following figure depicts the diagrammatic representation of the effects of TQM on Key business performances which is the conceptual framework of the study.
(H1 to H23 indicate the hypotheses developed by this study)

Figure 7.1: Proposed hypothesized conceptual Model of effects of practices of TQM principles and Key Business Performance Indicators
7.5 Models for different perspectives of TQM practices

Based on the hypotheses developed by this study from various previous empirical studies related to TQM, the researcher has divided TQM practices into five different perspectives which include human resource management perspective of TQM practices, customer orientation perspective of TQM practices, product quality perspective of TQM practices, operative business performance perspective of TQM practices and strategic business performance perspective of TQM practices. Based on these perspectives, researcher examines the extent of contribution of TQM factors towards respective perspectives.

Source: Based on hypotheses of the study

7.5.1 Human Resource Management perspective of TQM practices

TQM philosophy emphasizes the importance of human management practices in the organization. TQM is an approach whose goal is to maximize competitiveness through human resources (Jumenez& Martinez-Costa, 2009). The role of both human resource management and TQM is to create organizational culture of high performance-based system (Ooi, Teh, & Chong, 2009). Miller and Cardy (2000) suggest that HRM need to respond in a creative way to TQM and reengineering in organizational changes. Dale and Cooper (1993) highlight the importance of concern for people issues in TQM. TQM as human resource management perspective, six
dimensions of human resource management are assessed in this study which include teamwork and co-operation among employees, organizational-wide communication system existing in the organization, education and training given to the employees by the organizations, quality organizational culture existing in the organization, recognition and reward system and employee participation and empowerment.

Education and training is a very important aspect of TQM. As Ishikawa (1985) says “Quality begins and ends with education”. TQM theorist Juran (1993) has cited shortcomings in the reward system as a key reason why he believes TQM often fails in US organizations. Several articles in practitioner oriented publications have also mentioned the need for alignment of the reward system to support successful TQM implementation (Clinton et al., 1994; Wilkinson et. al., 1992). Public recognition is an important source of human motivation (Deming, 1986). It almost goes without saying that an important feature of any quality improvement program is the showing of due recognition for improved performance by any individual, section, department or division within the firm (Dale and Plunkett, 1990). Employee participation is decisive in inspiring action on quality management (Juran and Gryna, 1993). Employee participation is exemplified by things such as teamwork, employee suggestions, and employee commitment. The misunderstanding of procedures and instructions may negatively influence a production system. Employees cannot do their work effectively if they are not provided written instruction for quality improvement process (Aly & Schloss, 2003). Teamwork is central to TQM (Aubrey and Felkins, 1988; Kochan et al., 1995; Wilkinson, 1992; Yang, 2006). Boon et al. (2007) suggested that teamwork is perceived as the dominant TQM practice, which has a strong association with the job satisfaction of employees. The above analysis emphasizes that Human Resource Management and TQM have significant association. The following six factors are used for assessing the HRM perspectives of TQM practices

1. Education and Training (EAT)
2. Recognition and Reward (RAR)
3. Employee Participation and Empowerment (EPE)
4. Organizational Culture (ORC)
5. Organizational-Wide Communication (OWC)
6. Teamwork and Co-operation (TWC)
7.5.2 Customer orientation perspective of TQM practices

“The customer is the king in the market” is truer today than ever before. As the quality of life improves the demand for better quality services and products also increase. Customers all over the world now demand that they be assured and satisfied that the products and services for which they are paying will meet their specifications and expectations and will perform as anticipated. Central point of the TQM movement is the concept of customer satisfaction. TQM is an integrated organizational effort designed to improve quality at every level. It is about meeting quality expectations as defined by customers and thus it is called Customer-defined quality. A positive relationship between TQM practices and customer satisfaction was found by
Parzinger&Nath (2000). And also, Das et al. (2000) described a positive relationship between TQM practices and customer satisfaction performance. TQM practices significantly affect employees'/customers’ satisfaction and loyalty (Jun, 2006). Under this perspective, three constructs are involved design quality management, social responsibility and business ethics and customer focus. Previous studies indicate that product design is one of the factors which enhance customer satisfaction. It can boost up the long-term relationship with customers. Barrett, (2009); Sila, (2007) argued that there is a strong connection between social responsibility of business and customer satisfaction and customers’ interest in the product. According to Dean and Bowen, (1994); Anderson et al. (1995); Black and Porter, (1996); Ahire et al., (1996) all customer focus activities, adopted by the organizations, aimed to achieve better customer satisfaction. These studies indicate that design quality management, social responsibility and business ethics and customer focus factors aimed to achieve customer satisfaction. The following three factors are used for assessing the customer orientation perspectives of TQM practices

1. Design Quality Management (DQM)

2. Social Responsibility and Business Ethics (SRBE)

3. Customer Focus (CFS)
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7.5.3 Product Quality perspectives of TQM practices

TQM is recognized as a strategy that considered customers as the main concern, in which it directly aims to provide them with high quality services and products through adding continuous improvements in the production processes (Harmon & Peterson, 1990). Product quality is one of the very critical factors for a manufacturing firm to be successful in the global market. DuBrin (1995) stated that business strategy development must put a high priority on product quality, which is a crucial hinge for business success or failure in today’s quality performance-oriented markets. Product quality has become a major business strategy (Feigenbaum, 1991). Ahire et al. (1996) suggested that improving product quality should be the prime objective of a firm’s
quality management efforts, and product quality should be used as a primary indicator of the firm’s quality efforts. Mainly, three factors have been found which lead to the product quality in TQM perspective in this study:

1. Supplier Quality Management,
2. Quality System Management and

Figure 7.5 Conceptual model of product quality perspective of TQM practices

Studies show that when a firm pursuing long-term relationships with suppliers can benefit from improved product quality (Newman, 1988). ISO 9000 certificate can help firms to improve product quality (Motwani et al., 1996). Many researchers have reported that evaluation of performance is one of the major factors of TQM and it is
critical for the successful implementation of TQM (Dixon et al., 1990; Neely et al. 1995; Bititci et al. 1997; Choi and Eboch, 1998).

7.5.4 **Operative Business Performance perspectives of TQM practices**

Operative business performance means the firm's performance measured against standard or prescribed indicators of operational business effectiveness such as, rework level, defect rate, scrape, production cost, employee productivity, speed of delivery, cycle time, waste reduction, and regulatory compliance etc. Effective process management is very useful in decreasing process variance (Flynn et al., 1995) and in minimizing chances of employee errors (Forker, 1997; Kaynak, 2003; Saraph et al., 1989). As a consequence, rate of damaged materials and late delivery, lead-time, unnecessary costs are reduced (Ahire and Dreyfus, 2000, Anderson et al., 1995), output increases, uniformity of products get higher (Anderson et al., 1995; Forza and Flippini, 1998) and costs related to rework and waste are reduced (Forza and Flippini, 1998)).

In a total quality management settings, it is essential that work processes are continuously reviewed and improved (Spencer, 1994). Continual improvement is possible only by continual learning of sophisticated technology. The Continuous improvement and learning process leads to reduction in process variation and improves output quality and it also decreases the need for rework, mistakes, and waste of staff, machine time, and materials (Anderson et al., 1994; Walton, 1986; Johnston and Daniel, 1991). Thus, for achieving effective operational business performance, the following two factors are to be practiced as part of TQM efforts;

1. **Process Quality Management**

2. **Continual Improvement and Learning**
7.5.5 Strategic Business Performance perspectives of TQM practices

Strategic business performance is the ultimate result of running a manufacturing firm, which can exhibit the effects of doing business, show the competitive capability of the firm in the marketplace and its financial soundness, and predict its future success or failure. It is a good indicator to test the effects of practices of TQM principles. According to Tedlow (2001), it focuses on a business’s strategy and is the root for continued success (Shrivastava, 1994). Strategic planning has a positive impact on profit performance of business (Sidney Schoeffler et. al., 1974; Bhide, 2000). Studies show that the top management commitment has an effect on bolstering the goal of organizational survival (Anderson et al., 1995) and organizational strategic business performance (DuBrin, 1995). These findings indicate that Strategic Vision and Plan and
Top Management Commitment and Leadership have positive effect on strategic business performance. Thus, strategic business performance perspective of TQM practices involved the following factors;

1. Strategic Vision and Plan

2. Top Management Commitment and Leadership

Figure 7.7 Conceptual model of strategic business performance perspective of TQM practices
7.6 Overall conceptual model of the study

The following figure depicts the overall picture of conceptual model of the study.

Figure 7.8: Overall conceptual model of the study
7.7 Conclusion

In this chapter, researcher developed twenty three research hypotheses for the present study based on previous empirical research findings and also developed a comprehensive TQM model which reflects the effects of TQM practices on Key Business Performance Indicators in ISO certified large-scale manufacturing firms in Kerala. Besides this, researcher developed various measurement models for measuring the extent of contribution of different perspectives of TQM practices such as human resource management perspective of TQM practices, customer orientation perspective of TQM practices, product quality perspective of TQM practices, operative business performance perspective of TQM practices and strategic business performance perspective of TQM practices.