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# A STUDY ON IMPACT OF TOP MANAGEMENT COMMITMENT ON ISO 9001 STANDARD IN MANUFCTURING ORGANISATIONS

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***Abstract:***

***Effect of Top Management Commitment on successful implementation of ISO 9001 standard happens when top level senior managers are committed to identify customer needs and satisfying them. Understanding the importance of quality management system in general and ISO 9001 standard in particular is very essential and more useful for manufacturing organizations. This study tried to explore the relationship between top management commitment (TMC) and ISO 9001 standard. TMC and critical factors of ISO 9001 standard were measured using self-administered questionnaire. The results found that there was a positive and significant correlation between TMC and ISO 9001 standard. However, the study did not report significant association between TMC and continuous improvement of ISO 9001 standard. TMC significantly predicted ISO 9001 standard. The way top management responds to the implementation of ISO 9001 standard affects the overall objectives of the organization.***

***Keywords:***

***Top Management Commitment, Customer Focus, Continuous Improvement, Supplier Relationships, ISO 9001 Standard***

## 1. INTRODUCTION

Modern business is more complex as the needs and demands of the customer are changing and are diversified in many ways. Hence every business unit has to be customer centric and try to innovatively satisfy the needs of customers by providing quality and style. This requires more creative ability and quality convincing capability to the business organizations. But unfortunately the term quality is ill defined. The quality is that strength of the product which satisfies all needs of the customers. Therefore, every business organization these days is behind searching for innovative strategies to implement quality management. The association between quality and quality management is widely recorded by well-known quality philanthropists namely, Edward Deming [6], Joseph Juran [12] [13], Philip Crosby [5] and Ishikawa [11]. Review of previous literature survey revealed that top management commitment is a prominent critical factor for the successful implementation of quality management systems. Many quality experts are of the opinion that top management is the key to successful management of quality. The previous literature review also argues that top management is committed for periodic assessment of needs and expectations of customers, leading to enhanced production processes, delivering quality products to the customers and achieving customer satisfaction. Thus the present research attempts to investigate the effect of top management commitment on ISO 9001 standard in manufacturing organizations.

### 1.1 RESEARCH OBJECTIVES

- To examine the relationship between Top Management Commitment (TMC) and ISO 9001 Standard
- To examine the strength of association between Top Management Commitment (TMC) and ISO 9001 Standard

### 1.2 RESEARCH QUESTIONS

- What is the degree of relationship between Top Management Commitment (TMC) and ISO 9001 Standard?
- What is the strength of association between Top Management Commitment (TMC) and critical factors of ISO 9001 Standard?

The conceptual framework is given in Fig.1.

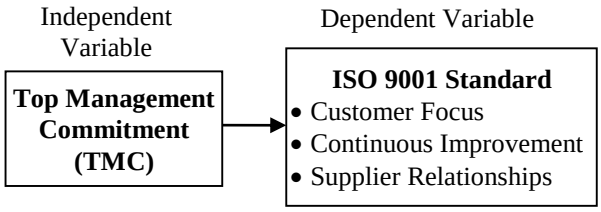


Fig.1. Schematic Diagram

## 2. LITERATURE REVIEW

### 2.1 TOP MANAGEMENT COMMITMENT

A typical manufacturing organization's concern include whether the product is designed and produced as per the needs and expectations of the customers with least cost and best quality. The term 'Quality' is understood as totality of features, which collectively make a product acceptable to the market [2]. The concept of quality can be better explained in terms of quality dimensions such as; performance, reliability, conformance, durability, serviceability, aesthetics and perceived quality [15]. Some researchers are of the opinion that, fulfillment of customer needs and expectations is the core objective of any business and achieving this objective is called quality. However, the present study argues about quality from the top management's point of view and attempts to prove that top management commitment is indispensable for the successful implementation of ISO 9001 standard. Quality gurus such a Deming and Juran also believed that leadership has a prime importance in implementing quality management system in any organization.

Numerous Quality promoters have acknowledged the fact that, several critical factors are relatively essential for the successful implementation of ISO 9001 standard such as; top

management commitment, customer focus, supplier relationship, human resource management, quality process management, continuous improvement and quality measurement [19]. Capon et al. [3] in his research work found that there exist a positive association between quality and organizational performance. Dissanayaka et al. [7] has conducted a research on evaluating outcomes from ISO 9000 certified quality systems of Hong Kong constructors and found that there was a positive and significant relationship between ISO 9000 standard and firm's performance.

According to Li and Gurnani [14], the most common critical success factor in implementing ISO 9001 standard in any organization is top management commitment. According to Samson and Terziovski [18] top management and human resource management are amongst strong predictors of TQM practices. Taylor et al. [23] found that senior manager's involvement and understanding customer requirements are vital for TQM success. The study conducted by Chin and Choi [4] show that top management commitment is the most important element required for the successful implementation of ISO 9000 in the construction industry. Sharif [20] pointed out that top management commitment is an important factor impacting the success of ISO 9001 standard in an organization. According to Singh et al. [21], top management commitment has been found to be vital for the success of ISO 9000 program.

### 2.2 ISO 9001 STANDARDS

Subba Rao et al. [22] has conducted a study on 'Does ISO 9000 has an effect on quality management practices, and tried to investigate the association between ISO 9000 and quality management practices in an international context. The findings of the study indicated that ISO 9000 certified firms show higher levels of top management commitment, strategic quality planning, human resource management, quality assurance, supplier relationships, customer relationships and quality results.

Ragthaman and Korte [17] has conducted a study on an empirical analysis on ISO 9000 international quality registration for business firms to discover managerial perceptions about ISO 9000. The study found that ISO 9000 seen as a useful marketing tool and respondents have agreed that ISO 9000 implementation enhanced export potential.

Terziovski et al. [24] conducted a study on the longitudinal effects of the ISO 9000 certification process on business performance, where the cross-sectional study is undertaken in Australia. The study found that there is a significant and positive relationship between the top management's motivation for adopting ISO 9000 certification and business performance. The study also found that, organizations that pursue ISO 9001 certification willfully and positively are more likely to report superior organizational performance. Customer focus was found to be contributing the most to organizational performance and primary inspiration to pursue ISO 9000 certification was found to come from customer pressure.

Arumugam et al. [1] tried to investigate the association between ISO 9001 standard and organizational performance in Malaysia. The responses were collected from quality managers and the findings revealed that total quality management practices were found to be moderately correlated with quality performance of the ISO 9001:2000 certified manufacturing organizations in Malaysia.

Durairatna et al. [8] analyzed the relationship between ISO 9001 and work outcomes such as job satisfaction, work involvement, organizational commitment in his research work studied the impacts of ISO 9001 core principles on work outcomes and customer satisfaction in Sri Lankan manufacturing organizations. The study found that implementation of ISO 9001 has a positive relationship with work outcomes.

Chatzoglou [16] conducted a research on the impacts of ISO 9000 certification on firms' financial performance to explore the relationship between acquiring ISO 9000 certification and the overall financial performance of the certified firms. The findings of the study confirmed that ISO 9000 implementation is highly associated with improvements in overall financial performance.

The above literature review tried to examine the different perspectives of quality and quality management in manufacturing organizations. The importance of top management in quality management was addressed in the literature study. The study further revealed that there exists a relationship between top management commitment and quality management and is generally perceived as one of the key factor in determining the successful implementation of quality management system. It has been observed that the manufacturing organizations are facing lot of quality issues as the needs and expectations of the customers are not constant. Therefore the present study tried to perceive quality management in the context of manufacturing industry from the perspective of top management commitment.

## 3. RESEARCH METHODOLOGY

### 3.1 THE METHODOLOGY CONSIDERATIONS

The current study has followed deductive approach, because the study develops a set of questions in the beginning of the research. Then appropriate research methods were selected and applied to answer the questions. The research study contains research questions that are analytical in nature. In order to address these analytical questions a quantitative research was adopted. In addition, the research obtained knowledge by gathering information from various published materials like textbooks, articles, news bulletins etc. Thus the present study used both quantitative and qualitative research methods.

The present study adopted exploratory research design because the basic objective of the study was to investigate and obtain clarity about the problem situation. The term "empirical" is defined as facts or knowledge which is based on real world observations within an organization. Further, Flynn et al. [10] was of the opinion that empirical research is more suitable for quality management research [9].

### 3.2 SAMPLING

The study was carried out in Belagavi district of Karnataka state. Belagavi is a foundry hub of Karnataka state with more than 300 foundries producing automotive and industrial castings. These foundries support manufacturing organizations like engineering, CNC and conventional machine shops which polish the castings that are produced in Belagavi. Therefore, manufacturing organizations such as Foundry, Engineering and Machine Shops were considered for the study Further, present study has chosen to include only manufacturing companies as it

is believed that Indian manufacturing and service organizations are too diverging in their focus on ISO standards. All the manufacturing organizations which are either the member of Belgaum Foundry Cluster (BFC) or Belgaum Chamber of Commerce and Industries (BCCI) were selected as sample population for the study. The list of ISO 9001 certified manufacturing organizations located in Belagavi was collected from a leading ISO certifying agency, TUV Sud South Asia Belagavi branch. TUV SUD is a leading testing, certification and training company in India dedicated to providing customers with solutions based on reliability, safety and environmental protection having its branch located Belagavi.

The present study made an attempt to understand the relationship that exists between two variables namely; independent variable and dependent variable. The present study considered top management commitment as independent variable and ISO 9001 standard as dependent variable. The principal research instrument used for the current study was a survey questionnaire. Convenience sampling method was adopted for respondent's selection. Only those organizations that meet the following two criteria have been included in the study; firstly, the organization should belong to the manufacturing sector secondly, the organization should be ISO 9001:2008 certified one. Total 530 questionnaires were distributed to the employees of 145 selected ISO 9001:2008 certified manufacturing organizations and 468 completed questionnaires were received in return. 13 questionnaires were discarded as they were invalid (missing data). Finally, 455 questionnaires were considered for the current study.

### 3.3 DATA ANALYSIS PROCEDURE

The data was entered in excel sheet. Then the files were imported to Statistical Package for Social Science (SPSS - 20). The valid data of 455 respondents were considered for the reliability analysis. Subsequently reliability analysis was carried out to assess the internal consistency of the measurement variables. Karl Pearson's co-efficient of correlation computation was employed to examine the relationship between top management commitment and ISO 9001 standard. Multiple regression analysis was conducted to know the most contributory relationship between the variables,

## 4. RESULTS AND DISCUSSIONS

### 4.1 RELIABILITY ANALYSIS

Reliability analysis was performed to check the internal consistency of the scales. It was performed for both independent and dependent variables. Chronbach's alpha value of greater than 0.7 is generally acceptable according to literature survey. The results revealed that the Cronbach alpha value of both independent and dependent variables shows above 0.7 and hence there was internal consistency of the scales.

Table.1. Summary of Reliability Analysis

| | Variables | Alpha Value | Comment |
|---|---|---|---|
| 1 | Top Management Commitment | 0.846 | acceptable |
| 2 | ISO 9001 standard | 0.839 | acceptable |

**Research Question 1**: What is the degree of relationship between Top Management Commitment and ISO 9001 Standard?

Karl Pearson's coefficient of correlation was calculated to examine the degree of association between top management commitment and ISO 9001 standard. All the measurement variables were considered for this analysis. It was computed for top management commitment as independent variable and ISO 9001 standard as dependent variable. In addition, correlation was calculated between top management commitment and critical factors of ISO 9001 standard, namely; customer focus, continuous improvement and supplier relationship. All the correlations were found to be statistically significant at 0.01 significance level.

Table.2. Correlation Analysis

| | TMC | ISO | CF | CI | SR |
|---|---|---|---|---|---|
| **TMC** | 1 | | | | |
| **ISO** | .808** | 1 | | | |
| **CF** | .738** | .916** | 1 | | |
| **CI** | .497** | .616** | .606** | 1 | |
| **SR** | .601** | .713** | .646** | .502** | 1 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | |

The correlation analysis demonstrated a positive and significant association between top management commitment and ISO 9001 standard ($r = 0.808$, $p < 0.01$). The results show that, there is a high positive correlation between top management commitment and ISO 9001 standard. The implementation of ISO 9001 standard is a strategic decision made by the organization's top level management. The results showed that, top management's commitment towards demonstrating dedication towards the implementation of ISO 9001 standard contribute to successful implementation ISO 9001 standard. Further, continuous improvement by communicating the importance of meeting customer requirements, publishing the quality policy, quality objectives, performing management review and providing appropriate resources also helps to build a strong quality base in an organization. Further Top management's responsibility include; communicating to the organization about the importance of meeting regulatory requirements, ensuring that quality measurements are taken and recorded, ensuring that quality measurements are compared against quality objectives, conducting periodic management reviews, reviewing the quality system, making changes wherever necessary and provide evidence of management reviews. These responsibilities contribute to successful implementation of ISO 9001 standard.

Top management commitment showed a positive and significant association with customer focus, continuous improvement and supplier relationships. The results revealed that, top management demonstrated positive and significant relationship with customer focus ($r = 0.738$, $p < 0.01$), continuous improvement ($r = 0.497$, $p < 0.01$), and supplier relationships ($r = 0.601$, $p < 0.01$). The correlation showed a high positive correlation between top management commitment and customer focus and moderate positive correlation between top management commitment and supplier relationships. The results also revealed a low positive correlation between top management commitment and continuous improvement.

Organization's success depends on their customers and therefore it is important that customer relationships need to be effectively managed. Accordingly, the organizations should understand current and future needs of customers; meet their requirements and strive to exceed their expectations. To ensure this the organizations are required to understand customer's specific needs and requirements in terms of products, price, delivery, communication, service and support. Top management's role in providing the leadership and commitment of time and resources is very important. Top management's commitment towards processing customer requirements and monitoring and measuring customer satisfaction are essential for successful implementation of ISO 9001 standards. Further top management's overall responsibility for customer relationship management also contributes to ISO 9001 standards.

An organization and its suppliers are interdependent and mutually beneficial relationship between an organization and supplier enhances the ability of both to create value. It is the top management's responsibility to build supplier relationships to enhance quality within the organization. Top management has to identify and select key suppliers, who should be selected for the value that they add to the organization as well as their approach to the supply chain and develop supplier relationships that address both short-term advantages with long-term concerns for the organization. In addition, top management has to develop clear and open interactions with the suppliers to ensure that there will be a superior level of transparency and accountability amongst suppliers and the organization. Further top management's initiation towards cooperative development and enhancement of products and processes, to ensure the best level of quality for the organization as well as the supplier leads to better management of quality systems. Top management's initiative in information sharing also encourages both the supplier and the organization work together to achieve these goals. These all contribute the successful implementation of ISO 9001 standard.

**Research Question 2**: What is the strength of association between Top Management Commitment (TMC) and ISO 9001 Standard?

Regression analysis was performed to determine the extent to which top management commitment predict the ISO 9001 standard. Regression analysis was employed for top management commitment with ISO 9001 standard and top monument commitment with critical factors of ISO 9001 standard namely; customer focus, continuous improvement & supplier relationships.

#### *4.1.1 Regression Analysis of Top Management Commitment with ISO 9001 Standard:*

Regression analysis calculations showed that top management commitment significantly predicted ISO 9001 standard ($F$ = 850.8, $p$ < .001). The top management commitment ($\beta$ = 0.808, $p$ <.05), significantly predicted the ISO 9001 standard ($R^2$ = 0.653). The top management commitment predicted 65.3% variance in ISO 9001 standard. It specifies that top management's commitment towards establishing quality policy, quality objectives, allocation of adequate resources for the implementation of quality policy, and training of quality personnel contributes to the successful implementation of ISO 9001 standard in manufacturing organizations. Better customer relationships and improved supplier relationships certainly contribute towards successful implementation of ISO 9001 standards. Employee education and development motivates quality personnel to work in a more focused way. Review of employee skills at regular interval also contribute to the successful implementation of ISO 9001 standard.

Table.3. Regression Analysis of Top Management Commitment with ISO 9001 standard

| Model | Beta | t | Sig. |
|---|---|---|---|
| (Constant) | | 27.195 | 0 |
| TMC | 0.808 | 29.169 | 0 |
| a. Dependent Variable: ISO | | | |
| $R$ | 0.808a | | |
| $R^2$ | 0.653 | | |
| $F$ | 850.852 | | |

#### *4.1.2 Regression Analysis of Top Management Commitment with Customer Focus:*

Table.4. Regression Analysis of Top Management Commitment with Customer Focus

| Model | Beta | t | Sig. |
|---|---|---|---|
| (Constant) | | 4.583 | 0 |
| TMC | 0.738 | 23.269 | 0 |
| a. Dependent Variable: CF | | | |
| $R$ | 0.738a | | |
| $R^2$ | 0.544 | | |
| $F$ | 541.455 | | |

Regression results revealed that TMC significantly predicted customer focus ($F$ = 541.4, $p$ < .001). Top management commitment ($\beta$ = 0.738, $p$ <.05), significantly predicted the customer focus ($R^2$ = 0.544). Top management commitment predicted 54.4% variance in customer focus. Organizations depend on their customers. Without customers there would be no need for an organization to exist. Focusing on the customer provides a unity of purpose when all activities and efforts are directed towards achieving customer and regulatory requirements. The results showed that top management demonstrates commitment towards nurturing customer focus by identifying their needs and expectations. In addition, review of quality policy and quality objectives at regular intervals also contribute to successful implementation of ISO 9001 standard.

#### *4.1.3 Regression Analysis of Top Management Commitment with Continuous Improvement:*

Table.5. Regression Analysis of Top Management Commitment with Continuous Improvement

| Model | Beta | t | Sig. |
|---|---|---|---|
| (Constant) | | 14.566 | 0 |
| TMC | 0.738 | 23.269 | 0 |
| a. Dependent Variable: CI | | | |
| $R$ | 0.497a | | |
| $R^2$ | 0.247 | | |
| $F$ | 148.231 | | |

Regression analysis results revealed that top management commitment moderately predicted continuous improvement ($F$ = 148.2, $p$ < .001). The top management commitment ($\beta$ = 0.497, $p$ <.05), moderately predicted the continuous improvement ($R^2$ = 0.247). The top management commitment predicted 24.7% variance in continuous improvement. Continual improvement is driven by the objectives set by top management. Each improvement requires the commitment of resources, which should be prioritized by top management, especially if investment is required. However, priorities of the top management depend on the financial implications. The results of regression analysis indicate that top management should seek for continuous improvement, so that the product quality is enhanced at every stage in the product process.

#### *4.1.4 Regression Analysis of Top Management Commitment with Supplier Relationships:*

Table.6. Regression Analysis of Top Management Commitment with Supplier Relationships

| Model | Beta | t | Sig. |
|---|---|---|---|
| (Constant) | | 14.747 | 0 |
| TMC | 0.601 | 15.994 | 0 |
| a. Dependent Variable: SR | | | |
| $R$ | 0.601a | | |
| $R^2$ | 0.361 | | |
| $F$ | 255.8 | | |

Regression analysis results showed that top management commitment significantly predicted supplier relationships ($F$ = 255.8, $p$ < .001). TMC ($\beta$ = 0.601, $p$ < .05), significantly predicted the supplier relationships ($R^2$ = 0.361). The top management commitment predicted 36.1% variance in supplier relationships. The various drivers of supply chain excellence are cost, compliance, quality and lead time and financial stability. Top management's commitment certainly leverages all these drivers, leading to improved quality management system in an organization. The results of regression analysis indicate that top management has to be committed to develop mutually beneficial supplier relationships, which in turn contribute to successful implementation of ISO 9001 standards.

## 5. FINDINGS AND SUGGESTIONS

The present study tried to examine the association between top management commitment and ISO 9001 standard. Further, the study also tried to investigate the strength of association between top management commitment and critical factors of ISO 9001 standard namely; customer focus, continuous improvement and supplier relationships. The study found that, there was a positive and significant association exists between top management commitment and ISO 9001 standard. It indicates that, the role of top management is very critical in the implementation of ISO 9001 standard in manufacturing organizations. Therefore, top management should ensure the proper allocation of resources for the enhancement of quality management systems. Further, top management commitment significantly predicted three critical factors of ISO 9001 standard. It indicates that, quality management begins with the top management and therefore should be committed in meeting customer needs and expectations, ensure continuous improvement in processes and maintain better relationship with the suppliers.

## 6. CONCLUSIONS

The role of top management is dominant in the establishment of quality management system in manufacturing organizations. Top management can provide the leadership support to achieve results. Top management must practice the philosophy of quality management by establishing superior relationship with customers and suppliers to ensure continuous improvement. Top management has to empower employees and provide them training at regular intervals to enhance their level of understating about quality and quality management systems. Top management's role is to make sure that team's decision is associated with the quality statements of the organization. Top management must be committed to allocate required resources and enhance the skills of employees using various quality management tools and techniques. The reason is very simple as the quality management implementation process begins with top management and ends with themselves.

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