BJ O&PM Brazilian Journal of Operations & Production Management

ISSN 2237-8960 (Online)

ABEPRO ASSOCIAÇÃO BRASILEIRA DE ENGENHARIA DE PRODUÇÃO

RESEARCH PAPER

# The Human Resource Management Practices for the Implementation of TQM in Indian Manufacturing Industries

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How to cite: Nanjundeswaraswamy,T. S., Kulenur, S. and Nagesh, P. (2023), "The Human Resource Management Practices for the Implementation of TQM in Indian Manufacturing Industries", *Brazilian Journal of Operations and Production Management*, Vol. 20, No. 2, e20231339. https://doi.org/10.14488/BJOPM.1339.2023

**ABSTRACT**

**Purpose:** Examine the association between human resource management(HRM) practices and the total quality management (TQM) practices in the meppchanical manufacturing industries.

**Design/Methodology/Approach:** Data and information were gathered using a survey instrument. Data were collected from the managerial level employees working in the HR, quality and production departments. Collected data and information were analyzed using descriptive statistics, factor analysis and structural equation modelling.

**Findings:** Human resource management practices are associated with total quality management practices. The result of the study also reveals that Functional Leadership (FL), Positive Organizational Scholarship (POS), Employee Involvement (EI), Empowerment (EMP) and Employee Training (ET) are the predominant factors of human resource management. At the same time, Benchmarking (BEN), Customer Satisfaction (CS), Top Management Commitment (TMC) and Supplier Relations (SR) are the critical success factors of TQM practices. "Functional Leadership" has the most significant impact on Benchmarking.

**Research limitations/implications:** The empirical research was on mechanical manufacturing industries in India only. Further, the study can be extended to other sectors to gather relevant TQM and HRM associations.

**Practical implications**: Successful implementation of HRM practices enhances employees' motivation level; this will significantly help to implement the organization's TQM practices. Overall implementation of HRM and TQM practices will improve employee satisfaction and customer satisfaction level and continuous improvement.

**Originality/value:** The research tender imminent into associations between HRM and TQM practices focusing on Indian manufacturing organizations. This conceptual framework is a valuable reference for future research.

**Keywords:** Total quality management; Human resource management; Manufacturing organization; India; Critical success factors of TQM.

## 1. INTRODUCTION

Total Quality Management (TQM) is one of the management techniques implemented worldwide to improve the quality of products and services (Santos et al., 2019,Trappey, 1995). TQM is the organizational philosophy implemented to meet customer satisfaction through the employee's involvement at all levels of the production process (Addis et al., 2019). In addition to

**Financial support:** None.
**Conflict of interest:** The authors have no conflict of interest to declare.
**Corresponding author:** nswamy.ts@gmail.com
**Received:** 4 October 2022.
**Accepted:** 16 November 2022.
**Editor:** Julio Vieira Neto.

enhancing the quality of products and services, TQM implementation will increase productivity, with reduced cost to sustain in the competitive business market (Rajagopal et al., 1995, Pereira et al.,2018).

Effective implementation of TQM practices, along with Human Resource Management (HRM) practices, will enhance organizational sustainability (Usrof and Elmorsey, 2016). Based on the degree of implementation of quality management practices in the firm, many quality awards such as Swedish Quality Award, Malcolm Baldrige National Quality Award, and European Quality Award will provide to the firms as a reorganization. The awarded firm's financial performance is better than the other organizations (Eriksson and Hansson, 2003). In the organization how employees are treated depends on the methods of HRM implemented in the organization. The responsibility of HRM is to bring talented people to the organization, support them to perform work efficiently, compensate them for their work, and to help the individuals in their development (Patro, 2013).

Hubiak and O'Donnell (1996) and Gaucher et al., (1993) research explored that without considering the human-related factors, TQM implementation in organizations is not possible, and it will become a big failure. Human Resource Management (HRM) acts as a catalyst during the implementation of TQM in the firm by enhancing competencies, motivation among employees; cultural change in favor of TQM implementation and serves as reinforcement for human relations and group formation (Palo and Padhi, 2005 and Hoogervorst et al., 2005). Both the TQM and HRM practices have a common goal, such as increasing customer as well as employee satisfaction through the continuous improvement in the product, process, and service quality by involving motivated employees in that progression (Herbig et al., 1994).

A good number of manufacturing and service organizations have devoted substantial effort to connect between HRM practices and TQM practices (Wolor et al.,2022; Sharma et al., 2021; Pandey et al., 2021; El-Kot et al.,2021). Connecting HRM practices with TQM practices yields a high quality of products and services, and increased productivity and performance at the lowest cost (Yang, 2006, Wolor et al.,2022). As far as a country like India, a little bit of empirical study has been conducted in connecting HRM and TQM. Consequently, this research is one of the few of its kind. The study findings of this research will help academicians, researchers, and management practitioners to understand the extensive and multifaceted nature of HRM practices along with fundamental TQM practices and its philosophy.

Therefore, we believe that the present empirical research is the primary contributor to this research. This research will also contribute to finding an included method of HRM and TQM that will help HR managers and quality managers to take necessary policies and strategies to enhance productivity and profit. This research article unfolds as follows. First, there is a theoretical framework for TQM practices; HRM practices and the association between HRM and TQM practices will be investigated. Secondly, methodology (design of instrument and validation of instrument) was discussed. Finally, the results and findings of the research were discussed.

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## 2. THEORETICAL FRAMEWORK

In the last two decades, manufacturing and service organizations have witnessed that the TQM is a critical innovation in management practices (Vafaei et al.,2019). In this viewpoint, the implementation of TQM practices is an inclusive method to enhance the product's quality and the organization's performance (Spencer, 1994; Hunt, 1993; Helal, 2022). Many research explored that, with the implementation of quality management practices, the organization will gain various benefits such as an effective knowledge management process (Honarpour et al., 2018); enhanced financial performance (Augustyn et al., 2019); nurtured innovativeness among the employees (Sahoo, 2019; Salim et al., 2019 and Rold et al., 2017); profitability of the organization (Hailu et al., 2018) and superior employee productivity (Belay et al., 2014).

On the other hand, many researchers like Abu Doleh (2012); Spencer (1994); Wilkinson (1992) mentioned that TQM has two faces first one is the challenging facet; it includes quality function deployment, statistical control, organizational procedures and design process, on the other hand, the second face, is the soft facet of TQM it involves methods of managing human resources, employee communication, customer satisfaction and employee satisfaction.

At the same time, a few researchers such as Dwyer (2002); Legge (1995) opined that people management also has two faces; the first facet consists of hard dimensions of HR policies and procedures, and the second facet included soft dimensions related to the integration of HR policies, organizational objectives, employee wellbeing, attitude etc. TQM encompasses two different structures. One will address the HRM issues and the other related to technical systems Evans and Lindsay (2002).

Top management needs to consider HR issues as the most priority; it is a precondition for implementing quality aspects in the process Wilkinson et al., (1991). Employee involvement, employee commitment, and HR issues are the core philosophy of quality implementation practices and techniques (Yang, 2006; Vouzas, 2004).

The intention for implementation of HRM practices in the organization is to enhance employee involvement, motivate the employees for continuous improvement, and to eliminate all types of waste during the production of quality products and services (Alfalla-Luque et al., 2012). HRM practices impact TQM practices; in addition to that, both methods have a considerable influence on employee satisfaction and customer satisfaction (Yang et al., 2006). HRM practices can be explained as a typical movement towards achieving competitive advantage (Gandhi, 2014; Hassan, 2022). Competitive advantages can be achieved by implementing more appropriate procedures and policies for managing human resources included with the organizational objective and strategic goal (Darwish et al., 2009). The above-stated discussion recommends that HR practices and policies play a significant role in implementing quality management practices in the organization. Even the most sophisticated quality management strategies will not give good results in implementation unless a committed workforce is involved in that process of implementation Palo and Padhi, (2005). TQM and HRM try to focus on establishing continuous cutthroat improvement in the work practices and performance; it includes adequate compensation, top management leadership, employee involvement, teamwork, employee empowerment, job rotation, etc. (Boon et al., 2007). Top management commitment, customer focus; employee participation; teamwork; education and training; supplier focus, and process are the critical success factors of TQM practices (Addis, 2019, a). Continuous improvement, customer focus; human resource management; leadership; organizational climate; strategic quality planning, and supplier management are the critical success factors of TQM practices (Yan et al., 2019).

HRM practices in the TQM practices are not optional, but it is a mandatory element for

successfully implementing quality management practices (Gennard et al., 2004). HRM practices are associated with TQM practices (Tawalbeh and Jaradat, 2020; Nizamidou et al., 2019 Abu Doleh, 2012), and quality management practices enhance the quality of performance (Boon et al. 2007; Gennard et al., 2004).

The present research focuses on the effect of HRM practices on the TQM practices in manufacturing organizations in India. It is achieved by using a systematic framework by collecting data and analyzing information related to HRM practices and TQM practices. This research explores the significance of having competitive advantages from the manufacturing organization through the effect of HRM practices such as employee empowerment; employee involvement; employee reward; functional leadership; organizational change; organizational culture; performance appraisal; recruitment & selection; teamwork, and Employee Training and TQM practices such as; benchmarking, continuous improvement, customer focus, customer satisfaction, process management, quality measurement, supplier quality management, and top management commitment.

## 3. OBJECTIVES OF THE STUDY

The present research objective is to investigate the association between Human Resources Management practices and Total Quality Management practices implementation in manufacturing industries.

## 4. SAMPLE AND PROCEDURE

Data and information for the research were gathered by using a self-administered survey. The survey instrument is designed to collect the data and information from the respondents related to TQM practices and HRM practices in the organization. However, 55 mechanical manufacturing industries were randomly selected located in Bengaluru, India for this research. Among the selected 55 mechanical manufacturing industries, only 49 organizations agreed to take part in the study. Data were collected from the managerial level employees working in the HR, Quality, and production departments. In brief, 600 questionnaires were distributed by personally contacting individual respondents, out of which 510 questionnaires are returned; among them, 448 responses were considered for the analysis remaining were rejected because of improper information.

## 5. QUESTIONNAIRE DEVELOPMENT

Through the extensive literature review and by considering the objectives of the research, an instrument is developed. Items in the instrument were selected from the earlier research literature and empirical research related to the amalgamation of HRM practices and TQM Practices in the organization.

The instrument consists of three parts; the first part includes the demographical characteristics of the firms. The second part consists of 32 items addressing ten dimensions of human resource management, and they are employee empowerment, employee involvement, employee reward, functional leadership, organizational change, organizational culture, performance appraisal, recruitment & selection, teamwork, and Employee Training. The third part included 23 items explaining eight critical success factors of TQM, they were; benchmarking, continuous improvement, customer focus, customer satisfaction, process management, quality measurement, supplier quality management, and top management commitment. The questionnaire was designed using a five-point Likert scale. Data are collected from 448 respondents from 49 organizations. Reliability of the instrument is measured through Cronbach's Alpha, for the study, it is 0.78; it is within the acceptable range when it is above 0.7 Hair et al., 2006.

## 6. VALIDATION OF THE MEASURING INSTRUMENT

Using Exploratory Factor Analysis (EFA), Confirmatory Factory Analysis (CFA), and measuring different model fit indices, the developed instrument was validated separately for Total Quality Management and Human Resources Management items.

### 6.1 Validation of Human Resource Management measuring instrument

#### 6.1.1 Exploratory Factor analysis

Principle Component Analysis (PCA) is performed by considering the Varimax rotation method; those factors address Eigenvalue more than one, and item loading yields more than 0.5 were extracted and considered for further analysis. Previously Kaiser-Meyer-Olkin test was conducted to check the sample adequacy; results show that the KMO value is 0.868 at the significance of 0.000, which is within the acceptable range. KMO test statistics reveal that collected data is sufficient to perform EFA and CFA.

**Table 1** Total Variance Explained

| Sl. No | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 6.924 | 28.850 | 28.850 | 6.924 | 28.850 | 28.850 | 4.382 | 18.258 | 18.258 |
| 2 | 2.694 | 11.226 | 40.076 | 2.694 | 11.226 | 40.076 | 3.992 | 16.633 | 34.891 |
| 3 | 2.098 | 8.740 | 48.816 | 2.098 | 8.740 | 48.816 | 2.168 | 9.032 | 43.923 |
| 4 | 1.437 | 5.987 | 54.803 | 1.437 | 5.987 | 54.803 | 1.857 | 7.736 | 51.659 |
| 5 | 1.147 | 4.778 | 59.581 | 1.147 | 4.778 | 59.581 | 1.661 | 6.923 | 58.582 |
| 6 | 1.047 | 4.361 | 63.942 | 1.047 | 4.361 | 63.942 | 1.286 | 5.360 | 63.942 |
| 7 | .919 | 3.831 | 67.773 | | | | | | |
| 8 | .828 | 3.449 | 71.222 | | | | | | |
| 9 | .737 | 3.070 | 74.292 | | | | | | |
| 10 | .716 | 2.982 | 77.274 | | | | | | |
| 11 | .646 | 2.693 | 79.967 | | | | | | |
| 12 | .609 | 2.540 | 82.506 | | | | | | |
| 13 | .563 | 2.345 | 84.851 | | | | | | |
| 14 | .512 | 2.135 | 86.986 | | | | | | |
| 15 | .466 | 1.943 | 88.929 | | | | | | |
| 16 | .432 | 1.802 | 90.731 | | | | | | |
| 17 | .404 | 1.684 | 92.415 | | | | | | |
| 18 | .357 | 1.486 | 93.900 | | | | | | |
| 19 | .346 | 1.443 | 95.343 | | | | | | |
| 20 | .285 | 1.186 | 96.530 | | | | | | |
| 21 | .260 | 1.085 | 97.615 | | | | | | |
| 22 | .209 | .873 | 98.487 | | | | | | |
| 23 | .198 | .827 | 99.314 | | | | | | |
| 24 | .165 | .686 | 100.000 | | | | | | |

From the EFA six dimensions of the HRM were extracted whose Eigenvalues more than one represented in Table 1; these extracted grouped items were named according to their relevance to the items. The extracted six factors, along with 24 items, explained 63.942 percent of the total variance. Six named dimensions were Functional Leadership (FL), Positive Organizational Scholarship (POS), Employee Involvement (EI), Empowerment (EMP), Employee Training (ET) and Team Work (TW). The extracted items' loading varies from 0.879 to 0.544; it is represented in Table 2.

**Table 2 -** Questions and item loading HRM

| Component | | Items | Factor Loading |
|---|---|---|---|
| FL1 | Functional Leadership (FL) | Employees' beliefs and values are shared with each other. | .698 |
| FL2 | | Preferences of functional leaders would be on the requirements of external customers. | .695 |
| FL3 | | Preferences of functional leaders would be on the requirements of internal customers. | .691 |
| FL4 | | Functional leaders continually improve the pattern of communication between employees. | .673 |
| FL5 | | The performance management system prioritizes group efforts to meet quality objectives. | .667 |
| FL6 | | Organizational stakeholders' requirements are met from time to time. | .661 |

| | Component | Items | Factor Loading |
|---|---|---|---|
| FL7 | | The Performance management system prioritizes the competencies of employees to meet quality objectives. | .652 |
| FL8 | | A positive work environment is maintained in the organization. | .627 |
| FL9 | | The employee selection process is based on an employee's ability to understand and reach quality objectives. | .544 |
| POS1 | Positive Organizational Scholarship (POS) | Awareness of contemporary quality management principles and practices allows employees to overcome change resistance. | .879 |
| POS2 | | The team environment helps to resolve quality issues related to products and services. | .854 |
| POS3 | | Quality practices and principles are implemented using motivational aspects toward employees. | .835 |
| POS4 | | A systems approach helps the organization implement quality goals. | .823 |
| POS5 | | Performance Management System focuses on individual efforts to improve quality objectives. | .812 |
| EI1 | Employee Involvement (EI) | Employees are encouraged to provide suggestions and feedback on quality practices. | .796 |
| EI2 | | Awareness of quality objectives is provided to every member of the organization. | .749 |
| EI3 | | Quality improvement programs are considered in HR plans and programs. | .593 |
| EMP1 | Empowerment (EMP) | Employees' involvement in decisions making quality improvement is encouraged. | .809 |
| EMP2 | | The employees are supported to take responsibility for achieving quality objectives. | .709 |
| EMP3 | | The management appreciates the quality efforts of employees. | .697 |
| ET1 | Employee Training (ET) | Employee competencies are focused on improving employee adaptability to change | .837 |
| ET2 | | Specific training sessions on quality aspects will help the employees to enhance their skills to meet quality objectives. | .789 |
| TW1 | Team Work (TW) | Peer Pressure on teams ensures performance improvement to achieve quality goals | .751 |
| TW2 | | Teamwork is prioritized to enhance the quality of work. | .709 |

### 6.1 Confirmatory Factor Analysis

Extracted six factors along with 24 items in the EFA are confirmed by performing CFA. CFA analysis yields five predominant components they were Functional Leadership (FL), Positive Organizational Scholarship (POS), Employee Involvement (EI), Empowerment (EMP), and Employee Training (ET) and 2 items are deleted because of poor factors loading compared to others. Five-dimension first-order measurement model is represented in the figure 1, all the measurement fit indices like CMIN/DF = 3.0, GFI=0.901,IFI=0.920,TLI=0.903, CFI=0.920 and RMSEA = 0.067 are within the acceptable range according to Hair et al., 2006.

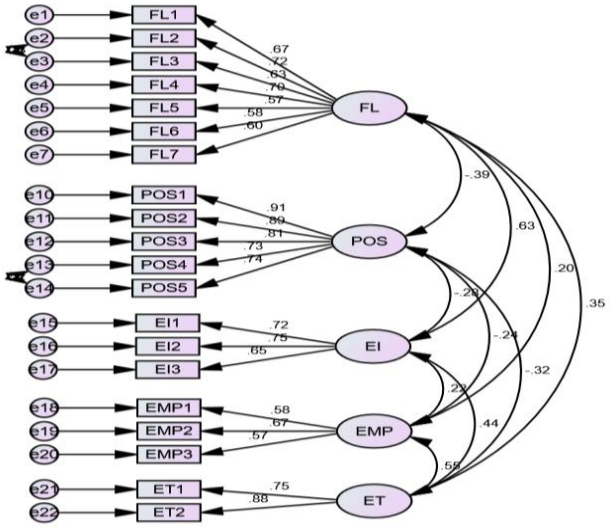


**Figure 1 -** HRM Measurement model

## 6.2 Validation of Total Quality Management

### 6.2.1 Exploratory Factor analysis

Principle Component Analysis (PCA) is performed by considering the Varimax rotation method; those factors address Eigenvalue more than one, and item loading yields more than 0.5 were extracted and considered for further analysis. Previously Kaiser-Meyer-Olkin test was conducted to check the sample adequacy; results explored that the KMO value is 0.834 at the significance of 0.000, which is within the acceptable range. KMO test statistics reveal that collected data is sufficient to perform EFA and CFA.

**Table 3 -** Total Variance Explained

| Sl.No | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.890 | 27.167 | 27.167 | 4.890 | 27.167 | 27.167 | 3.383 | 18.797 | 18.797 |
| 2 | 3.023 | 16.793 | 43.960 | 3.023 | 16.793 | 43.960 | 3.383 | 18.793 | 37.590 |
| 3 | 2.063 | 11.460 | 55.420 | 2.063 | 11.460 | 55.420 | 2.543 | 14.129 | 51.719 |
| 4 | 1.236 | 6.869 | 62.289 | 1.236 | 6.869 | 62.289 | 1.903 | 10.570 | 62.289 |
| 5 | .857 | 4.763 | 67.053 | | | | | | |
| 6 | .812 | 4.510 | 71.563 | | | | | | |
| 7 | .708 | 3.932 | 75.495 | | | | | | |
| 8 | .641 | 3.563 | 79.057 | | | | | | |
| 9 | .599 | 3.328 | 82.386 | | | | | | |
| 10 | .545 | 3.026 | 85.412 | | | | | | |
| 11 | .530 | 2.942 | 88.354 | | | | | | |
| 12 | .503 | 2.794 | 91.148 | | | | | | |
| 13 | .439 | 2.436 | 93.585 | | | | | | |
| 14 | .379 | 2.105 | 95.690 | | | | | | |
| 15 | .242 | 1.345 | 97.034 | | | | | | |
| 16 | .220 | 1.224 | 98.258 | | | | | | |
| 17 | .163 | .905 | 99.163 | | | | | | |
| 18 | .151 | .837 | 100.000 | | | | | | |

From the EFA four dimensions of the TQM were extracted whose Eigenvalues more than one, represented in table 3; these extracted grouped items were named according to their

relevance to the items. The extracted four factors, along with 18 items, explained 62.28 percent of the total variance. Four named dimensions were Benchmarking (BEN), Customer Satisfaction (CS), Top Management Commitment (TMC), and Supplier Relation (SR). The extracted items' loading varies from 0.909 to 0.534; it is represented in Table 4.

**Table 4 -** Questions and item loading of TQM

| Q.No | Components | Items | Item loading |
|---|---|---|---|
| BEN1 | Benchmarking (BEN) | The quality of the product and services is focused on building competitiveness in the market. | .829 |
| BEN2 | | The standards set to achieve quality objectives are assessed through self-assessment tools. | .813 |
| BEN3 | | Primary competitors are kept as a benchmark to implement various practices. | .762 |
| BEN4 | | Formal benchmarking helps to recognize the best practices for quality improvement. | .698 |
| BEN5 | | The employees identify quality objectives to enhance quality performance. | .632 |
| BEN6 | | To improve the quality of work, new suggestions and ideas will be encouraged. | .625 |
| CS1 | Customer Satisfaction (CS) | The focus will be on improvising customer satisfaction | .909 |
| CS2 | | To satisfy the needs of the customers, process alignment becomes vital. | .871 |
| CS3 | | Key process measurements are used to enhance customer satisfaction | .860 |
| CS4 | | To enhance the quality of work, continual improvement is ensured. | .830 |
| TMC1 | Top Management Commitment (TMC) | The company adapts upgraded technology to ensure the proper application of Total Quality Management practices. | .790 |
| TMC2 | | The assessment of customer satisfaction is made through a systematic feedback mechanism. | .723 |
| TMC3 | | The company will do periodic inspections to assess the quality of materials supplied to match the standards set. | .705 |
| TMC4 | | The product design and development are matched with the customer requirements by prioritizing the research and development department. | .696 |
| SR1 | Supplier Relation (SR) | The relationship with suppliers is prioritized to enhance continual improvement in reaching quality goals. | .762 |
| SR2 | | The company adopts a proper method for evaluating its supplier. | .713 |
| SR3 | | Cost of quality to check and measure the rework, wastage, and rejections are part of the system | .590 |
| SR4 | | To control variability, statistical process control is utilized to improve processes. | .534 |

### 6.2.2 Confirmatory Factor Analysis

Extracted four factors along with 18 items in the EFA are confirmed by performing CFA. CFA analysis yields the same five predominant components they were Benchmarking (BEN), Customer Satisfaction (CS), Top Management Commitment (TMC), and Supplier Relation (SR). Four dimension first-order measurement model is represented in the figure 2, all the measurement fit indices like CMIN/DF = 2.9,GFI=0.905,IFI=0.913,TLI=0.900,CFI=0.913 and RMSEA = 0.077 are within the acceptable range according to Hair et al., 2006.

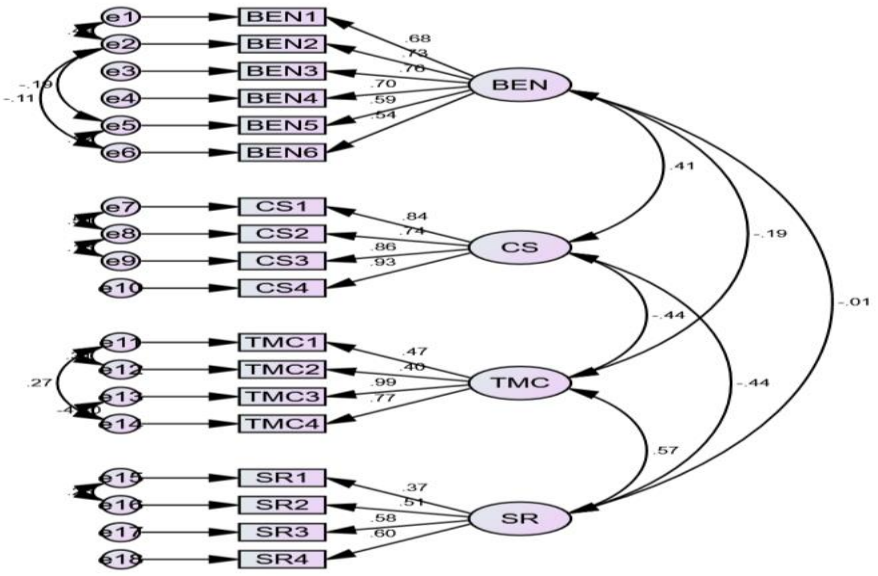


**Figure 2 -** Measurement model for TQM

### 6.3. Scale reliability and validity and model fitness analysis

Before conducting SEM it is required to test the reliability and construct validity of the measuring instrument. Construct validity of Total Quality Management and Human Resource Management confirmed if the Cronbach's Alpha value is more than 0.7 according to Hair et al.,(2006). Table 5, represents the different statistics of reliability and validity of the instruments, the minimum Cronbach's alpha value in this study is 0.733, which indicates that the instrument shows the good internal reliability of both TQM and HRM dimensions.

At the same time, Kaiser Meyer Olkin (KMO) value is more than 0.5. Most of the dimension's average variance explained more than 0.5; this also explored that the instrument is reliable to measure the stated objectives. For the designed instrument, convergent validity is also tested through the Average Varian Extracted (AVE) value; if the AVE is more than 0.5, the instrument fulfils the criteria of convergent according to Hair et al., (2006); in this study majority of the dimensions, AVE is more than 0.5.

**Table 5 -** Convergent Validity, Reliability Statistics

| Components | Cronbach's alpha value | Composite Reliability | Average Variance Extracted | KMO |
|---|---|---|---|---|
| Functional Leadership (FL) | 0.833 | 0.855 | 0.558 | 0.876 |
| Positive Organizational Scholarship (POS) | 0.916 | 0.923 | 0.707 | 0.849 |
| Employee Involvement (EI) | 0.740 | 0.759 | 0.515 | 0.676 |
| Empowerment (EMP) | 0.742 | 0.783 | 0.548 | 0.653 |
| Employee Training (ET) | 0.793 | 0.796 | 0.662 | 0.500 |
| Benchmarking (BEN), | 0.834 | 0.872 | 0.534 | 0.819 |
| Customer Satisfaction (CS) | 0.922 | 0.924 | 0.753 | 0.828 |
| Top Management Commitment (TMC) | 0.747 | 0.819 | 0.532 | 0.742 |
| Supplier Relation (SR) | 0.733 | 0.748 | 0.531 | 0.684 |

## 7. IMPACT OF HRM PRACTICES ON IMPLEMENTATION TQM

To verify the impact of HRM on TQM, a Structural Equation Modeling (SEM) was done. To assess the proposed model, several model fitness indices are verified. In this proposed research model, the results from the data analysis process are: Chi-square/df (CMIN)= 2.94 (<3); RMSEA = 0.079 (<0.08); CFI = 0.901 (>=0.9), TLI = 0.900 (>=0.9), IFI = 0.902 (>0.9), p = 0.000; therefore, the structural model reveals a sufficient model fit to collected data according to Hair et al., 2006 and Nanjundeswaraswamy et al.,(2022).The tested SEM model is represented in figure 3.

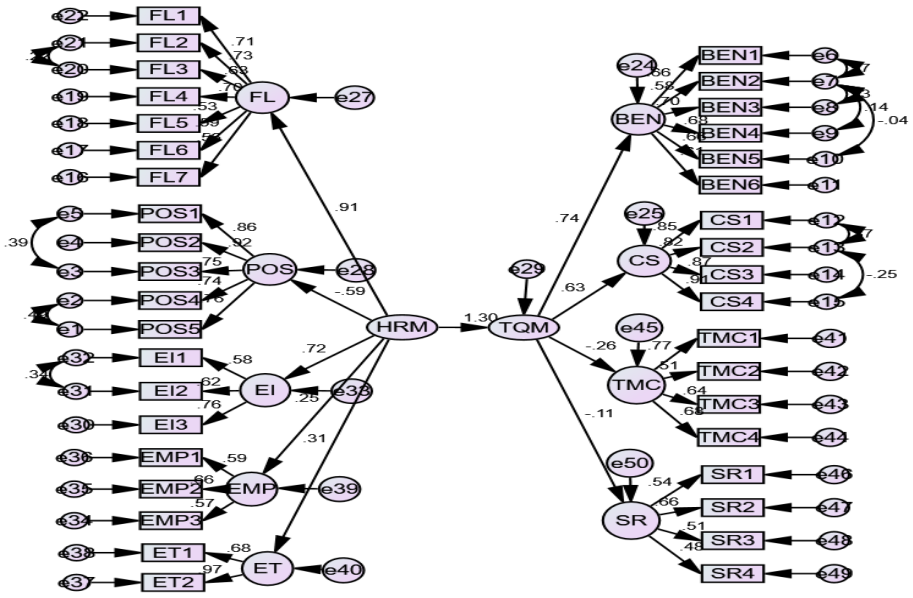


**Figure 3 -** Tested HRM and TQM model

From the SEM path analysis, the tested HRM and TQM model statistics are represented in Table 6, at 1 percent of significance level Human Resource Management(HRM) impacts on the Total Quality Management (TQM). In addition to that, the statistics explored that Human Resource Management is associated with Positive Organizational Scholarship (POS), Employee Involvement (EI), Empowerment (EMP), Employee Training (ET) and TQM associated with Benchmarking (BEN), Top Management Commitment (TMC) and Supplier Relation (SR).

**Table 6 -** Path model analysis statistics

| Components | | | Estimate | S.E | C.R | P Value | Significance |
|---|---|---|---|---|---|---|---|
| TQM | <--- | HRM | 2.439 | .237 | 10.310 | *** | 1% |
| FL | <--- | HRM | 1.000 | | | | |
| POS | <--- | HRM | -1.438 | .161 | -8.953 | *** | 1% |
| BEN | <--- | TQM | .520 | .049 | 10.701 | *** | 1% |
| CS | <--- | TQM | 1.000 | | | | |
| EI | <--- | HRM | 1.312 | .140 | 9.398 | *** | 1% |
| EMP | <--- | HRM | .196 | .051 | 3.823 | *** | 1% |
| ET | <--- | HRM | .513 | .087 | 5.925 | *** | 1% |
| TMC | <--- | TQM | -.223 | .040 | -5.501 | *** | 1% |
| SR | <--- | TQM | -.050 | .022 | -2.258 | .024 | |

From this analysis, it is explored that the probability of getting a critical ratio as large as 10.31 in absolute value is less than 0.001. In other words, the regression weight for **HRM** in the prediction of **TQM** is significantly different from zero at the 0.001 level (two-tailed).

## 8. THE EFFECT OF PREDOMINANT DIMENSIONS OF HRM PRACTICES ON CRITICAL SUCCESS FACTORS OF TQM PRACTICES

To the extent that the effect of HRM practices on TQM practices, Table 7 explores Pearson's correlation coefficient.

**Table 7 -** Pearsons Correlation coefficient

| HRM Practices | TQM Practices | | | |
|---|---|---|---|---|
| | Benchmarking (BEN) | Customer Satisfaction (CS) | Top Management Commitment (TMC) | Supplier Relation (SR) |
| Functional Leadership (FL) | .786** | .495** | -.192** | -.072 |
| Positive Organizational Scholarship (POS) | -.132** | -.737** | .301** | .351** |
| Employee Involvement (EI) | .429** | .502** | -.265** | -.147** |
| Empowerment (EMP) | .151** | .224** | .106* | .054* |
| Employee Training (ET) | .196** | .261** | -.061 | -.056 |
| ** significant at the 0.01 level<br>*significant at the 0.05 level | | | | |

The outcome of the Person's correlation analysis in Table 7 represents that the implementation of specific human resource management practices like "Functional Leadership," "Positive Organizational Scholarship," "Employee Involvement," "Empowerment" and "Employee Training" have a significant effect on the majority of the TQM practices. Interestingly, it is identified that "Functional Leadership" has the most significant impact on Benchmarking, and in turn, on customer satisfaction. On the other hand, it is noted that "Empowerment" has less impact on the "Supplier Relationship." The present study result is in line with the outcome of Vouzas (2004); at the same time, the research outcome is not much similar to the research of Boon et al. (2007).

## 9. CONCLUSION AND DISCUSSION

To sustain in the competitive business environment for a longer period, organizations have to satisfy the customer and employees' needs. Much research explored that the implementation of TQM practices significantly impacts customer satisfaction; therefore, it is inevitable to implement TQM practices to increase the organization's competitiveness, like the quality of the product and its brand image, innovativeness, etc. At the same time, much research evidence that many organizations fail to implement TQM practices because TQM cannot be implemented individually; it needs to be implemented together with HRM practices. Therefore, this research report examines the relationship between HRM practices and TQM practices in Indian manufacturing organizations. To examine this relationship, an instrument is designed to suit the nativity and validate the same. Secondly, it identifies the effect of HRM practices on the implementation of TQM practices. The data and information were collected from 448 employees; the respondents were the managerial-level employees working in the HR, Quality, and production departments.

The study explored that, there is a positive association between HRM practices and TQM practices, at the same time study also identified that Human Resource Management practices like "Functional Leadership," "Positive Organizational Scholarship," "Employee Involvement," "Empowerment," and "Employee Training" have a significant effect on the majority of the TQM practices. Interestingly, it is identified that "Functional Leadership" has the most significant impact on Benchmarking, then it impacts customer satisfaction. On the other hand, "Empowerment" has less impact on the "Supplier Relationship."

In general, the research outcome explored that HRM practices played a vital role in the implementation of TQM practices; the blended culture of HRM and TQM implementation will enhance the quality of the product and the performance of both organizations and employees.

Conversely, the effect of various HRM practices on the different TQM practices during the implementation is differentiated. Organizations should determine which HRM practices are critical to their business process and prioritize these practices before implementing TQM practices. The study outcome provides insight and reference for the organizations in this

respect. On the other hand, a few limitations of our studies are, that our study explores few interesting findings by establishing the relationship between the research variables at a single point period. However, the sample size considered for our study is not statistically representative of all the employees of mechanical manufacturing industries.

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**Author contributions:** All authors contributed equally to this paper.