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ASSESSING TOTAL QUALITY MANAGEMENT ADOPTION RATES AS A COMPARATIVE STUDY AMONG THE THREE SECTORS OF INDIAN ECONOMY

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Abstract: The paper aims to assess the extent of Total Quality Management (TQM) implementation and diversity prevailing in the three sectors of Indian Economy- Primary, Secondary and Tertiary; with respect to the acquaintance with TQM, presence of control department and preferences of core elements of TQM. The primary data is collected using questionnaire responded by 40 representatives of organisations at all India level. The three sectors show significant differences with respect to the implementations and presence of Quality Control Departments for TQM and do not have consensus in the core elements. All the three sectors have room for improvement, from adopting TQM practices to its implementation, but the study shows high awareness and adoption rate of TQM among primary and secondary sectors as compared to tertiary sector.

Index Terms- TQM, implementation, India, Sectors

1. INTRODUCTION

As defined by ISO: "TQM is a management approach of an organisation, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organisation and to society." (ISO, 2015).

There is a vast diversity in quality scenarios across nations and the economic challenges prevailing in current economic environment. All the nations, in attempt to be world class and beat competition, are orienting their quality management strategies and systems to adapt to market, but the primary focus is on winning customers through 'Total Customer Satisfaction'. (Niraj & Tony, 1999)

India is a part of same race and witness TQM in all three sectors of economy (primary, secondary and tertiary), as a systematic management approach to meet the competitive challenges. The forces of market, i.e. demand for specification and satisfaction along with supply for perfect substitutions, have made Total Quality Management a primary concern since organisations in all sectors are concerned with providing quality products and services at a competitive price. There are studies carried out by researchers in different national settings that reveal that the concept and philosophies of TQM are not understood by employees and it became inevitable to conduct a research on Indian market and check the familiarity and understanding of TQM in India, to create a cultural consciousness towards quality.

1.1 Literature Review

Significant attempts have been made by researchers in different nations to understand the implementation and the adoption rates of TQM practices and framework. Some of the major research made in context of Indian market includes (Jagadeesh, 1999) who traced spread of TQM and identified the causes for poor quality of products and service. He analyzed the quality trend and gave recommendations to bridge the gap and concluded that there is still a long way to receive the stamp of acceptance. (Talib, Rahman, & Qureshi, 2013) investigated the relationship between TQM practices and quality performance using a self-administered instrument, distributed to 600 Indian service companies and found that TQM practices were partially correlated with quality performance and quality culture was dominant. (Hajoary, 2016) studied TQM implementation and outcomes in a manufacturing and service company and concluded that quality management is key concept and vital for the growth.

Some researchers gave insights on TQM practices across globe and also helped draw the bridge as to where India stands with respect to other nations. (Prajogo, 2005) examined the difference between manufacturing and service firms in implementing TQM practices in Australia using SEM techniques and indicated no significant difference among them. (Haar & Spell, 2006) studied adoption rates of TQM by New Zealand firms and how organisational size impact in adoption rates. (Sila, 2018) analyzed effects of country- and sector-related contingency factors on TQM practices and TQM-performance relationships model framework in Turkey and North Cyprus and found

evidence for differences across sectors. (Bouranta, Psomas, & Suárez-Barraza, 2019) identified the key TQM factors and their impact on internal and external customer performance measures across Greece, Mexico and Spain.
Others conducted their research in general market and analyzed the TQM implementation in the market and industries. (Israr & Gangele, 2014) highlighted importance of quality framework in assessing status of quality practices in organisations and guiding managers in quality improvement initiatives, without outside consultants. (Canbay, Akman, & Aladağ, 2019) discussed the status of TQM principles in a smart factory and in an Industry 4.0 environment and provided systematic definition to guide managers.

The core elements of successful TQM implementation are taken on the basis of survey literature and identified as customer focus, management and leadership, employee empowerment, suppliers' quality, training, tools of quality, process improvement and planning. (Rashid Al-Jalahma, 2010). The studies have shown TQM implementation and its scale, not only differs from country to country but is also impacted by the industry and scale of organisation and the environment and infrastructure.

1.2 Objective

The paper aims to assess the extent of TQM implementation and brings out the diversity prevailing in the three sectors of Indian Economy- Primary, Secondary and Tertiary. The paper attempts to analyze the differences in acquaintance of organisations with TQM, presence of Quality control department in organisations and preferences of core elements of TQM in the sectors and draws out a true picture of the country's scenario with respect to the implementation of quality management practices.

2. MATERIALS AND METHOD

The research is based on primary data collected from respondents working in organisations across the three main sectors of Indian Economy.

2.1 Research Design

The present study is a qualitative research attempted to examine the empirical relationship between the sectors of economy and the adoption rate of TQM practices in India.

2.2 Research Hypothesis

The null hypothesis- H_0—There is no significant difference between sectors with respect to the implementation of TQM practices and all the core elements focused by organisations are same.
The alternative hypothesis- H_a—The three sectors show significant differences with respect to the implementations of TQM and do not have consensus in the core elements.

2.3 Population and Sample

The population of the study comprised of all the organisation working under the three main sectors of the Indian society. The sampling techniques used in this study is simple random sampling and consists of 40 sample units, 8 from primary, 12 from secondary and 20 from tertiary.

2.4 Tools and Instruments

A questionnaire was shared with around 300 working professionals and out of the responses received 40 responses were selected based on complete information availability and no repetition of organisations. The responses were tabulated and analyzed using pie charts, and percentages.

3. RESULTS AND DISCUSSIONS

3.1 Theoretical Knowledge

The primary sector is concerned with natural resources and constitutes Agricultural, forestry, fishing and mining. The Secondary sector consists of the industrial sector, engaged in construction activities and manufacturing of finished goods and tangible products and caters to the needs of potential consumers. The Tertiary sector is intangible in nature, concentrating on the services sector and consists of provision of services such as education, medical, hotel and finance needed by the consumers. (Prabhu, 2014)

3.2 Interpretations

The following interpretations could be concluded based on the questions asked to the respondents.

Ques1: Sector of the organisation surveyed

Table 1 (Sector of Organisation surveyed)

	Frequency	Percentage
Primary	8	20%
Secondary	12	30%
Tertiary	20	50%
Total	40	100%

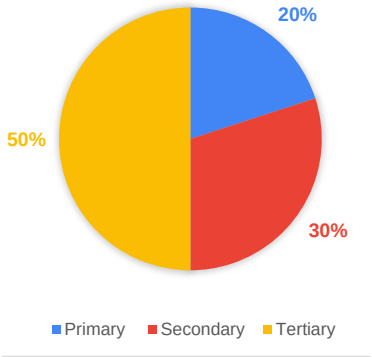

Fig. 1 pie chart representing the sectors of the organisation surveyed

According to various studies conducted, the Indian economy has been dominated by primary sector but the present study has 50 % of respondents from tertiary sector, which could be seen as the dominating sector for the study and secondary and primary sector constitutes to 30% and 20% of the respondents respectively, with primary being the minority in counts.

Ques 2: Are you aware about the term TQM

Table 2 (Are you aware about the term TQM)

Primary

	Frequency	Percentage
Yes	6	75%
No	1	12.50%
Maybe	1	12.50%
Total	8	100%

Secondary

	Frequency	Percentage
Yes	9	75%
No	1	8.33%
Maybe	2	16.66%
Total	12	100%

Tertiary

	Frequency	Percentage
Yes	14	70%
No	3	15%
Maybe	3	15%
Total	20	100%

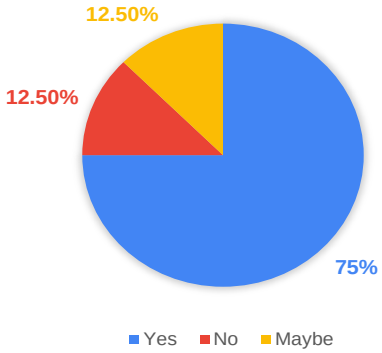

Fig. 2 pie chart representing TQM awareness in primary sector

The organisations in primary sector showcase a strong acquaintance with the term quality management and only 1 respondent, out of the 8 has never heard about it. 75% of the respondents were familiar with the term and the rest 25% accounts for the ones that were unaware of TQM and others who were unsure about it.

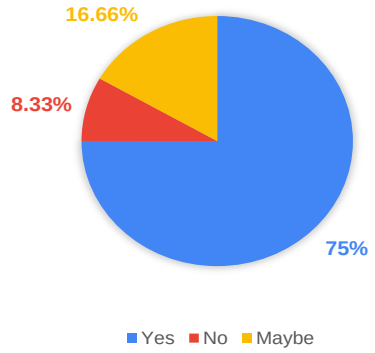

Fig.3 pie chart representing TQM awareness in secondary sector

In secondary sector 9 out of 12 respondents were acquainted with the term quality management and only 1 has never heard about it. 75% of the respondents were familiar with the term and the rest 25% accounts for the ones that were unaware of TQM and others who were unsure about it.

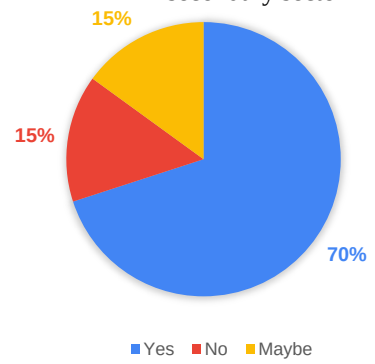

Fig.4 pie chart representing TQM awareness in tertiary sector

The dominating sector of the present study, the tertiary sector, on analysis represent that 70 % of the respondents were aware about the term TQM, i.e. 14 respondents and the rest 30 % includes an equal number of respondents who have never heard of TQM or are unsure about it.

Ques 3. Does your organisation practices Total Quality Management?

Table 3 (Does your organisation practices Total Quality Management)

		Frequency	Percentage
Primary	**Yes**	7	87.5%
	No	0	0.00%
	Maybe	1	12.5%
	Total	8	100%

		Frequency	Percentage
Secondary	**Yes**	9	75%
	No	1	8.33%
	Maybe	2	16.66%
	Total	12	100%

		Frequency	Percentage
Tertiary	**Yes**	13	65%
	No	5	25%
	Maybe	2	10%
	Total	20	100%

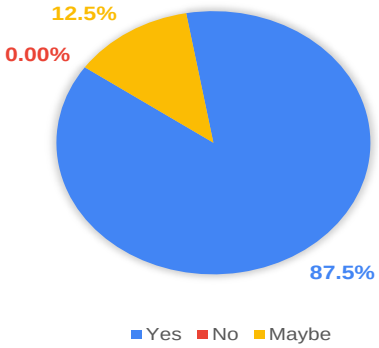

Fig. 5 pie chart representing TQM adoption in primary sector

The adoption rate of Total Quality Management in Primary Sector is significantly high with an 87.5% of organisations including mining organisation, manures manufactures, following TQM framework and practices. Only one of the respondents was unsure about such framework making 12.5% of organisation unsure about the adoption.

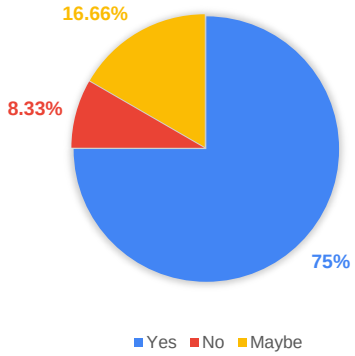

Fig. 6 pie chart representing TQM adoption in secondary sector

The secondary sector also depicts a positive image with respect to the adoption and implementation rate of Total Quality Management, 75% the organisations follow related framework and only 8.33% of organisation do not follow TQM while rest are unsure about it.

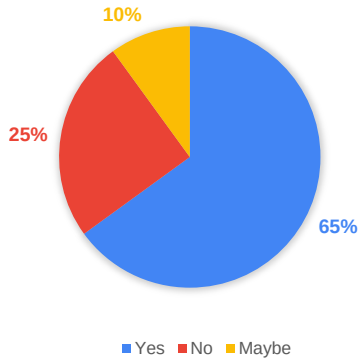

Fig.7 pie chart representing TQM adoption in tertiary sector

The adoption rates of TQM practices in tertiary sector is 65% as 13 organisations follow the practices. The other 35 percent represent the sum total of the organisations that do not follow TQM, i.e. 25% and the other 10% of respondents that are unsure about the TQM implementation in their organisation.

Ques 4: Does your organisation has a separate control department?

Table 4 (Separate Quality control department)

		Frequency	Percentage
Primary	**Yes**	3	37.5%
	No	5	62.50%
	Maybe	0	0.0%
	Total	8	100%
Secondary		**Frequency**	**Percentage**
	Yes	8	72.73%
	No	3	27.27%
	Maybe	0	0.00%
	Total	11	100%
Tertiary		**Frequency**	**Percentage**
	Yes	9	60%
	No	2	13.33%
	Maybe	4	26.67%
	Total	15	100%

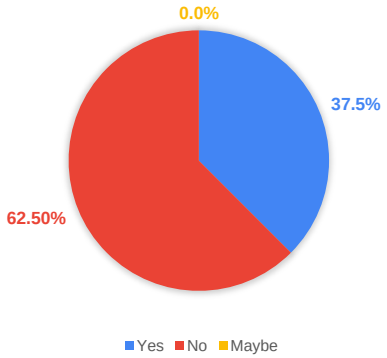

Fig.8 pie chart representing organisations with separate quality control department in primary sector

The picture depicted by primary sector despite of significantly high adoption rate is quite adverse. Out of 8 organisations, 5 organisations, making 62.5%, do not have a separate quality control department in place. The other 37.5% have a dedicated separate Quality Control department for quality management.

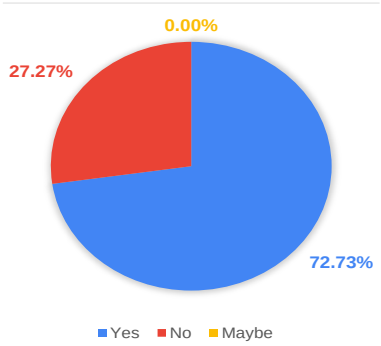

Fig.9 pie chart representing organisations with separate quality control department in secondary sector

The secondary sector has 72.73% of organisation, which refers to 8 organisations that have a separate Quality control department at place whereas the remaining 33.33% organisation do not have a separate department.

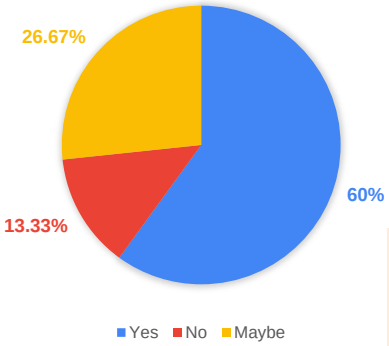

Fig.10 pie chart representing organisations with separate quality control department in tertiary sector

In tertiary sector 60% of the organisations have separate department for quality control, whereas 13.33% doesn't have a separate department and 26.67% respondents are unsure about their organisation having a separate Quality Control department.

Ques 5: What are the core elements that your organisation focus on in Quality Management?

Table 5 (Core elements followed in Quality control Department)

PRIMARY SECTOR		
Core Element	**Frequency**	**Percentage**
Management and Leadership	3	21.43%
Employee Empowerment	1	7.14%
Suppliers Quality	3	21.43%
Customer focus	3	21.43%
Training	3	21.43%
Tools of Quality	1	7.14%
Process improvement and Planning	0	0%
Total		**100%**

SECONDARY SECTOR		
Core Element	**Frequency**	**Percentage**
Management and Leadership	6	18.18%
Employee Empowerment	5	15.15%
Suppliers Quality	6	18.18%
Customer focus	7	21.21%
Training	4	12.12%
Tools of Quality	4	12.12%
Process improvement and Planning	1	3.03%
Total		**100%**

TERTIARY SECTOR		
Core Element	**Frequency**	**Percentage**
Management and Leadership	9	18.37%
Employee Empowerment	10	20.41%
Suppliers Quality	8	16.33%
Customer focus	9	18.37%
Training	7	14.29%
Tools of Quality	6	12.24%
Process improvement and Planning	0	0%
Total		**100%**

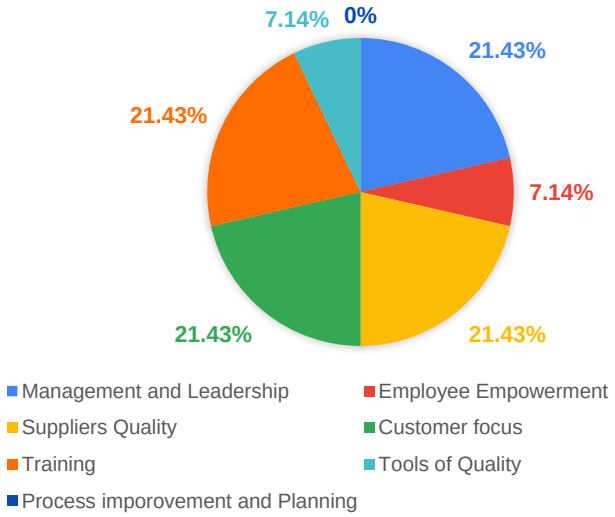

Fig.11 pie chart representing core elements focused in primary sector organisation

Among organisations in primary sector the emphasis of quality control department is laid on Management & Leadership, Suppliers quality, Customer focus, training. All four gained equal shares of responses. Whereas a few organisations lay emphasis on factors like Tools of quality, Employee empowerment and none of them considered planning and process improvement a necessary element for TQM success.

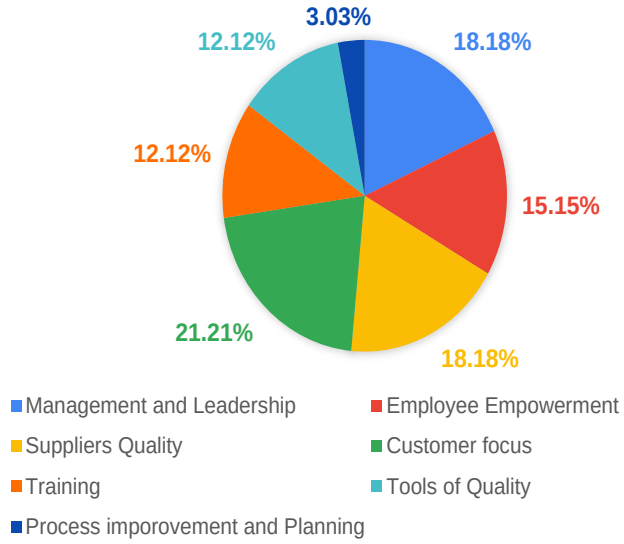

Fig.12 pie chart representing core elements focused in secondary sector organisation

In Secondary sector organisations emphasize more on customer focus than any other element. Focus on Suppliers quality, management & leadership could also be seen and a little on Employee empowerment followed by Training, tools of quality and the least emphasis is on Process improvement and planning.

Fig.13 pie chart representing core elements focused in tertiary sector organisation

Organisations in Tertiary sector focuses more on employee empowerment followed by customer focus, management & leadership then suppliers' quality, training then on tools of quality. And no organisation focus on process improvement.

3.2 Analysis

The diversity of sectors prevails in the study right from the number of respondents from all three sectors to the preferences of core elements in Quality Management, however, the dominance of primary sector in the Indian economy has been overshadowed by the domination of tertiary sector in the present study. The majority of the respondents were aware about the term Total Quality Management – TQM and also follow TQM practices and related framework, making the adoption rate significantly high at 72.5% (29 organisations) among the three sectors conclusive. However, only 20 organisations have a dedicated separate department responsible for inspection and compliance of quality management norms. The core elements considered inevitable by the respondents of the three sectors reveals that customer satisfaction is the primary element around which the concept of Quality Management revolves in all three sectors followed by management and leadership. Primary and Secondary sectors both agree with supplier Quality among the top three elements but for tertiary sector it is Employee empowerment that matters. The least preferred among the three sectors are tools of quality and process improvement and planning with training taking moderate significance among all three.

4. CONCLUSION AND IMPROVEMENTS

The aim of this paper was to examine the adoption of TQM policies and framework in Indian organisations under the three sectors. With a 72.5% per cent adoption rate, there appears to be many Indian organisations that correlate competitive advantages to having a focus on quality. The study, hence, acts as an evidence to the fact that India, in terms of all its organisations, in an attempt to expand market share and gain competitive edge, is focusing more on market needs and adapting to the economic changes with the primary focus on certain core elements of TQM success among all the three sectors of Indian economy. The present study also brings out the diversity prevailing in the three sectors of the economy with respect to the awareness about Total quality management and adoption rates of TQM policies and framework. Primary and Secondary sectors as compared to the tertiary sector have significantly high awareness and adoption rates. However, all three sectors have room for improvement, from adopting TQM practices to its implementation as many of the organisations that follow TQM do not have a separate quality control department in place to keep a check on management system, products being offered by the organisations. The core elements of TQM success also depict a diverse image with Primary sector focusing mainly on the customer satisfaction, supplier quality and management and leadership, which is appropriate looking at the kind of function they provide. However, they lack focus on process improvement and planning, which are important elements for long term success. In secondary sector customer focus along with the process of manufacturing the good/product is the main objective and the least emphasis is laid down on the Process improvement and planning which is a not healthy, since it is easy for an organisation to steer away from their main objective. In the tertiary employee empowerment is prioritized over customer satisfaction, but considering the nature and requirements of Tertiary sector, the main emphasis of tertiary sector shall be on customer focus and then on employee empowerment or an equal emphasis on both. Overall, the results here indicate high adoption rate of TQM practices along with main focus on customer satisfaction and good managerial and leadership being the most significant elements for TQM success. The Future work on this study can be carried out in the following directions:

- The number of responses can be increased by contacting more organisations.
- The scale (turnover) based comparison can be conducted along with sector comparison.
- The TQM adoption rate of India could be compared with other countries.

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