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Research Article

A Study On The Barriers Associated With The Implementation Of Total Quality Management Practices By The Service And Manufacturing Medium Enterprises Of Kamrup (Rural) And Kamrup (Metropolitan) Districts Of Assam

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ABSTRACT

By implementing Total Quality Management, organizations can identify areas for improvement, implement continuous improvement initiatives, and strive for excellence in all aspects of their operations. However, there are several barriers to effective implementation of TQM. This includes lack of business experience and knowledge, financial as well as human resource limitations. Hence, this study aimed to identify such barriers in case of Service and Manufacturing Medium Enterprises in Kamrup (Rural) and Kamrup (Metropolitan) Districts of Assam in North East India. Data was obtained through survey of owners and employees of 65 service based and 77 manufacturing based medium enterprises of the districts. The findings revealed barriers like inability to change organizational culture, lack of preparation of budgets and reports etc. faced by the owners of the enterprises. Lack of rewards and recognition, failure of the management to continually improve etc. were some of the challenges faced by employees of these enterprises.

Keywords: Total Quality Management, implementation, Medium Enterprise, Service Enterprise, Manufacturing Enterprise, barriers.

Introduction:

Total Quality Management (TQM) is a management philosophy that focuses on continuous improvement of product and process quality, to meet customer needs and enhance overall organizational performance (Oluwatoyin and Oluseun, 2008; Hoang, Igel and Laosirihongthong, 2010). The goal of TQM is to create a culture of quality throughout the organization, involving all members and functions (Oakland, 1989; Talib, 2013). According to Deming (1986), TQM utilizes specific principles, practices, and techniques to enhance business profitability by minimizing rework, rejects, waste, customer complaints and associated costs. The International Organization for Standardization (ISO 8402, 1986) defines TQM as a management approach centred on quality, involving the participation of all members of an organization, and aiming for long-term success through customer satisfaction and benefits to all stakeholders, including society (Powell, 1995). Sila (2007) stated that TQM helps in improving the quality of products and reduces scrap, rework, and need for buffer stock by establishing a stable production process.
TQM has been widely implemented in various industries, including manufacturing, education, government, service sectors, and even the National Aeronautics and Space Administration (NASA) (Maheskumar, Gautham, Santhosh, Vetrivel and Satheesh, 2017). Ugboro and Obeng (2000) revealed that TQM benefits include improved quality, customer satisfaction, cost reduction, efficient delivery of products and services, and overall higher performance. Its goal is to embed a culture of quality awareness throughout the organization, promoting continuous improvement and customer satisfaction in all processes and activities

(Arawati, 2005). TQM has gained significant attention from managers and researchers over the last two decades. Numerous empirical studies have shown that implementing TQM positively impacts organizational performance, with benefits including improved quality, increased customer satisfaction, reduced costs, efficient product and service delivery, and overall higher performance (Cornelison, 2013; Mendes, 2012).
Different experts have attempted various definitions regarding TQM from time to time (Mazumder, Bhattacharya and Yadav, 2011). It may be defined as performance superiority in delighting customers. The means used are people, commitment towards employing organizational resources to provide value to customers, and by doing the right things in the first attempt and every time (Choda, 2003).

Importance of the Study:

By adopting TQM principles and practices, organizations can identify areas for improvement, implement continuous improvement initiatives, and strive for excellence in all aspects of their operations (Yusuf, Gunasekaran, and Dan, 2007). It is essential for the long-term survival of medium enterprises as it improves competitiveness of organizations by focusing on customer satisfaction, streamlining processes, reducing waste, and fostering a culture of continuous improvement (Yusof and Aspinwall, 2000). By consistently delivering high-quality products and services, medium enterprises can build customer loyalty, strengthen their market position and ensure their sustainability in the face of evolving market demands.
However, there are several barriers towards effective implementation of TQM in medium organization. This includes lack of business experience and knowledge, financial constraints and human resource limitations (Burrows, 1992). Medium-sized enterprises can overcome these obstacles by taking a systematic and phased approach to TQM implementation, seeking support and guidance from external sources, and leveraging available resources efficiently. Furthermore, the long-term benefits of TQM such as improved operational efficiency, increased customer satisfaction, and enhanced competitiveness can outweigh the initial challenges and contribute towards sustained success of any organization (Talib, 2013). This study intends to explore and understand the barriers associated with the implementation of TQM practices in service and manufacturing enterprises.

Literature Review:

Many studies have been conducted to identify the challenges faced by different enterprises in adopting Total Quality Management (TQM) practices. **Yusof and Aspinwall (2000)** discussed various issues confronting small businesses embarking on TQM. They found that there are strengths and weaknesses associated with the adoption and implementation of TQM in small businesses. According to them, small businesses must be presented with a TQM approach that is attractive to them so that they can improve in a short span, with a view towards long-term sustainability.
Gupta, McDaniel and Herath (2005) developed three major constructs from the review of literature which included organizational culture, leadership and employee commitment. According to them, a firm should gain an understanding of customer needs and expectations before designing and implementing service quality improvements. This will improve business processes, service quality leading to customer satisfaction.
Sudha (2013) highlighted the essence of TQM and explained how higher education institutions can improve the quality by implementing TQM practices. The results indicated that the measures taken by respondents to measure the success of TQM implementation are students' performance based on assignments and performance in final examinations in any course.
Dahiya and Bhatia (2013) discussed the challenges in implementing TQM. According to them, the challenges that halt the purpose of quality management are constraints imposed by quality culture, autocratic style of leadership, lack of employee commitment, improper channel of communication, quality certifications viewed as bureaucratic exercise and problems in identifying customer needs.
Merih (2016) provided a general understanding of TQM based on quality standards, benchmarking, and lean production methods. According to the author, TQM together with lean production and Just-in-time, with strong support and commitment from the senior management, good understanding from the employees can bring significant improvements to the firm performance by reducing cost and creating more value.
Fundin, Bergquist, Eriksson, and Gremyr (2018) established three distinct overarching themes of challenges of Quality Management. The first theme relates to making organizations adaptable to changing environment. The second theme relates towards making quality a strategic concern for owners. The third theme is regarding transferring the ownership of quality from quality professionals to managers.

Research Gap:

Based on the above discussion, it is observed that many research studies were conducted on the issues and challenges associated with proper implementation of TQM practices at the national and international levels. However, none of them have specifically focused on the service and manufacturing medium enterprises operating in Kamrup (Rural) and Kamrup (Metropolitan) districts of Assam in North East India. The present study, therefore, aims to address this significant gap. This also involved a comparative analysis in this regard between these two types of enterprises. This has been done to identify the similarities and differences in the challenges faced by these enterprises in adopting TQM practices.

Objective of the study:

The objective of this study is to find out the barriers associated with the implementation of Total Quality Management (TQM) practices adopted by service and manufacturing medium enterprises of Kamrup (Rural) and Kamrup (Metropolitan) districts of Assam.

Research Methodology:

The research design adopted in this study was exploratory and descriptive. Here, the researchers adopted quantitative research methods encompassing both primary and secondary data. The population of this study included all the Service and Manufacturing Medium Enterprises operating in the Kamrup (Rural) and Kamrup (Metropolitan) Districts of Assam registered under the Udyog Aadhar Memorandum till June 30, 2020. Accordingly, the total number of medium enterprises in these districts was 142, of which 77 belong to the manufacturing sector and 65 belong to the service sector. The respondents (comprising primary data sources) for this study included the owners and employees of these enterprises. Due to absence of an appropriate sampling frame covering the above-mentioned respondents in most of these enterprises, Convenience Sampling technique was adopted to select them from the above study population. Required primary data was collected through a survey involving personal interviews using two sets of structured questionnaires each for the respondent owners and employees. These questionnaires involved five-point Likert scale used to rank the perceptions of respondents on challenges faced during TQM implementation. The above scale was represented as '1', '2', '3', '4' and '5' for *strongly agree*, *agree*, *neutral*, *disagree*, and *strongly disagree*, respectively. Cronbach's alpha was found to be 0.85 and 0.78 for the above questionnaire concerning owners and employees, respectively. This indicated satisfactory reliability of these two questionnaires.

Required secondary data was collected from the District Industries and Commerce Centre, Guwahati (Kamrup (Metropolitan) district) and District Industries and Commerce Centre, Mirza (Kamrup (Rural) district). Relevant research theses, journal articles, books and magazines etc. were also studied for secondary information.

After gathering the responses from the above respondents, collected data was organised, tabulated, and examined. The demographic profile of the respondents was thereafter examined using frequencies and percentages. Crosstabulation method was used to identify the number of respondents facing different challenges while implementing TQM in their ventures.

Findings:

1. *Profile of the respondents:*

Table A.1: Demographic profile of owners of the Service and Manufacturing Medium

Demographic Variables	Particulars	Type of organization		Total	Percentage (%)
		Service Based	Manufacturing Based		
Gender	Male	*44*	*53*	97	68.3
	Female	21	24	45	31.7
	Total	**65**	**77**	**142**	**100**
Age group	Below 30 years	4	3	7	4.9
	30-45 years	28	*46*	74	51.1
	Above 45 years	*33*	28	61	43
	Total	**65**	77	**142**	**100**
Experience in years	Below 5 years	4	14	18	12.7
	5-15 years	28	*45*	73	51.4
	Above 15 years	*33*	18	51	35.9
	Total	**65**	**77**	**142**	**100**
Number of employees	Less Than 100	*33*	31	64	45.1
	101-500	30	*33*	63	44.4
	501-1000	2	9	11	7.7
	Above 1000	0	4	4	2.8
	Total	**65**	**77**	**142**	**100**
Awareness and knowledge of TQM	Excellent	19	23	42	29.6
	Very Good	*34*	*35*	69	48.6
	Good	12	19	31	21.8
	Total	**65**	**77**	**142**	**100**

Source: Field survey

Table A.1 shows that 68.3% of owners of the Medium Enterprises of Kamrup (Rural) and Kamrup (Metropolitan) districts of Assam were male. The majority of them, i.e., 51.1% belonged to the age group of 30-45 years and 51.4% have experience of more than 5 years. From the study, it was found that 44.4% of

Medium Enterprises have more than 101-500 employees. According to the owners, 48.6% of them were aware of Total Quality Management (TQM) principles and have a very good knowledge of it.

Table A.2: Demographic profile of employees of Service and Manufacturing

Demographic Variables	Particulars	Type of organization		Total	Percentage (%)
		Service Based	Manufacturing Based		
Gender	Male	96	145	241	65.3
	Female	81	47	128	34.7
	Total	**177**	**192**	**369**	**100**
Age group in Years	Below 30 Years	10	6	16	4.3
	31-45 years	82	70	152	41.2
	46-60 Years	74	104	178	48.2
	61 & above	11	12	23	6.2
	Total	**177**	**192**	**369**	**100**
Experience in Years	Below 5 Years	15	5	20	5.4
	5-15 Years	117	74	191	51.8
	Above 15 Years	45	113	158	42.8
	Total	**177**	**192**	**369**	**100**

Source: Field survey

Table A.2 shows that 65.3% of the employees of the Medium Enterprises of the above districts were males. 48.2% of the employees belonged to the age group of 46-60 years of age and 51.8% of the employees have working experience of more than 5 years.

2. ***Barriers associated with the implementation of TQM practices faced by the owners of the Medium Enterprises:*** From the literature review eight (8) barriers were found that are faced by the owners during of the implementation of TQM in the Medium Enterprises. These includes inability to change organizational culture, lack of preparation of budgets and reports, costly consultancies and training programs, lack of resources, failure of the employees to continually improve, lack of understanding the TQM principles, employees' resistance to change (too busy), and inefficient measurement techniques and lack of access to data and results. This section examines the rating of owners on each of the barriers faced in implementation of TQM principles in their enterprise and if there is a difference between the service and manufacturing enterprise owners in the rating of each of these challenges.

Table A.3. Cross tabulation- Owners' Experience and Barriers for TQM

Type of activity →		Service				Manufacturing			
Barriers	Level of agreement (acceptance)	Experience in years				Experience in years			
		Below 5	5-15	Above 15	Total	Below 5	5-15	Above 15	Total
Inability to change Organizational Culture	Strongly Agree	0	4	5	9	5	15	6	26
	Agree	4	21	25	50	9	28	12	49
	Neutral	0	3	3	6	0	2	0	2
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Inefficient Measurement Techniques and Lack of Access to Data and Results	Strongly Agree	4	12	14	30	7	15	10	32
	Agree	0	16	19	35	7	29	8	44
	Neutral	0	0	0	0	0	1	0	1
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Failure of the employees to Continually Improve	Strongly Agree	1	11	10	22	4	15	10	29
	Agree	3	16	23	42	9	28	7	44
	Neutral	0	1	0	1	1	2	1	4
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Lack of understanding the TQM principles	Strongly Agree	2	9	17	28	6	19	11	36
	Agree	2	19	16	37	8	25	7	40
	Neutral	0	0	0	0	0	1	0	1
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Lack of preparation of budgets and reports	Strongly Agree	1	7	7	15	4	20	9	33
	Agree	3	19	26	48	10	24	9	43
	Neutral	0	2	0	2	0	1	0	1
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Employees' Resistance to change (Too busy)	Strongly Agree	3	14	11	28	4	17	9	30
	Agree	1	14	22	37	10	27	9	46
	Neutral	0	0	0	0	0	1	0	1
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Lack of resources	Strongly Agree	1	12	7	20	4	15	3	22

Table A.3. Cross tabulation- Owners' Experience and Barriers for TQM

Type of activity →		**Service**				**Manufacturing**			
Barriers	**Level of agreement (acceptance)**	**Experience in years**				**Experience in years**			
		Below 5	**5-15**	**Above 15**	**Total**	**Below 5**	**5-15**	**Above 15**	**Total**
	Agree	3	15	*26*	44	10	*29*	15	54
	Neutral	0	1	0	1	0	1	0	1
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**
Costly consultancies, training programs.	Strongly Agree	2	9	7	18	7	18	10	35
	Agree	2	19	*26*	47	7	*27*	8	42
	Neutral	0	0	0	0	0	0	0	0
	Total	**4**	**28**	**33**	**65**	**14**	**45**	**18**	**77**

Source: Field survey

From Table A.3, it is seen that in case of service enterprises, majority of the respondents with more than 15 years of experience believed that inability to change organizational culture, and lack of preparation of budgets and reports are the major constraints for proper TQM implementation. Same observations have been noticed in case of costly consultancies, training programs, lack of resources, failure of the employees to continually improve, employees' resistance to change (too busy), and inefficient measurement techniques and lack of access to data and results with respect to service enterprises. Also, majority of the respondents with 5 to 15 years of experience believed that lack of understanding the TQM principles is a major constraint in the above regard. On the other hand, for manufacturing enterprises, respondents with less than 15 years of experience perceived that all the eight (8) points as major hindrances towards successful TQM implementation (refer to Table A.3).

Table A.4. Cross tabulation- Owners' Awareness regarding TQM and Barriers for TQM

Type of activity →		**Service**				**Manufacturing**			
Barriers	**Level of agreement (acceptance)**	**Awareness of TQM**				**Awareness of TQM**			
		Excellen	**Very Good**	**Good**	**Tota**	**Excellen**	**Very Good**	**Good**	**Tota**
Inability to change Organizational Culture	Strongly Agree	4	3	2	9	7	11	8	26
	Agree	15	*26*	9	50	14	*24*	11	49
	Neutral	0	5	1	6	2	0	0	2
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**
InefficientMeasurement Techniques and Lack of Access to Data and Results	Strongly Agree	10	15	5	30	10	16	6	32
	Agree	9	*19*	7	35	12	*19*	13	44
	Neutral	0	0	0	0	1	0	0	1
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	77
Failure of the employees to Continually Improve	Strongly Agree	10	10	2	22	8	15	6	29
	Agree	9	*23*	10	42	14	*18*	12	44
	Neutral	0	1	0	1	1	2	1	4
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	77
Lack of understanding the TQM principles	Strongly Agree	8	15	5	28	11	17	8	36
	Agree	11	*19*	7	37	11	*18*	11	40
	Neutral	0	0	0	0	1	0	0	1
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**
Lack of preparation of budgets and reports	Strongly Agree	2	9	4	15	9	17	7	33
	Agree	16	*24*	8	48	14	*18*	11	43
	Neutral	1	1	0	2	0	0	1	1
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**
Employees' Resistance to change (Too busy)	Strongly Agree	7	13	8	28	10	14	6	30
	Agree	12	*21*	4	37	13	*20*	13	46
	Neutral	0	0	0	0	0	1	0	1
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**
Lack of resources	Strongly Agree	3	13	4	20	6	13	3	22
	Agree	15	*21*	8	44	17	*21*	16	54
	Neutral	1	0	0	1	0	1	0	1
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**
Costly consultancies training programs	Strongly Agree	4	9	5	18	9	*19*	7	35
	Agree	15	*25*	7	47	14	16	12	42
	Neutral	0	0	0	0	0	0	0	0
	Total	**19**	**34**	**12**	**65**	**23**	**35**	**19**	**77**

Source: Field survey

From Table A.4, it can be said that most respondents of both service and manufacturing enterprises having a "very good knowledge" of TQM perceived that the all the above-mentioned eight (8) points as major constraints for proper TQM implementation. It is to be noted in Table A.3 and A.4, that there were no responses for *disagree* and *strongly disagree*.

3. Barriers associated with the implementation of TQM Practices faced by the employees of the Medium Enterprises: From the above literature review, eight (8) barriers were observed to be faced by the employees during implementation of TQM practices in the Medium Enterprises. These include lack of rewards and recognition, failure of the management to continually improve, lack of resources, improper planning, inadequate use of empowerment and teamwork, paying inadequate attention to internal and external customers, lack of continuous training and education and incompatible organizational structure and isolated individuals and departments.

Table A.5. Cross tabulation- Employees' Experience and Barriers for TQM

Type of activity →		**Service**				**Manufacturing**			
Barriers	**Level of agreement (acceptance)**	**Experience in Years**				**Experience in Years**			
		Below 5	**5-15**	**Above 15**	**Total**	**Below 5**	**5-15**	**Above 15**	**Total**
Improper planning	Strongly Agree	3	22	11	36	2	24	37	63
	Agree	12	*95*	34	141	3	50	*72*	125
	Neutral	0	0	0	0	0	0	4	4
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Lack of Continuous Training and Education	Strongly Agree	4	37	10	51	2	24	33	59
	Agree	11	*80*	35	126	3	49	*80*	132
	Neutral	0	0	0	0	0	1	0	1
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Incompatible Organizational Structure and Isolated Individuals and Departments	Strongly Agree	6	42	13	61	2	25	46	73
	Agree	9	*74*	31	114	3	49	*65*	117
	Neutral	0	1	1	2	0	0	2	2
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Paying Inadequate Attention to Internal and External Customers	Strongly Agree	4	29	19	52	1	19	32	52
	Agree	11	*87*	26	124	3	55	*79*	137
	Neutral	0	1	0	1	1	0	2	3
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Inadequate use of Empowerment and Teamwork	Strongly Agree	5	31	14	50	2	28	34	64
	Agree	10	*86*	31	127	3	45	*78*	126
	Neutral	0	0	0	0	0	1	1	2
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Failure of the management to Continually Improve	Strongly Agree	5	27	5	37	1	17	42	60
	Agree	9	*79*	33	121	4	56	*71*	131
	Neutral	1	11	7	19	0	1	0	1
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Lack of resources	Strongly Agree	4	22	17	43	1	21	26	48
	Agree	11	*88*	27	126	4	53	*86*	143
	Neutral	0	7	1	8	0	0	1	1
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**
Lack of rewards and recognition	Strongly Agree	5	17	6	28	1	18	25	44
	Agree	10	*90*	36	136	4	56	*85*	145
	Neutral	0	10	3	13	0	0	3	3
	Total	**15**	**117**	**45**	**177**	**5**	**74**	**113**	**192**

Source: Field survey

From Table A.5, it can be concluded that there is a similarity in the perceived major constraints of TQM implementation between service and manufacturing medium enterprises. This was based on the years of experience of employees. In service enterprises, majority of the respondents with 5-15 years of experience perceived all the above eight (8) points as constraints for proper TQM implementation. In case of manufacturing enterprises, majority of the respondents with more than 15 years of experience perceived all the above eight (8) points as hindrances for proper TQM implementation. It is to be noted in Table A.5, that there were no responses for *disagree* and *strongly disagree*.

Discussion:

This study revealed issues like inability to change organizational culture, lack of preparation of budgets and reports, costly consultancies, training programs, etc. faced by the owners of both service and manufacturing

medium enterprises. These issues posed challenges while implementing Total Quality Management (TQM) practices. While lack of rewards and recognition, failure of the management to continually improve, lack of resources, paying inadequate attention to internal and external customers, etc. were some of the challenges faced by the employees of both these enterprises.

The study suggests that the enterprises encounter similar challenges while implementing TQM practices effectively. This is regardless of the owners' experience levels and awareness. The employees from different experience levels in both the sectors also recognize and identify similar challenges in implementing TQM. The study revealed that the two major problems faced by the above-mentioned enterprises are financial and resource constraints relating to time, manpower, technical expertise, and managerial expertise. So, these enterprises must be presented with a proper attractive TQM approach in the sense that it does not promise to improve everything or to solve every problem but rather help them improve in a short time, aiming towards sustenance. The top management needs to be committed to quality management implementation. Improved communication between management and employees is required to ensure a better understanding of the enterprises' objectives. They must ensure that all their processes are documented so that there is a common understanding regarding these within different functional departments.

Conclusion:

Regarding effective implementation of TQM practices, service and manufacturing medium enterprises face challenges like lack of available quality system documentation, lack of understanding of the process, high cost to implement TQM, lack of TQM exposure and lack of planning. Therefore, it is essential for them to address these challenges and develop strategies to implement TQM successfully. By enforcing a total quality manual and incorporating quality control and assurance mechanisms into all processes, these enterprises can enhance their competitiveness in the global market and ensure higher client satisfaction with their products. This, in turn, can help prevent cost overruns and delays leading towards profitability and survival in the future.

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