

The challenges of implementing TQM system in Omani SMEs

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Abstract: SMEs have been consistently and continuously highlighted as the backbone of the economy. Their contributions arise in areas of contributing to national employment, national economic activities, resource utilization as well as the support the balanced regional economic growth. Although that, SMEs face many challenges from different perspectives, one of these perspectives is the need to implement Total Quality Management (TQM) systems to assure the high quality of offered goods and services and as a tool to continuously improve themselves and achieve their goals. The objective of this article is to investigate the different challenges face the implementation of TQM systems in Omani SMEs. The research methodology is the quotative method through survey technique. A questionnaire has been designed and distributed on a sample of 100 SMEs in different Omani sectors. Main findings of the research is that all challenges face the implementation of TQM in Omani SMEs are at the average level.

Keywords: TQM, challenges of TQM implementation, SMEs, Omani SMEs

I. INTRODUCTION

Small and Medium Enterprises (SMEs) are very much beneficial and responsible for making a strong economy in the long run time. They contribute in generate more than 80% of GDP for many of Asian economies [1]. However, the scenario is different for Oman, as SMEs contribution in the GDP is less about 20% and their employment contribution is well below 30% [2].

Given the events that have taken place since 2014, the government of Oman is actively trying to diversify the economy and is no longer solely dependent upon the conditions of operations in the oil and gas but it is getting revenue from balanced sources. To do this, the SMEs are being recognized as one of the protentional areas to be improved. This can be done through two main pillars, the first is efforts are made by government and other authorities to support Omani SMEs, while the second pillar is the initiatives by SMEs to can compete and sustain in the market. Having and implementing TQM system is a technique that enables Omani SMEs to improve and growth in the long run. TQM means that the company will make all given efforts from all areas of its business to achieve a state of high quality and based on this it will considered as a state of high value [2].

The implementation of TQM system can drastically improve the chances for growth, development and upliftment of SMEs. Implementation of TQM systems enables SMEs to serve their customers more effectively and completely. Further, it helps to minimize the cost as it

ensures that the chance and scope for errors at the lowest possible limit.

Despite the several advantages brought out by TQM, SMEs has shown that TQM is always a challenging to be applied by the SMEs[1]. The main objective of this paper is to investigate the different challenges face the implementation of TQM in Omani SMEs. This introductory chapter is followed by the literature review (chapter two). The third chapter provides the research methodology followed by the findings in the fourth chapter. Finally, the discussion and conclusion are reflected in the fifth chapter.

II. LITERATURE REVIEW

TQM is a well-researched subject and topic in the realm of quality management. TQM-based practices of improving quality were initiated in the 1920s when some of the basic practices to improve quality were devised in the US as well as in Japan. However, during the 1950s, a range of statistical approaches intended to assist in controlling quality were developed and along with it the concept of TQM as a comprehensive method of improving quality was developed by the combined efforts of Deming and Juran [3]. TQM is a management framework that is directly based and build upon the idea that whenever any company is including all the members from low-level to high level to make a focus on quality and its improvement then the company will be successful in handling and managing quality more effectively [1]. Other define TQM is an internal process within the company that connects the collective efforts of the quality management, development

and improvement of different people and groups in a specific way that leads to high level quality and its results [2].

A different definition of TQM states that TQM involves a known methodology which is intended to continuously improve the quality of all given organizational processes while trying on the knowledge as well as the practices and principles of behavioral sciences, economic theories as well as process analysis [4].

TQM is trying to put more focus on the steps and on the matter is that the company used for making their products. TQM states that the company should make clear about what type of processes are there in the company, it should make monitoring of the processes and it should make a measurement of the performance. She explained that TQM takes the data from different processes and then it study the data to get the final result [5]. The main idea of TQM is to eliminate all of the waste and to increase the efficiency with which the business activities are carried out in the company [6].

SMEs are understood as those organizations that are either falling into a category of being small or otherwise of medium-sized. But each country has different view and different definition for SME. The difference of SMEs definition from one economy to another may be resulted from differences in economic and social conditions between them. In Oman, the definition of SME is that micro-companies are those that have less than five workers and sales annually that are less than 25,000. Small companies are those who have 5-9 workers and annual sales between 25,000 and 250,000., the medium-sized organizations are those who are employing between 10 to 99 workers and have annual sales in between 250,000 and 1.5 million [7].

The main **advantage of implementing TQM** as that it is a special method and approach that is focused directly upon the customers and their satisfaction level. In this way, whenever any company has used or is planning to use the TQM approach then they will be working towards the objective of raising the level of customer satisfaction which can help them achieve successful business [3].

The implementation of TQM in companies are directly responsible for the improvement of the level of quality, satisfaction, efficiency of the SMEs and leading to an overall competitive edge [8]. Moreover, TQM is going to lead to an improvement in the level and rate of satisfaction of the customers and this in turn is going to result in a situation there will be improvement in customer loyalty. Such loyalty is expected to increase business options and opportunities to the companies [4]. SMEs can increase the level of their performance by strictly following and implementing TQM that can provide them an opportunity to compete with the larger corporations in the market on the basis of quality [1].

Many researchers have tried to examine the general set of challenges that businesses will have to faced when they try to apply TQM. Some literature referred to economic challenges such as the global or local slowdown in the business activities or economy would pose a direct challenge to TQM application [8]. On the other hand, others referred that not all workers or employees are always ready to adopt the TQM efforts because under TQM they have to carry on and conduct a lot of tasks and activities so many of the workers challenge the application of TQM [9].

One of challenges face the implementation of TQM in SMEs is the sever competition, as cheap foreign substitute products then it becomes a challenge to implement TQM because in many cases the customers are giving preference to the price and focus on TQM can lead to a lot of cost and effort is being applied [10].

A study about challenges face the TQM implementation in SMEs in developing countries found that the general rate of applying and accepting TQM in Yemeni companies was very low because the overall culture found in the Yemeni companies was maintaining a low level of importance on quality. Therefore, where the market for the nation is having little consideration for quality or TQM then it becomes a challenge for companies to adopt these [11]

Another study found that the lack of support received towards application of TQM practices by the top management of the company made it difficult and challenging to apply TQM to all subsequent levels of the company and its operations [12].

On the other hand, another study found that there is no clear and straightforward method that SMEs can take when they want to apply TQM. They write that TQM is a very complex and challenging model of application which require detailed study and even sometimes TQM require the assistance of experts and so TQM can only be strong and enough in larger organizations that can afford to bring out qualified members or consultants to work with them in the successful application of TQM [13].

III.METHODOLOGY

Research approach and research design: The inductive approach is the followed approach in this research, as it , generally, the most feasible in the given circumstances of studying TQM application because this is a technique that is able to be combined with a quantitative research along with the feasibility of using a survey design approach. While both approaches are useful, the fact of using a survey approach is most feasible considering the potential for recruiting many participants from SMEs sector in Oman.

Considering the broader context for SMEs in Oman will be very useful to bring in many perspectives on benefits and challenges that are closely linked with TQM. Moreover,

the adoption of a quantitative technique is very useful to the extent of ensuring that the views gathered on challenges and benefits of TQM can be substantiated from objective and verifiable point of view that is the main application connected with a numerical based research study. Even the participants are supported in quickly providing the necessary data to compile the analysis completed by going for quantitative data collection

Data Collection: The investigation in this research depended mainly on the adoption and usage of primary data. It is a must for this research because there is no data available about the given an SMEs within the Omani context and therefore in order to fulfil the research objectives. Among the several choices to know about the benefits and challenges of TQM, the most prominent technique would be questionnaires. Questionnaires can bring out the fresh and raw data which will be directly connected to the objectives of studying TQM and this can be done by simply linking a series of questions to the research objectives and presenting them for the research participants which is to be succeeded by the steps of analysis.

Sampling Method and Technique: Based on the subjectivity of the research and its' objectives, it is important to choose participants from the SMEs who have an inclination and knowledge about the different aspects of SMEs & TQM and to what extent whether these are fitting together and if they fit what are the challenges. Since the research takes up many of the participants from different fields of study and application, it is useful to use a broad selection of at least 100 participants taken from different sectors of the SMEs that are in a majority in Oman that include the services, industrial, manufacturing and so on. Such a large grouping of members will be rather sufficient to draw brought inferences on aspects or topics of TQM.

Data Analysis: In the given scenario of this research study, the nature of the data collected is from the Likert scale. The collected data were analysed via use a range of frequency based statistical tests to get an idea or estimation about what the participants are saying about each of the questions in the scenario. ANOVA was implemented to identify to what extent the males and females face different challenges in the implementation of TQM in their ventures.

IV. FINDINGS AND ANALYSIS

Demographic Details of the Participants: Out of the 100 SME participants, the number of men respondents is higher than women. The percentage of men in SMEs Sector Company was about 56% in contrast the proportion of women is 44%. However, there is a balance in the gender profile of the SME participants which will not skew the results

Table no. 1 – Gender distribution of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	56	56.0	56.0	56.0
	female	44	44.0	44.0	100.0
Total		100	100.0	100.0	

Distribution of respondents on different sectors: Out of the 100 SME participants, services are mostly in sector, and 15% of trade. Further, it shows that 14% are from manufacturing. The number of SME participants from service organizations are much larger and comprise 71% of the Sample because in reality there are a greater number of SMEs in Oman that are offering services so this is represented in the dark also.

Table no. 2 – the Distribution of respondents on different sectors

		Frequency	Percent
Missing	Manufacturing	14	14.0
	Services	71	71.0
	Trade	15	15.0
	Total	100	100.0

Challenges of implementing TQM within SMEs:

The literature found 6 challenges face the implementation of TQM in SMEs: Lack of knowledge; High cost; Long time of implementation; Focus on pricing; organizational culture and complexity. This section examines the rating of Omani SMEs' owners of each of them as a challenge face the implementation of SMEs in their institutions and if there is a difference between male and female SMEs' owners in the rating of each of these challenges.

Lack of knowledge:

TQM is a field of study and practice where there is an intrinsic need for specialized knowledge, understanding and application of TQM practices by highly skilled individuals which means that unless the people are present the TQM will not be successful [14].

Table no. 3 - Frequencies of lack of knowledge as a major TQM challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	10	10.0	10.0	10.0
disagree	23	23.0	23.0	33.0
undecided	32	32.0	32.0	65.0
Agree	23	23.0	23.0	88.0
strongly agree	12	12.0	12.0	100.0
Total	100	100.0	100.0	

Omani SMEs' owners related the lack of knowledge at a middle level of challenge facing them. 33% of them are strongly disagree or disagree that it's a challenge facing them, 32% undecided and 35% of them agreed or strongly agree that lack of knowledge or experience and trained staff were a major challenge they were faced to bring out TQM. The average rating for this challenge is 3.04 (out of 5).

Table no. 4 - ANOVA for lack of knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.776	2	.888	.652	.523
Within Groups	132.064	97	1.361		
Total	133.840	99			

ANOVA found that there is no significant difference between male and female response to the lack of knowledge as a potential challenging area that SMEs are unable to come out of.

High cost:

High costs are somewhat the major reasons as why the SMEs start to avoid introduction of the TQM practices because they feel that they cannot justify the costs that he TQM is going to require because maybe they feel that the benefits are not going to come as much as the costs and so they are likely to avoid it [15].

Table no. 5 - Frequencies on high costs as a major TQM challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	13	13.0	13.0	13.0
disagree	28	28.0	28.0	41.0
undecided	15	15.0	15.0	56.0
agree	26	26.0	26.0	82.0
strongly agree	18	18.0	18.0	100.0
Total	100	100.0	100.0	

Omani SMEs' owners related the high cost at a middle level of challenge facing them. 41% of them are strongly disagree or disagree that it's a challenge facing them, 15% undecided and 44% of them agreed or strongly agree that high cost was a major challenge they were faced to bring out TQM. The average rating for this challenge is 3.08 (out of 5).

Table no. 6 - ANOVA for high costs

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.286	2	6.643	5.094	.008
Within Groups	126.504	97	1.304		
Total	139.790	99			

Between Groups	2.039	2	1.019	.564	.571
Within Groups	175.321	97	1.807		
Total	177.360	99			

ANOVA found that there is no significant difference between male and female response to the High cost as a potential challenging area that SMEs are unable to come out of.

Long duration of implementation:

The length of time especially for first-time introduction of TQM is going to be a lot which requires many formal efforts and consumes time which may make it under required or unwanted by the management because the management is instead focused on producing the best results.

Table no. 7 - Frequencies of long duration of implementation of knowledge as a challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	16	16.0	16.0	16.0
disagree	21	21.0	21.0	37.0
undecided	28	28.0	28.0	65.0
agree	28	28.0	28.0	93.0
strongly agree	7	7.0	7.0	100.0
Total	100	100.0	100.0	

Omani SMEs' owners related the high cost at the middle level of challenge facing them. 37% of them are strongly disagree or disagree that it's a challenge facing them, 28% undecided and 35% of them agreed or strongly agree that high cost was a major challenge they were faced to bring out TQM. The average rating for this challenge is 2.89 (out of 5).

Table no. 8 ANOVA for long duration of implementation

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.286	2	6.643	5.094	.008
Within Groups	126.504	97	1.304		
Total	139.790	99			

Any introduction of a new specialized system is going to come with the demerit or the big challenge of costs that are faced or that are getting involved in these measures. The

significance is 0.008 which claims that gender differences are impacting the choices of longtime or the time taken to produce actual practical tangible benefits from introduction of TQM.

Focus on pricing:

Sometimes, SMEs are caught between the two alternatives of focusing on price or otherwise focusing on quality because both of these are divergent factors each of which are not able to produce meaningful results

Table no. 9 - Frequencies of focus on pricing as a challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	20	20.0	20.0	20.0
Disagree	27	27.0	27.0	47.0
undecided	26	26.0	26.0	73.0
Agree	21	21.0	21.0	94.0
strongly agree	6	6.0	6.0	100.0
Total	100	100.0	100.0	

Omani SMEs’ owners related the focus on pricing factor at a lower level of challenge facing them. 47% of them are strongly disagree or disagree that it’s a challenge facing them, 26% undecided and 27% of them agreed or strongly agree that focus on pricing was a challenge they were faced to bring out TQM. The average rating for this challenge is 2.66 (out of 5).

Table no. 10 - ANOVA for focus on pricing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.173	2	.586	.408	.666
Within Groups	139.267	97	1.436		
Total	140.440	99			

ANOVA found that there no significant difference between male and female SME’s owners in considering this factor as a challenge face them.

Organizational culture:

TQM is a representing a total change in the way that a business operates, and it also includes a lot of changes in the philosophy, the approaches of the management and the decision of how and what will be important as per organizational climate. One of the most essential principles contained within the TQM model is that it requires a detailed analysis and outcome output to be produced about organizational culture and the expected results [17].

Table no. 11 - Frequencies of organizational culture as a challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	12	12.0	12.0	12.0
disagree	29	29.0	29.0	41.0
undecided	28	28.0	28.0	69.0
agree	25	25.0	25.0	94.0
strongly agree	6	6.0	6.0	100.0
Total	100	100.0	100.0	

Omani SMEs’ owners related the focus on pricing factor at a lower level of challenge facing them. 41% of them are strongly disagree or disagree that it’s a challenge facing them, 28% undecided and 31% of them agreed or strongly agree that focus on pricing was a challenge they were faced to bring out TQM. The average rating for this challenge is 2.84 (out of 5).

Table no. 12 - ANOVA for organizational culture

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.002	2	3.001	2.479	.049
Within Groups	117.438	97	1.211		
Total	123.440	99			

ANOVA found that there is a significant difference between male and female SME’s owners in considering this factor as a challenge face them.

Complexity:

TQM is involving a dedicated system and approach to which a large series of comprehensive policies are needed to be successfully implemented if the entity is to reach a successful performance state with regards to TQM. Researchers consistently evaluated that these measures can create complexity because as per the framework of SMEs they do not have careful or understanding about every dimension of work performance so on and countering the complexity of setting up the TQM policy the usually end up getting challenged.

Table no. 13 - Frequencies of complexity as a challenge

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	13	13.0	13.0	13.0
disagree	27	27.0	27.0	40.0

undecided	23	23.0	23.0	63.0
agree	25	25.0	25.0	88.0
strongly agree	12	12.0	12.0	100.0
Total	100	100.0	100.0	

Omani SMEs' owners related the high cost at the middle level of challenge facing them. 40% of them are strongly disagree or disagree that it's a challenge facing them, 23% undecided and 37% of them agreed or strongly agree that high cost was a major challenge they were faced to bring out TQM. The average rating for this challenge is 2.96 (out of 5).

Table no. 14 - ANOVA for complexity

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.961	2	.981	.635	.532
Within Groups	149.879	97	1.545		
Total	151.840	99			

ANOVA found that there is a significant difference between male and female SME's owners in considering this factor as a challenge face them.

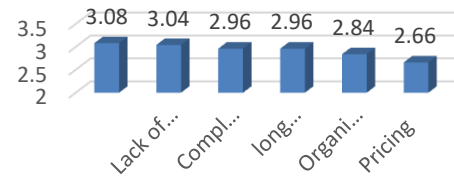
V. DISCUSSION AND CONCLUSION

SMEs are facing many challenges. Most of the literature has been found to focus on the financial dimensions of the problems perceived within the SMEs. However, this research attempted to identify a new aspect of SME research in terms of studying the extent to which Total Quality Management (TQM) can handle and manage the different dimensions of SMEs and their consistent operations. Importantly, extant research that is available on the topic of SMEs has proven that the SMEs have benefits as well as they are having challenges when they try to implement the TQM.

Overall, Omani SMEs reflected that all challenges face them are at medium level (between 3.08 and 2.66 out of 5). The highest challenge face Omani SMEs is the high cost of implantation the TQM in their ventures. The rate of this challenge is 3.08. The second challenge face the implantation of TQM in Omani SMEs is the lack of knowledge related to the TQM in their ventures. Its rate is 3.04 out of 5. Complexity is the third challenge face the implementation of TQM in Omani SMEs is the complexity of setting up the TQM policy the usually end up getting challenged and the long time of TQM implementation of TQM in SMEs, each of them rated by SMEs owner by 2.96. The fifth challenge face the implementation of TQM in Omani SMEs is the organizational culture including the philosophy, the approaches of the management and the decision of how and what will be important as per

organizational climate, its rate is 2.84. The last challenge face them is the focus on pricing. Its rate is 2.66 out of 5.

Figure no. 1 - Challenges face the implementation of TQM in Omani SMEs



There is a significant difference between Omani male and female SMEs owners in their response towards the long duration of implementation, complexity of implementation and organizational culture, while there is no significant difference between male and female SMEs owners toward the other three challenges.

It can be concluded that TQM is a holistic approach and the management philosophy where the key goals are to enable the organization to give more focus to customers such that a customer centric approach is developed, to get all of the available employees to be more involved in the achievement and attainment of goals so as to bring about an empowerment and active participation were addressing all possible quality issues. Essentially, TQM also involves never stopping with the improvements or in other words to ensure that there will be continuous improvements taking place that improves overall quality. Moreover, advantages connected with TQM are also involved in matters such as decision making, improving communication between supervisors and subordinates and thereafter to support improved and efficient decision-making.

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