

AN ANALYSIS OF TOTAL QUALITY MANAGEMENT AND CUSTOMER SATISFACTION AMONG MOBILE SERVICE USERS

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Abstract

Customer satisfaction is one of the major concerns today. Total quality management (TQM) assists the telecommunication industry in retaining and acquiring the satisfaction of the customer. Therefore, the intention of the study is to identify the relationship between customer satisfaction and TQM in Malaysia's telecommunication industry. In addition, this study uses quantitative methods by distributing questionnaires to respondents. The distribution of questionnaires to the customer of various types of telecommunication service providers as respondent for this study. Based on Krejcie & Morgan sample size table, 384 respondents should be involved in this study. However, only 237 successful questionnaires were returned. The Statistical Packages for Social Science (SPSS) software is being utilized in this study to analyze the data obtained. The analysis consists of descriptive analysis and correlation analysis. The result shows that there is a significant relationship between TQM and customer satisfaction. This study is important to expand the understanding of the researchers toward the TQM in telecommunication sector which the focus of this study is mobile service provider such as Celcom, Digi, and Maxis.

Keywords: total quality management, customer satisfaction, telecommunication sector, mobile service provider

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Introduction

The crucial and very significant obstacle encountered by the organization in this market competition is to increase customer awareness on quality (Anil & Satish, 2019). In the market, the customer is known as king which means that every single organization's objective is to obtain much profit from the satisfaction of the customer (Rasheed, 2016). In order to ensure the sustainability of competitive advantage, the most important aim and objective for the organization is to improve satisfaction of the customer (Anil & Satish, 2019).

To compete in today's market, practically every company is using or attempting to implement total quality management (Alaoun, 2018). Quality management and effective management, as well as product and service innovation, are the only ways to assure an organization's long-term viability (Harshitha & Kumar, 2019). As a result, every company or organization invested more in quality improvements. These efforts led to a new approach in terms of quality which is called total quality management (TQM) (Şimsek Gunduz & Gündüz, 2017).

TQM is a management concept that aims to continually improve product quality in order to improve customer satisfaction (Anil & Satish, 2019). TQM is a comprehensive collection of management and control processes aimed at focusing the entire business on producing products or services that please customers as well as feasible (Pattanayak & Koilakuntla, 2015).

The telecommunications sector is becoming increasingly competitive and mobile service providers are having difficulty maintaining customers (Sze Chee & Md Husin, 2020). Customers have the freedom-

to switch to another service provider thus it becomes essential for companies to ensure customer satisfaction through service quality (Sze Chee & Md Husin, 2020). According to statistics provided by the Malaysian Communications and Multimedia Commission (MCMC), there is increasing in number of complaints by customer for mobile services provided since the beginning of the year in 2021. The overall customer complaints from January to June were found to be increased with 14,351 complaints to 44,693 complaints, respectively. Each telecommunication organization has received daily complaints with various reasons from the customers. The interaction between customer and telco customer service shows only 10% of customers recorded positive experience and more than 50% of the customer concerns highlighted were not addressed by the telecommunication company.

Due to the fierce competition in the telecommunications industry, delivering high-quality service, as well as customer satisfaction and loyalty, has a big influence on keeping current customers and attracting new ones. Delivering high-quality services is the key to maintaining a consistent and unbroken competitive edge (Habibi, 2020). Previous research has established that process quality, interaction quality and environmental quality are part of service quality factor, and the consequence are crucial to customer satisfaction and loyalty to an organization (Mukhtar & Anwar, 2016).

Hence, this study aims to examine the effect of TQM with two aspects of TQM which are process quality and interaction quality of the telecommunication organization on customer satisfaction. Total quality management (TQM) was first introduced in the 1950s, and it has been used in the United States and Europe since the late 1970s (Harshitha & Kumar, 2019). The TQM is designed to assure long-term consistency in quality products and services while also meeting consumer needs (Harshitha & Kumar, 2019). This strategy is used to increase a company's quality and production (Harshitha & Kumar, 2019). TQM is a management style that emphasizes the continual improvement of quality and customer satisfaction (Dinko H. Boykanyo, 2019). TQM is still an important problem in manufacturing, as well as in healthcare, service, non-profits, and, indeed, in every company (Kim, 2020). TQM has also influenced quality improvement, sales, client base growth, and profitability (Harshitha & Kumar, 2019). Numerous research has been conducted to discover the critical factors that must be presented for TQM to be implemented successfully in a business. Process thinking, customer satisfaction, total staff engagement, strategic thinking, integrated system, continuous improvement, and efficient communication were all significant aspects in TQM's success in quality, maintenance, and management (Harshitha & Kumar, 2019). Similarly, TQM and tools are made up of three major elements which include satisfaction of customer, staff participation and continuous improvement (Kim, 2020). The most common TQM procedures that drive customer satisfaction are quality assurance and quality information analysis (Anil & Satish, 2019). Furthermore, incentive and training, supplier emphasis, empowerment, top management support, process development, customer focus, and cooperation were all factors in the study by Dinko H. Boykanyo, 2019.

There are different definitions and points of view on customer satisfaction in an organization or company based on prior research. Customer satisfaction has been shown to have a favorable influence on the productivity and performance of businesses (Habibi, 2020). For efficient administration of a company, performance measurement is essential (Anil & Satish, 2017). The goal of the satisfaction of customer activities is to enhance marketing, create a more customer-centric culture, increase loyalty of customers, and find new ways to innovate (Kim, 2020).

Customer satisfaction is a critical metric for assessing healthcare service and determining quality outcomes (Agyapong et al., 2018). "The number of consumers, or proportion of total customers, whose reported experience with a business, its goods, or its services (ratings) surpasses established satisfaction targets" is how customer satisfaction is defined. As a consequence, effective customer satisfaction management is crucial for every organization (Fazeen, 2017). According to the research, customer satisfaction is more likely to share their insight and customer experience with five to six individuals, but unsatisfied customers are more likely to tell ten to eleven people about their product or service experience (Fazeen, 2017).

Customers' prior outlooks have a big effect on the service quality that is supplied to them and whether or not it meets or exceeds their expectations (Habibi, 2020). Customer satisfaction is a critical component of every profit-driven organization's success. High-quality products and services may provide a company with a competitive advantage. A high-quality reputation attracts pleased and loyal consumers, who reward the company with continuous patronage and positive word-of-mouth advertising, which frequently leads to new customers (Anil & Satish, 2019).

Methods

Quantitative research methods used in this study to achieve research objectives which include the use of questionnaires to collect quantitative data. Sampling strategies provide a variety of approaches for reducing the quantity of data required for research by focusing on data from a subset of the population rather than all available components (Saunders et al., 2009). The research instrument distributed to the intended respondents using a simple random sampling technique. To evaluate the model and hypothesis in this research, a questionnaire survey was conducted. The Likert 5-point scale was utilized in every survey. A score of 1 indicates strongly disagree, a score of 3 indicates moderation, and a score of 5 indicates strongly agree. The questionnaire has been divided into three major sections. The first section consists of demographic and personal information about the individuals. The second section consists of twelve questions regarding total quality management (TQM) under two TQM dimensions; process and interaction quality. The third section consists of seven questions regarding the satisfaction of the customer. All of the items in sections two and three for this study were measured using a Likert scale of measurement with a scale ranging from one to five. The items studied for measuring each component were modified and based on previous study.

Result and Discussion

The background of respondents was explained from demographic information which are gender, age, current employment status and mobile service provider that being used. Descriptive analysis from frequencies method and percentage are used to analyze the background of respondents. Table 1 shows the characteristics of all the 237 respondents.

Table 1. Demographic Profile

Variable	Frequency	Percentage %	
Gender	Male	163	68.8
	Female	74	31.2
Age	20 years and below	34	14.3
	Between 21 – 29	168	70.9
	Between 30 – 39	22	9.3
	40 years and above	13	5.5
Current Employment Status	Full time employment	114	48.1
	Part time employment	26	11.0
	Unemployed	12	5.1
	Self-employed	17	7.2
	Student	68	28.7
Education level	Secondary school	10	4.2
	Pre-university/Diploma	76	32.1
	Bachelor's Degree	136	57.4
	Master's Degree	14	5.90
	Doctoral Degree	1	0.4
Mobile service provider being used	Digi	22	9.3
	Maxis	59	24.9
	Celcom	71	30.0
	U-mobile	49	20.7
	Others	36	15.2

Common normality test that can be used is Shapiro-Wilk test and Kolmogorov test, however, for large sample, they can give inaccurate result (Mishra et al., 2019). Another alternative to the problem is to use skewness and kurtosis of the distribution to evaluate normality tests (Mishra et al., 2019). When the data follow normal distribution, parametric tests are performed to compare the variables; otherwise, nonparametric approaches are utilized (Mishra et al., 2019). The value obtained for skewness must fall between -1.96 and +1.96 to pass the normality assumption. The value for skewness and kurtosis is shown in Table 2.

Table 2. Normality Analysis

Variable	Skewness	Kurtosis	Normality Test
Process Quality	-0.748	1.145	YES
Interaction Quality	-0.471	0.218	YES
Customer Satisfaction	-0.776	0.504	YES

From Table 2, since both values fall within the range, the sample has success with normality assumption for skewness. Hence, it clearly shows that the distribution is normal and proceeds with parametric test to examine the correlation for both variables.

As the collected samples are normally distributed, the parametric static technique is used (Mishra et al., 2019). The Pearson Correlation method is utilized to analyze the correlation between both of TQM dimensions which are process quality and interaction quality with customer satisfaction. SPSS correlation table cells always contain at least 3 pieces of information. Firstly, the size of the correlation (the “r” statistic), which has a range between -1 and 1. Secondly, the results from the Pearson correlation analysis can identify the strength of the relationship. The explanation of the relationship is followed as Guildford’s Rule of Thumb (1973). Thirdly, the value of significance (2-tailed) determines the relationship significance at the level 0.01.

To begin with, the correlation analysis of both TQM dimensions; process quality and interaction quality with customer satisfaction are shown in Table 3.

Table 3. Correlation Analysis

Variables	Process quality	Interaction quality	Customer satisfaction
Process quality	(1.000)		
Interaction quality	0.710**	(1.000)	
Customer satisfaction	0.759**	0.661**	(1.000)

From the Pearson correlation Table 3, the correlation between the first TQM dimensions, which is process quality with customer satisfaction indicates a perfectly positive linear relationship since the value is near to +1. Furthermore, by using the Guildford thumb of rule, the value for Pearson correlation shown is 0.759 which can indicate both variables as a strong positive relationship. Besides, it is also shown the value for the 2-tailed significance value which in this case is 0.000. This indicates the correlation is highly significant. Thus, process quality and the level of satisfaction of customers have a strong relationship.

From the Pearson correlation Table 3, the correlation between the second TQM dimensions, which is interaction quality with customer satisfaction indicates a perfectly positive linear relationship since the value is near +1. Furthermore, by using the Guildford thumb of rule, the value for Pearson correlation shown is 0.661 which can indicate both variables as a moderate positive relationship. Besides, it is also shown the value for the 2-tailed significance value which in this case is 0.000. This indicates the-

correlation is highly significant. Thus, interaction quality and the level satisfaction of customer have a strong relationship.

The main objective of this research is to examine the effect of TQM on customer satisfaction in the Malaysian telecommunication sector. The Pearson correlation indicated that both TQM dimensions are positively and significantly related to the customer satisfaction level. Since both dimensions of TQM have the same results, it can be concluded that TQM influences customer satisfaction. This result demonstrates how enhanced management of customer perception and customer can help a mobile service provider improve their service quality and sustain satisfaction of the customer. This is supported by earlier research by Nguyen & Nagase (2019), which found that TQM has a significant impact on customer satisfaction. These findings also approve in a few of previous research findings in several areas (Anil & Satish, 2019; Alaoun, 2018; Sze Chee & Md Husin, 2020).

From the findings, the size of correlation for both TQM dimensions and customer satisfaction indicates a perfectly positive linear relationship since the value is near to +1. If the correlation static does not have a minus in front of it, which means that the correlation is positive. This finding means that as independent variable increases in its value, the dependent variable also increases in its value through an exact linear rule.

The findings found represents that TQM principles are significant in the telecommunication industry because it can result in organizational development and enhancement of excellent service, which has been shown to be crucial for company sustainability in the industry (Ahmad et al., 2017). Furthermore, the findings of correlation can be indicated that TQM practices at Malaysia mobile telecommunication company and other operators should become more closely tied to the needs and strategies of the company (Habibi, 2020).

According to the study of (Ullah et al., 2016), the study proved that TQM dimensions are very significant for organization sustainability across a wide range of industries. TQM dimensions can result in various levels of sustainable business performance. Top management should exhibit responsibilities of quality and promoting the improvement of strong and long-term customer relationships and also their satisfaction level toward the provided services. However, businesses who do not employ excellent TQM practices can lead to a modest level sustainable company performance.

According to Fazeen (2017), TQM is one of the elements that directly relates to the satisfaction of customers. Companies are able to quickly respond to customer requests and needs which can provide them with high quality services. In order to retain that ability for a long period, the organization must consider customer relationships and have a strong system of communication to communicate with them. Hence, both of the TQM dimension; process and interaction quality; can be utilized by the company in order to enhance the services and communication with the customer. To maintain high-quality customer service, the business must make sure its customer representative in the service department is properly trained (Sze Chee & Md Husin, 2020).

Conclusion

This research investigates how customers of mobile service provider responded to the total quality management that being utilized by the company. TQM consists of process quality and interaction quality that affect customer satisfaction level. The statistical analysis summary and the main findings of the hypothesis are included in this chapter. To assist future researchers, the limitations and suggestions are also listed. TQM is closely related to satisfaction and affects the quality of mobile service provider facility service, improves the organization's value, and enhances its capability in a competitive environment.

Firstly, the sampling location and the distribution of the questionnaire only focusing on mobile service provider user in Selangor. Therefore, the outcomes of this study are unable to represent thoughts and perspective of all users in other states of Malaysia. To acquire highly accurate results, the researchers should broaden the sample area to include customers from other states in Malaysia. Next, this study is only focused on quantitative methods. It required more information to clarify ambiguous situation. Therefore, this study lacks opinions from multiple perspectives. The researcher is not able to interpret the data from individual's opinions. On the other hand, there are only two variables used to conduct this study as TQM dimension which is interaction quality and process quality that influence satisfaction of customer. Future researchers should conduct the research by distribute the questionnaire to the mobile service provider customers from other states of Malaysia such as Kedah, Terengganu, Sabah and more to get higher accuracy of the users' feedback to avoid the bias that might be incurred. Next, future researchers can do research in both quantitative and qualitative research to identify more information in ambiguous circumstances. Thus, future researchers also can utilize interview session method for collecting the data. Respondent involvement can increase, and interviewers can obtain different opinions and perspectives. Besides that, there is a lower chance that respondents will misinterpret questions because the interview can clarify the instruction of question. Since only two factors were investigated in this study, hence, future researchers can examine more variables such as network quality and pricing structure.

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Author Contribution

Intan Nurjannah Mohamed Sabri – conceptualization and data collection; Arifha Mohamad – supervision, writing, review and edit.

Conflict of Interest

Authors declare no conflict of interest.

References

- Agyapong, A., Afi, J. D., & Kwateng, K. O. (2018). Examining the effect of perceived service quality of health care delivery in Ghana on behavioural intentions of patients: The mediating role of customer satisfaction. *International Journal of Healthcare Management*, 11(4), 276–288. <https://doi.org/10.1080/20479700.2017.1326703>
- Ahmad, M. F., Nee, P. S., Nor, N. H. M., Wei, C. S., Hassan, M. F., & Hamid, N. A. A. (2017). Total quality management practices in malaysia healthcare industry: A survey result. *International Journal of Supply Chain Management*, 6(3), 332–336.
- Alaoun, N. Y., & Faculty, B. (2018). *The Effect of Total Quality Management Practices on Competitive Priorities of Telecommunication Companies in Qatar*.
- Anil, A. P., & Satish, K. P. (2017). Enhancing customer satisfaction through total quality management practices— an empirical examination. *Total Quality Management and Business Excellence*, 30(13–14), 1528–1548. <https://doi.org/10.1080/14783363.2017.1378572>
- Anil, A. P., & Satish, K. P. (2019). An empirical investigation of the relationship between TQM practices, quality performance, and customer satisfaction level. *International Journal of Productivity and Quality Management*, 26(1), 96–117. <https://doi.org/10.1504/IJPM.2019.096993>
- Chyung, S. Y. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). *Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale*. *Performance Improvement*, 56(10), 15–23
- Dinko H. Boykanyo, & M. M. H. (2019). *South African Journal of Economic and Management Sciences*. 22(1), 1–13. <https://doi.org/10.4102/sajems>

- Guildford, J. P. (1973). *Fundamental Statistics in Psychology and Education* (5th Edition). New York: McGraw-Hill.
- Habibi, G. (2020). Impact of Total Quality Management on Customer Satisfaction in Telecom Industry in Afghanistan. (Master thesis, Kardan University, Kabul, Afghanistan).
- Harshitha, M., & Kumar, R. (2019). Does the total quality management enhance the quality? Evidence from selected manufacturing units; bricks. *International Journal of Mechanical Engineering and Technology*, 10(1), 1602–1608.
- Khadijeh, S. K. (2015). *The Relationship Between Service Innovation Management Practices on Performance within Telecommunications Industry in Malaysia*, University Sains Malaysia.
- Kim, G. S. (2020). The effect of quality management and Big Data management on customer satisfaction in Korea's public sector. *Sustainability (Switzerland)*, 12(13). <https://doi.org/10.3390/su12135474>
- Malaysian Communications and Multimedia Commission (MCMC). (2018). Connectivity key to digital transformation industry performance report 2018.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of cardiac anaesthesia*, 22(1), 67–72. https://doi.org/10.4103/aca.ACA_157_18
- Mohamad, N. (2004). Productivity growth in the Malaysia mobile telecommunication industry, International Islamic University.
- Mukhtar, U., & Anwar, S. (2016). Outcome, interaction, environment and relationship quality in service quality interfaces gaps and supply chain competitiveness: A conceptual framework. *Int J Bus Forecasting Market Intell*, 2(3), 248-268.
- Nunnally, J. C., & Bernstein, I. H. (1994), *Psychometric theory*. McGraw-Hill.
- Pattanayak, D. and Punyatoya, P. (2015) 'Impact of total quality management on customer satisfaction in Indian banking sector', *Int. J. Productivity and Quality Management*, Vol. 16, No. 2, pp.127–147.
- Nguyen, T. L. H., & Nagase, K. (2019). The influence of total quality management on customer satisfaction. *International Journal of Healthcare Management*, 12(4), 277–285. <https://doi.org/10.1080/20479700.2019.1647378>
- Rasheed, F. A. K. (2016). Impact of Total Quality Management on Customer Satisfaction. *International Journal of Management and Commerce Innovations*, 4(2), 702-709.
- Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research Methods for Business Students*. Pearson, New York.
- Şimsek Gunduz, G., & Gündüz, Ç. (2017). Examining the perception of quality and customer satisfaction within the framework of total quality management in textile sector. *Tekstil ve Konfeksiyon*, 27(2), 101–107
- Sze Chee, V., & Md Husin, M. (2020). The Effect of Service Quality, Satisfaction and Loyalty toward Customer Retention in the Telecommunication Industry. *International Journal of Academic Research in Business and Social Sciences*, 10(9), 55–71.
- Travakol, M., & Dennick, R. (2011). Making Sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. <https://dx.doi.org/10.5116/ijme.4dfb.8dfd>
- Ullah, A., Ajmal, M. M., & Aslam, W. (2016). Study of Relationship Between Customer Focus and Organizational Performance in the Telecommunication Organizations of Pakistan. *Information and Knowledge Management*, 6(12), 38–45.