Total Quality Management and Service Quality Delivery at Ghana Airports Company Limited

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Authors' contributions

This work was carried out in collaboration between both authors. Author SA designed the study, literature review and performed the statistical analysis and wrote the first draft of the manuscript. Author CAN wrote the protocol, managed the analyses of the study, managed the literature searches and final draft of the manuscript. Both authors read and approved the final manuscript.

Article Information

Original Research Article	*Received 15 August 2018* *Accepted 26 October 2018* *Published 01 November 2018*

ABSTRACT

This study was carried out to assess the effect of Total Quality Management on Service Quality Delivery. A quantitative research approach was employed. The study area was the customer service channel at Kotoka International Airport in Accra. The population was employees and customers of GACL. 221 customers and 103 employees who met the selection criteria participated in the study. Descriptive statistics, Pearson's correlation test, and Confirmatory Factor Analysis (CFA) were used to present findings through Amos 8. According to the findings, TQM makes a significant positive effect on service quality. Out of the three domains of TQM, asset management and quality assurance make significant positive effect on service quality after controlling for the covariates, with a variance of 47.7% in the regression model. The study reveals that the level of service quality delivered at GACL is satisfactory, with Tangibles being the highest. It also suggests that the level of TQM is appreciably high. However, the level of service quality delivered did not lead to high

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satisfaction. This implies that, TQM has not been able to eliminate all bottlenecks in service delivery. The practical implication of this finding is that, service quality delivery can be improved by enhancing the effectiveness of asset management, quality assurance, and quality control and service quality dimensions. It provides a basis for improving service quality delivery in GACL and to leapfrog academic debate on the foregoing topic, particularly in terms of potential variables that may confound the relationship between TQM and service quality delivery.

1. INTRODUCTION

The last two decades has shown an appreciable level of interest in Total Quality Management (TQM) especially in the service sector. In Ghana, the prevalence of the joint influence of competition and macro-economic problems [1]; [2] has made the need for businesses to innovate and apply competitive strategy more crucial. [3] opined that TQM provides the most suitable framework of business activities for applying innovation and competitive strategy. Deploying the best competitive strategy in the light of innovation has been predominantly confirmed in empirical research as a determinant of business performance and growth [4]; [5] and the means for overcoming market competition [2]. Arguably, the diffusion of innovation and the implementation of competitive strategy yield the best impact on a business when they are achieved as organisation-wide processes. To explain, these processes can only make a maximum impact on the organisation when they are pursued in every functional department and unit. Invariably, the need to innovate and deploy competitive strategies must not be limited to a single department.

Total Quality Management is a business function that traditionally involves every operational department and unit. Thus, it is a function that includes every department and organisational stakeholder in its core activities, ensuring that its expected outcomes do not only benefit a single department or unit. For this reason, some researchers [6]; [7] argue that the desired impact of TQM on the organisation is often enormous. If TQM is such an organisation-wide function, there is no doubt it provides the best operational framework for nurturing innovation and superior competitive strategy.

Total Quality Management is defined as "organisation-wide efforts that are aimed at creating a permanent climate in which the organisation improves its ability to deliver high quality products or services to its customers in a continuous fashion" [8]. Drawing from this definition, the principal goal of TQM is to nurture an organisational culture that focuses on improving the quality of products or services to customers over time. TQM applies the principle that improvable quality products or services emanate from efforts made in all functional departments and teams [9]; hence it requires the absolute involvement of every department, team and individual who has a stake in the organisation.

Over the years, many studies [6]; [7]; [4]; [5] have been conducted on TQM. Researchers have paid particular attention to the impact of TQM on business performance indicators such as customer satisfaction, customer loyalty and business performance. This notwithstanding, empirical research has still not thoroughly examined important relationships towards improving academic debate and management practice. One of these relationships is the much theorised effect of TQM on service quality delivery.

First of all, this relationship has not been tested in specific organisational contexts. For instance, the services of a public sector organisation like Ghana Airport Company Limited (GACL) play a pivotal role in national development. Customers unofficially make complaints on how services are rendered at the airport. Sadly, no identifiable research has examined the extent to which TQM is driving service quality delivery in this organisation. Secondly, studies [10]; [11] that have tested this relationship failed to control for important confounding variables; hence it is likely these previous studies misestimated the effect of TQM on service quality delivery. Last but not the least, this relationship has been tested based on a limited number of theories, whereas some applicable theories have not been employed. In view of the above issues, this study attempts to examine the impact of TQM on service quality delivery in GACL. This study is expected to

provide a basis for improving service quality delivery in GACL and to leapfrog academic debate on the foregoing topic, particularly in terms of potential variables that may confound the relationship between TQM and service quality delivery. The next section elaborates the research problem to be addressed.

2. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Total quality management

Two main scales have been used in the literature to measure TQM. The first and less popular one has two domains, namely quality control and quality assurance [2]; [4]. This scale is also the oldest and was originally developed as a measure of the ability of a firm to integrate its processes and operational functions to deliver the quality of services or products expected by customers [5]. The second scale has an additional dimension, which is asset management [4], that was introduced more recently to recognise the role of business assets and physical facilities in influencing customers' quality perceptions. Its introduction was influenced by the fact that business assets and physical facilities, which are called Tangibles in the context of the SERVQUAL model, make a major impact on service quality [12]; [4]. It has thus become a necessary measure of TQM, especially in large firms that are characterised by a huge asset base. The three dimensions of this scale are explained as follows:

Quality assurance – this is a measure of the availability of programs towards achieving a pre-determined level of service or product quality based on customer expectations or regulatory standards [13]. It includes the level of priority given to these programs and quality based on customers' expectation or regulatory standards. Customer expectation in this vein is the level of quality that customers want services or products to provide [2]. Regulatory standard is a term used to describe the minimum level of quality that a legal regulatory organisation requires a business to provide to its customers [2]. In line with the above definition therefore, quality assurance is a framework of practices and norms that lead to the delivery of quality products or services in harmony with either customer expectations or regulatory standards. Quality assurance includes key activities such as responding to customer complaints and removing conditions and factors that compromise quality.

Quality control – this is different from quality assurance. While quality assurance is a measure of the availability of programs that are aimed at providing quality services or products, the quality control uses techniques and models (including mathematical models) to ensure that the level of quality delivered falls within a specified desired level [4]. Quality control thus goes beyond providing quality to ensure that the level of quality delivered falls within a recommended range. Some of the commonest tools used to achieve quality control goals is the six-sigma and other statistical estimation methods [2]. Based on the above definitions, quality control is associated with the goal of ensuring precision in the quality provided.

Asset management – the execution of quality control and assurance requires resources, which include people and logistics. In fact, quality control and assurance processes cannot be initiated and completed without resources. It is in view of this fact that the management of organisational assets (i.e. people, logistics, physical structures, etc.) is part of TQM. Asset management is a measure of TQM that represents the availability of requisite resources or assets, the ability of the firm to use these resources, and its capacity to maintain their efficiency over time [14]. As a dimension of TQM, asset management is important because some of the physical structures of the business (e.g. car park, reception desk, etc.) can directly impact service quality perception, at least at the level of Tangibles.

GACL is a public sector organisation that deploys a lot of assets in delivering its services. Similarly, this business operates in an environment that features a lot of physical facilities (e.g. customer car park, reception, restaurants, etc.). In this study therefore, the above three-dimensional scale is used in measuring TQM.

2.1.2 Service quality dimensions

As mentioned earlier, service quality is measured or assessed in recent years using five dimensions or factors. These five dimensions are discussed as follows based on definitions provided by their originators [15]:

Tangibles – This stands for the physical facilities, appearance of personnel and equipment in the organisation to which customers are exposed [15]. This domain includes physical facilities like customer car park,

washrooms, air-conditioned customer care centres, appearance of employees, among others.

Reliability – This is the ability to perform the promised service dependably and accurately. This dimension has more to do with the approach to customer service and involves a blend of the appropriate skills, language, and tools (i.e. technologies).

Responsiveness – This is a measure of the willingness to help customers and provide prompt services that lead to access to needed services. This dimension, unlike others, is very time-sensitive, as it represents how early the needed attention is given to a customer in response to his or her needs.

Assurance – This is a combination of items designed originally to assess competence, courtesy, credibility and security. It involves the ability of the organisation's employees to inspire trust and confidence in customers. This concerns whether or not customers can receive quality services in the firm's efforts to fulfil its promises.

Empathy – This represents a combination of items designed originally to examine access, communication, and understanding; thus its represents personalised attention given to the customer logically in delivering services. This dimension also relates to the business's service delivery style and its relationship with customers.

In practice, TQM does not end with operational activities. The organisation would need to provide customer value through a customer-organisation relationship as a way of achieving its financial goals. It cannot be refuted that all business activities, including those relating to TQM, are carried out to make a profit. Therefore, it is incumbent on management to ensure that the best possible quality services are delivered to customers. This is the only means customer feedback can be evaluated. The SERVQUAL model is therefore the most appropriate way to examine customer feedback, which is best expressed in terms of their quality perceptions [14]. In this study therefore, customers' quality perceptions are measured on the basis of the SERVQUAL model. This means that customer preconceptions relating to TQM (i.e. which forms the basis of service delivery at GACL is examined).

It is opined by [6] that businesses are established to meet one exclusive goal, which is to provide products or services that meet customer needs and expectations. This viewpoint is similar to the argument of Akhtar et al. [7] that every business exists to address some customer needs or wants for a financial gain. There is therefore no doubt that customer preferences and wants are the foundation of every business's existence. Given this understanding, the success or failure of a business like GACL depends on the quality of the services or products delivered by it to customers. High service quality means that customers perceive services to be of their preferred standard [2]. In GACL, TQM is the main process used to provide quality services and improve on the level of quality provided over time. So, the perceptions of customers about the quality of services depend on how well TQM impacts the delivery of services that meet the needs and expectations of customers. These perceptions are consequently the basis of the effect of TQM on service quality.

2.1.3 Social exchange theory

The Social Exchange Theory (SET), originally formulated by Gorge Homans in 1961, implies that these perceptions are founded on a decision making process in which customers compare the rewards, benefits or value derived from a service or product with the price they pay for it. The theory also suggests that customers compare the value derived from a particular service to that made from other services.

If the cost customers bear for consuming a service is less than the value or quality of this service, they are likely to rate the quality of the service highly. From this point of view, researchers [16]; [3] have stressed that customers' service quality perception is influenced by two factors: namely cost and quality or value rendered. These two factors are largely controlled within the organisation through TQM [16]. TQM focuses on ensuring and improving quality of services continuously by integrating all business functions through a process in which cost is optimised [14]. A basic attribute of TQM is that involves all employees and functional departments [2]. Invariably, relevant employees and functional department plays a role in the TQM process. It is from this point of view that the Theory of Reasoned Action (TRA), originally developed by Martin Fishbein and Icek Ajzen in the year 1967, implies a link between service quality and TQM.

2.1.4 Theory of reasoned action

The TRA posits that people, for that matter customers, act or behave in a particular way based on what they think this behaviour will yield. According to this theory, the belief that something will happen as a result of behaving in a particular way is based on the individual's observation of phenomena in a particular environment. So, if GACL empowers its employees to implement a suitable strategy of TQM, this can lead to a certain pattern of customer behaviour e.g. recommendation of the organisation to friends. If TQM leads to quality services, this positive behaviour is likely to translate to high service quality rating by customers based on the foregoing decision making process in which they compare the value of services to the cost incurred in consuming these services.

To conclude, the SET implies that customers determine the quality of services by comparing its value to the cost associated with consuming these services and the value other companies are providing. TQM is a process through which a high value can be offered at a good cost. If so, the TRA implies that customers can develop positive behaviours that can influence them to rate service quality highly, leading to a positive effect of TQM on service quality.

2.2 Empirical Review

[1] examined TQM as a source of competitive advantage in the manufacturing sector in Ghana. Their study adopted a survey method by using questionnaire and interview as the data collection instruments. They used simple random and stratified sampling techniques to select 30 service firms and 30 manufacturing firms in Accra. The researchers found that when properly implemented, TQM is a source of sustainable competitive advantage.

[6] also conducted a study in Ghana to examine the relationship between TQM practices of SMEs and the impact of these practices on their performance and profitability. The researcher used a mixed research method that involves the use of descriptive and inferential statistics. It was found that a difference exists between SMEs with respect to several variables relating to TQM such as managerial education level, TQM awareness, managerial commitment to TQM, use of new technology, putting the customer first, effective supervision, and enforcement of quality practices. He also found a statistically significant association between the implementation of TQM and the SMEs' financial and organisational performance. Since financial performance is dependent on service patronage, the result of the study implies that TQM influences customers' quality perceptions.

In the study of [2], the relationship between TQM and organisational survival is examined. These researchers employed the quantitative research approach and the survey method of collecting data. A sample of 250 firms within the metropolis of Kumasi was used. The researchers used a structural equation model (SEM) to examine the relationships between the seven organisational linkages and five practices of TQM. The findings showed significant positive effect of the seven TQM elements on organisational performance.

A more recent study is that of [4], which was carried out to empirically examine the extent to which TQM practices are associated with construction project quality performance. The results of their study suggest that TQM elements are positively associated with customers' quality perceptions and that soft aspects of TQM have higher impact on these perceptions than hard aspects. The hard aspects of TQM have to do with perceptions on the tangible product, whereas the soft aspects relate to strategies and approaches adopted in delivering the product to the customer. Their evidence therefore reiterates the influence of TQM on customers' quality perceptions.

In a foreign country context, [7] executed a research in an attempt to explain the role of TQM in the services sector in Pakistan. Thus, unlike the studies reviewed earlier, their paper focused on services companies. Their findings ultimately apply to service organisations. The researchers used a qualitative research technique. In data collection, interviews were conducted at the top-level management of hospitals, banks, telecommunication companies, educational organisations and airlines. Their results confirmed a positive relationship between TQM and performance of service organisations in Pakistan. Their result reflects a positive link between TQM and customers' service quality perceptions. This result backs the study of [1], [2] and [6].

[16] carried out a related research in which the effect of TQM on organisational performance is examined. In their study, measurement of TQM

focused on continuous process improvement within firms to provide superior customer value. The researchers used a qualitative research, precisely a content analysis. They found that TQM positively affects organisational performance. Moreover, TQM facilitates continuous process improvement within firms to provide superior customer value. By implication, enhanced TQM improves customer satisfaction.

The above empirical deduction is supported by several studies [16]; [17]; [2]; [1] which have confirmed the positive effect of TQM on service quality. More importantly, studies supporting the effect of TQM on service quality include those carried out in Ghana [2]; [1]. On the basis of these evidences and the above argument, the following hypotheses are tested:

H_1: TQM has a positive significant relationship with service quality.
H_2: Quality control has a positive significant relationship with service quality.
H_3: Quality assurance has a positive significant relationship with service quality.
H_4: Asset management has a positive significant relationship with service quality.

3. RESEARCH METHODS

A descriptive research design was applied in this study. The study's population was employees and customers at the customer service channel of Kotoka International Airport (KIA). The accessible population was made up of 142 employees and 221 customers. The census approach was used for the customers' population, as they had diverse backgrounds and would give stronger evidence on the subject being looked at. The simple random sampling method was used to select a representative sample of employees from this population. The representative sample was determined using [18] sample size table, which provides the corresponding sample size to every population size. With respect to this table, the population size of 142 employees correspond to103. So the sample size for customers and employees was respectively 221 and 103. In the selection of employees, each individual in the population was assigned a code or number. These codes were entered into SPSS for both customers and employees. The Simple Random Sampling procedure in SPSS (Statistical Package for the Social Sciences) was then used to select individuals from each list of codes until the

sample size was reached. Members selected in this process became part of the sample.

A self-reported questionnaire was used to collect data. Two questionnaires were used, one each for customers and employees. Customers' questionnaire was used to collect data on service quality. This questionnaire had two sections. The first section presented questions that measured the demographic variables of respondents. The demographic variables measured are gender, education, nationality, and customer experience. The second section presents items of a standard scale that represent measures of service quality. The employee questionnaire has two sections. The first section captures employees' demographic variables, namely gender, education, tenure, and employee category. In the second section, items that represent standard measures of TQM are presented alongside some open-ended questions that solicit general views of respondents. Service quality was measured using the SERVQUAL model or scale, which was used because it is a gold standard for assessing service quality delivery [10]. TQM was measured using the TQM scale adopted from [4]. Both scales apply a scale ranging from 1 (low agreement) to 5 (high agreement). The validity and reliability of these measurement scales were verified and confirmed using a confirmatory factor analysis procedure applied by [19]. Table 1 shows the reliability and validity statistics reached in this procedure for the two measurement scales.

Prior to data collection, informed consent forms were signed by participants. After each participant had signed the informed consent form, questionnaires were administered by hand delivery (i.e. for customers only) and email, depending on the option an employee employed. Data was collected by the researcher who was supported by three staff members at KIA. Data collection was done in two weeks and between August 1 to 14, 2017. Out of 221 questionnaires administered for customers, 187 of them were completed and returned. Six of the returned questionnaires were discarded because they had non-response errors. Hence, 181 questionnaires were analysed for customers. In terms of employees, all 103 questionnaires were completed and analysed. Data was analysed using SPSS 21. Prior to data analysis, descriptive statistics and the z-score approach were used to identify and remove outliers in the

Table 1. Validity and reliability

Construct	Variable /Domain	CA	AVE	MSV	ASV
Service quality	Tangibles	0.854	0.743	0.632	0.598
	Responsiveness	0.902	0.811	0.765	0.654
	Assurance	0.884	0.722	0.699	0.454
	Empathy	0.921	0.833	0.712	0.564
	Reliability	0.932	0.812	0.709	0.576
TQM	Quality assurance	0.904	0.852	0.743	0.653
	Quality control	0.849	0.723	0.677	0.543
	Asset management	0.906	0.836	0.785	0.611

Source: Field work, 2017

data. The Shapiro-Wilk's test was used to confirm normality of the data. Pearson's correlation test and ordinary least squares (OLS) regression analysis were used to present findings. These statistical tools were used to test the effect of TQM on service quality.

4. RESULTS AND DISCUSSION

In this section, findings of the study are presented.

With reference to Table 1, each item of service quality accounts for a Cronbach's Alpha (CA) of at least 0.7. Researchers [20]; [21] suggest that each factor of a reliable scale should have a CA of at least 0.7. Hence, the measurement scales used to measure service quality and TQM were reliability. Moreover, a construct is valid if the following conditions provided by researchers [19]; [22] are met: AVE > MSV; MSV > ASV. In Table 1, these criteria are met for all domains of the two constructs. So validity of the scales is also confirmed.

In Table 2, TQM is positively correlated with service quality (R = .542, p = .000, two-tailed) at 1% significance level. This result suggests that

service quality delivered increases as effectiveness of TQM increases. Based on the above evidences, the following regression models are analysed.

Table 2. Correlation matrix

No.	Variable	1	2
1	Service quality	1	.542**
2	TQM		1

Source: Field work, 2017

In Table 3, two models are tested. With respect to the first model, TQM is treated as the predictor of service quality. In this regard, a total variance of 29.4% is accounted, with the error variance accounting for 70.6% of the total variance. In the second model, dimensions of TQM are treated as the predictors. As seen in Table 3, a total variance of 33.2% is produced by these predictors, suggesting that the model fit is better than that of the first. For both models, the ANOVA test is significant at 1% significance level. This result confirms the linearity of all models. In addition, the independence-or-errors assumption is met for each model on the basis of the Durbin-Watson statistic being close to 2.

Table 3. Model summary statistics

Model	DV	R^2	Adjusted R^2	Durbin-Watson	ANOVA	
					F	p-value
1	SQ	0.294	0.290	1.87	26.01	0.000
2	SQ	0.332	0.331	1.75	22.53	0.000

Source: Field work, 2017

Table 4. Coefficients of model 1

Predictor	B	β	T	P	95% CI Lower bound	95% CI Upper bound	Tolerance	VIF
(Constant)	43.760		3.097	0.000	7.012	31.659		
TQM	0.539	0.505	8.64	0.000	0.388	0.618	0.958	1.044

Source: Field work, 2017

Table 5. Correlation matrix of service quality and TQM dimensions

Variable	#	1	2	3	4
Service Quality	1	1	.470**	.397**	.553**
Quality Assurance	2		1	.702**	.644**
Quality Control	3			1	.702**
Asset management	4				1

Source: Field work, 2017
**Correlation significant at1% significance level
*Correlation is significant at 5% significance level

Table 6. Coefficients of model 2

Predictor	B	β	T	P	95% CI Lower bound	95% CI Upper bound	Tolerance	VIF
(Constant)	46.966		8.968	0.000	36.631	57.301		
Quality assurance	0.756	0.237	2.624	0.009	0.187	1.325	0.463	2.161
Quality control	-0.311	-0.1	-1.028	0.305	-0.906	0.285	0.400	2.497
Asset management	1.149	0.471	5.207	0.000	0.714	1.585	0.462	2.164

Source: Field work, 2017

In Table 4, TQM has a significant positive relationship to service quality at 1% significance level (β = 0.54, t = 8.64, p = .000). This confirms that increased level of TQM increases the level of service quality offered at GACL.

In Table 5, service quality is positively correlated with Quality Assurance (R = .470, p = .000, two-tailed), Quality Control (R = .397, p = .000, two-tailed), and Asset Management (R = .553, p = .000, two-tailed) at 1% significance level. This finding suggests that service quality increases as the effectiveness of quality assurance, quality control, and asset management increases.

In Table 6, asset management has a significant positive relationship to service quality at 1% significance level (β = 1.15, t = 5.21; p = .000). This finding indicates that service quality increases as the effectiveness of asset management increases. Quality Assurance on the other hand makes a positive effect on service quality at 5% significance level (β = 0.76, t = 2.62; p = .009). This result means that service quality increases as quality assurance increases.

Table 7 and Table 8 in the appendix show descriptive statistics on TQM and Service Quality.

In Table 7, every item of service quality accounts for a mean score of approximately 4. This means that the level of service quality is appreciable in the company. Tangibles account for a mean score of 3.68 (Mean = 3.68, SD = 0.58), which represents 79% of the total scale value. Responsiveness accounts for an appreciably high mean score of about 3.88 (Mean = 3.88, SD = 0.704), which represents about 78% of the maximum scale score. Assurance yields a mean score of about 3.98 (Mean = 3.98, SD = 0.699), which represents about 80% of the maximum scale value. Empathy accounts for a mean of about 3.94 (Mean = 3.94, SD = 0.689), whereas Reliability accounts for a mean of about 3.91 (Mean = 3.91, SD = 0.739). The mean scores produced by Empathy and Reliability represent 79% and 78% of the maximum scale score respectively.

In Table 8, every indicator of TQM produces a mean score of approximately 4. This suggests that the level of total quality assurance is appreciable. "The company's management seeks to achieve product quality based on customer expectation" (Mean = 4.21, SD = 0.80) and "Activities for achieving customer-expected quality are of interest in this organisation" (Mean = 4.24, SD = 1.01). "In this company, assets are well oriented to facilitate the productivity of employees" produces one of the lowest mean scores (Mean = 3.72, SD = 1.05). The overall TQM accounts for a mean score of about 77 (Mean = 77.33, SD = 10.88), which represents about 86% of the maximum scale value. Findings therefore suggest the level of TQM is high at GACL.

4.1 Discussion of Findings

Data analysis shows that the level of service quality delivered at GACL is satisfactory, with Tangibles being at the highest level. By implication, GACL provides an appreciable level of service quality. The delivery of high service quality in the public sector has been confirmed by some studies [23]; [11], but there have been many instances when the level of quality provided is low [10]. In spite of the various researchers 'confirmation that there is high service delivery in the public sector, there are pointers to the fact that this has not led to high satisfaction. This result is consistent with some studies [24]; [1] which reveal that service delivery in the public sector in developing countries rarely lead to customer satisfaction. Considering the monopoly exploited by GACL, this result is not farfetched.

Findings of this study also suggest that the level of TQM is appreciably high. Thus, GACL has a significant process of TQM that was aimed at providing quality services. Based on the study's findings, it is clear that the company delivered quality services. So there is a higher chance that TQM in GACL was being effective, at least in terms of its impact on quality delivery. In the literature, there are mixed evidences about the capability of public organisations to implement effective total quality management. Thus, whereas some studies [8]; [1]; [6] found a high level of TQM in the public sector, others [2]; [3] had a contrary finding. As a consequence, this study's finding is both supported and refuted in the empirical literature.

Results also indicate that TQM makes a positive effect on service quality delivery. This outcome confirms that TQM predicts items of the SERVQUAL model. This finding has been consistently confirmed in previous studies [23]; [9]; [11]; [5], except in few situations. It might therefore seem that increasing the level of TQM will increase the level of service quality delivery. However, given the challenges faced by customers in service delivery, perceived quality in the context of the SERQUAL model does not connote customer satisfaction. This evidence also supports the fact that the SERVQUAL model does not recognise specific problems faced by customers in service delivery.

To add to the above, two dimensions of TQM, which are asset management and quality assurance, make a significant positive effect on service quality. The practical implication of this finding is that service quality can be improved by enhancing the effectiveness of asset management and quality assurance. Moreover, quality control fails to make a significant effect on service quality. This result according to researchers [9]; [5], suggests that the level of effectiveness of quality control is low. It is thus imperative for the level of quality control in the organisation to be improved. Moreover, failure of this dimension of TQM to impact service quality is refuted by most studies conducted in foreign countries [17]; [9]; [5], with a few supporting it. In a Ghanaian context, the study of [1] found that the three dimensions of TQM (i.e. quality control, quality assurance, and asset management) make a significant effect on service quality. In essence, failure of quality control to make a significant effect on service quality in this study is refuted by [1].

In this study, this result can be attributed to two factors. The first is the various challenges faced by customers in service delivery – these challenges are capable of dissatisfying customers even when TQM and service quality is high. The second factor is the absence of covariates in the OLS regression models. Based on the argument of [22], it is likely that the impacts of TQM on service quality could have been altered by covariates. On the basis of findings reached in this chapter, conclusions and recommendations are presented in the next chapter.

5. CONCLUSIONS AND RECOMMENDA-TIONS

TQM makes a significant positive effect on service quality. Thus, service quality increases with total quality management. It is therefore concluded that improving the level of effectiveness of total quality management at GACL can increase the level of service quality delivered. Based on results of this study, total quality management makes a positive effect on service quality delivery at GACL. This finding suggests that improving the level of total quality management can lead to higher service quality. Nevertheless, the relationship between service quality and total quality management was not significant when potential confounding variables (i.e. employee education, customer education, employee tenure, and customer experience) were controlled for. This finding implies that these covariates make a significant impact on

TQM and service quality. For instance, TQM increases as employee education increases.

TQM is about improving the ability of the organisation to provide quality services or products from time to time. One of its principles is also to improve the level of quality delivered over time. Arguably, quality of services can be enhanced continuously when employees are able to improve their competencies over time. This argument is based on the fact that improving the competencies of employees is the basis for the firm's ability to provide services that meet the emerging needs of customers, basically because the needs of customers are always changing. Based on findings of this study therefore, service quality at GACL can be improved by taking relevant steps suggested as follows.

GACL has a TQM policy that guides the process of delivering services to customers. Sadly, however, the organisation lacks a TQM improvement culture in which steps are taken to enhance the impact of TQM on service quality delivery from time to time. This study thus makes the following recommendations for consideration by management of GACL:

i.   Management of GACL must develop a new policy framework that dictates continuous efforts to improve TQM and its impact on service quality delivery. This framework must ensure that TQM is improved to a minimum level each year.
ii.   Practical steps that can be taken to improve TQM each year must be specified and regularly practiced. With reference to the previous discussions, these steps include improving competencies of employees through formal education, training and development, and the enhancement of employee experience (i.e. tenure prolongation). Yet a more appropriate step to take in this vein is to identify customer needs ahead of time and take steps to meet these needs at all time in the process of TQM.

To facilitate the above-mentioned TQM improvement culture, management of GACL needs information about customers at all times. Since TQM enhancement is aimed at improving service quality over time, it is necessary for the said improvement culture to be based on information about new and emerging customer preferences and needs. Information from customers can reveal a trend in customer demand and change in preferences. This trend can be relied on to predict new customer expectations. Designing services to meet these expectations is a way to improve service quality from time to time in the context of TQM. Based on these understandings, the following recommendations are made:

i.   Management of GACL must adopt a policy that insists on conducting a customer survey at least twice in a year. This survey must focus on identifying the current level of customer satisfaction, emerging expectations, and weaknesses in GACL's current system.
ii.   The organisation must try to mitigate its weaknesses based on the customer survey by avoiding conditions that lead to customer dissatisfaction. More importantly, management must monitor the level of perceived service quality from one year to another. It must also overcome its weaknesses and incorporate emerging customer expectations in service delivery for the following year.

GACL currently has a performance monitoring and evaluation program. Unfortunately, this program is not sufficiently in harmony with TQM and the delivery of service quality. Undoubtedly, aligning monitoring and evaluation with total quality management is a requirement for implementing the said TQM enhancement culture and is interwoven with the process of monitoring customer experience. In view of this assertion, the following steps are recommended:

i.   Each employee must be well identified with his or her job roles. Supervisors and line managers must therefore be made to ensure that each employee delivers the highest possible level of performance in view of TQM goals.
ii.   Departments must be made to work more collaboratively to ensure that activities result in the delivery of quality services at all levels. Each individual and department must be given work quotas that must be delivered in time.
iii. More importantly, the extent to which departments, teams, and individuals accomplish responsibilities in the context of TQM must be observed from one period to another. The goal must be to improve the ability of these categories to

contribute to TQM from one year to the other.

6. LIMITATIONS AND FUTURE RESEARCH POINTERS

The main limitation of this study is the fact that its evidences came from data collected at the customer care centre of Kotoka International Airport (KIA) in Accra. For this reason, findings of this study do not reflect situations at other customer care terminals of KIA and cannot be inferred to these terminals. More so, the external validity of the study is low. In addition, some customers could not respond in this study because they could not have been able to express themselves in English, neither could they write well in this language. Such customers were not included in the study. One of the main goals of this study is to control for alternative explanatory variables in order to enhance the precision of the effect of TQM on service quality. However, it is unlikely that all confounding variables have been incorporated in testing the relationship between TQM and service quality in this study. As a consequence, the effect of TQM on service quality estimated in this study is not necessarily free of the influence of other alternative explanatory variables. GACL has other branches in Ghana, such as the Kumasi, Tamale and Takoradi offices. This study was focused on the Accra office because the researcher had limited time within which the study was to be completed. Similarly, funds available for the study were limited and could not support data collection in all centres of GACL.

It is suggested that future researchers replicate this study in order to incorporate other customer service terminals in the population of this study. By taking this step, future researchers can increase the external validity of this study and therefore reach findings that can be used to make decisions in all branches of GACL. There is also the need for future researchers to identify and incorporate all other confounding variables in testing the relationship between TQM and service quality. A more precise estimate of the effect of TQM on service quality can be reached by taking this step. Rigorous literature review can be used as a means for identifying these covariates. It must however be noted that future researchers must stick to controlling only relevant covariates. The relevant covariates are ideally alternative explanatory variables that can confound the relationship between TQM and service quality in the study population.

ACKNOWLEDGEMENT

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

Table 7. Descriptive statistics for service quality domains

Indicator/Construct	Mean	Std. Dev.
This firm have modern looking equipment.	3.99	1.04
The physical facilities in the firm are visually appealing.	4.10	0.80
Employees are neat in their appearance.	3.86	1.03
Materials associated with the service are visually appealing	3.78	0.90
Tangibles	**3.68**	**0.58**
When the firm's employees promise to do something by a certain time, they do.	3.97	1.02
When a customer has a problem, employees show a sincere interest in solving it.	4.06	1.15
The firm performs the service right the first time.	3.44	1.02
The firm provides the service at the time they promise to do so.	4.04	0.89
Responsiveness	**3.88**	**0.704**
The firm insists on error free records.	3.72	1.03
Employees tell customers exactly when services will be performed.	4.10	0.93
Employees give prompt service to customers.	3.76	1.01
Employees are always willing to help customers.	4.18	0.92
Employees will never be too busy to respond to customers' requests.	4.15	1.12
Assurance	**3.98**	**0.699**
The behaviour of employees will instill confidence in customers	3.82	1.00
Customers will feel safe in transactions.	3.81	1.02
Employees will be consistently courteous with customers.	4.15	0.99
Employees will have the knowledge to answer customers' questions.	3.89	1.03
This firm gives customers individual attention.	4.02	0.97
Empathy	**3.94**	**0.689**
This firm has operating hours convenient to all their customers.	4.04	1.00
This firm has employees who give customers personal service.	4.10	1.11
This firm has its customers' best interest at heart.	3.64	1.05
The employees of this firm understand the specific needs of their customers.	3.86	1.03
Reliability	**3.91**	**0.739**

Source: Field work, 2017

Table 8. Descriptive statistics for TQM items

Indicator/Construct	Mean	Std. Dev.
This firm has a leadership structure for meeting quality criteria of products	4.18	0.75
The organization has a policy/strategy for achieving specified quality levels in products	4.11	0.83
The company's management seeks to achieve product quality based on customer expectation	4.21	0.80
Activities for achieving customer-expected quality are of interest in this organization	4.24	1.01
The company has structures to improve upon the quality provided from time to time	4.01	0.85
Employees are regularly trained in to align their competencies with quality achievement goals	4.00	0.90
This business has a model by which it achieves it quality expectations	4.15	0.73
The company consistently defines customer needs and what can be done to achieve them	4.19	0.73
Data is always collected and analyzed on the current system of quality achieved	4.15	0.77
Evidences on the current level of quality achieved are used to identify ways to improve quality	4.03	0.85
In this company, the level of quality of products is monitored	4.00	1.07

Indicator/Construct	Mean	Std. Dev.
In this company, the level of quality of products has improved overtime	4.15	0.95
In this firm, assets procurement, storing and maintenance are the responsibility of a department/unit	4.04	0.92
The procurement of assets follows laid-down procedures	4.02	0.97
Assets are kept or stored in a manner that meet or exceed their life span	4.11	0.93
There is a policy that monitors the use of assets for business purposes only	4.08	1.15
There is a taskforce that monitors the use of assets for business purposes only	3.93	0.93
In this company, assets are well oriented to facilitate the productivity of employees	3.72	1.05
TQM	**77.33**	**10.88**

Source: Field work, 2017