

**How to Cite:**

Alomari, E., & Senathirajah, A. R. B. S. (2022). Determinants of a healthy quality environment in public secondary schools in Bahrain. *International Journal of Health Sciences*, 6(S8), 2690–2707. <https://doi.org/10.53730/ijhs.v6nS8.12736>

# Determinants of a healthy quality environment in public secondary schools in Bahrain

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**Abstract**---In this study, total quality management TQM principles are being implemented in the secondary school setting in the kingdom of Bahrain. This research examines the extent to which total quality management is used in the educational sector because it has permeated every industry. Additionally, the study sought to investigate the connections between TQM and total quality performance as well as TQM and quality culture. A questionnaire survey was used to explore the phenomenon from instructors' viewpoints. According to teachers' perspectives, the data analysis showed that TQM principles, such as communication, student happiness, and continuous improvement, are applied at public secondary schools in the Kingdom of Bahrain. As well as that, the study concluded that TQM principles affect the school quality culture and total quality performance.

**Keywords**---total quality management, TQM, quality culture, total quality performance.

**Introduction**

Standard and quality of educational systems are a major problem in Bahrain and other nations, especially with the current change. Education quality affects a country's ability to grow. This is why BQA was founded in 2008. BQA is an independent institution in Bahrain that reports to Cabinet. Education Reform Project aims to improve educational and vocational training in Bahrain, advancing Bahrain's people capital professionally. 1. complete commitment to successful communication, 2. student satisfaction commitment, 3. dedication to CQI. TQM in secondary schools need teachers (Hassan & Toorani, 2016). Student

discontent and poor school management are blamed on poor communication (Aiyepoku, 2000). Elahi & Ilyas (2019) and others emphasise TQM in schools for quality improvement.

### **Objectives of the Study**

This study examines whether principals in Bahrain's public secondary schools use TQM concepts of effective communication, student happiness, and continual quality improvement. Primary research goals were,

Research objective 1

Examine TQM in Bahraini secondary schools.

Research objective 2

Examine TQM techniques and quality culture in Bahraini secondary schools.

Research objective 3

Examine TQM procedures and total quality performance in Bahraini secondary schools.

### **Research Hypotheses**

The following hypotheses were formulated:

H<sub>1</sub>: Communication influences Bahrain's public secondary schools' quality culture.

H<sub>2</sub>: Customer satisfaction affects Bahraini secondary schools' quality culture positively.

H<sub>3</sub>: Improve continuously Positively affects Bahraini secondary school culture.

H<sub>4</sub>: Communication influences performance in Bahrain's public secondary schools.

H<sub>5</sub>: Customer satisfaction impacts public secondary schools' quality in Bahrain.

H<sub>6</sub>: Improve continuously Positively affects Bahrain's public secondary schools' quality.

### **Significance of the Study**

It contributes to the expanding body of information on quality management and TQM applications in secondary school. Reasons to study:

- School Administrators: where the findings of this study will provide information on the implementation of TQM.
- Teachers: This study will help teachers understand their role in implementing TQM principles.
- Students: TQM will improve student education.
- Future Researchers: This study's findings will help other researchers investigate TQM in Bahrain and other nations.

## **Literature Review**

### **TQM in Education**

The assumption that excellent Education is crucial for success in the global educational environment sparked a surge in interest in TQM in learning, (Militaru et al., 2013). 'Entire in TQM implies that the whole entity and everyone in the organization engage in continuous improvement operation,' according to Sallis (2015). Acuner (2020) stated TQM includes processes, outputs, and inputs. Scholars tried to transfer TQM principles from manufacturing to education, eventually adapting them to educational settings (Prakash, 2018), Pratasavitskaya, Stensaker (2010). TQM in Education improves morale, performance, student and parent services, and institution standards (Gupta, 2012).

### **Theoretical Framework**

Researchers working on TQM adoption in education claimed that communication at all levels is key to quality processes (Kulenovi et al., 2021). Educators and school officials must be willing to listen and learn to lessen anxiety and make TQM more accessible. According to quality experts, one of basic concepts of TQM is continuous improvement (Aquilani et al., 2017). Continuous Improvement may also be viewed as the steering wheel of an organization's vehicle, (Tareke, 2020).

### **TQM and Quality Culture QC**

Descriptions of quality cultures vary, Harvey (2008) claims the notion is interpretable and needs deconstruction. According to Harvey & Stensaker (2008), the term means more than turning quality assurance methodologies into daily practise.

1. Responsive: Focuses on analysing personal activities against external quality standards and improving.
2. Reactive: Reactive quality cultures emphasise external threats.
3. Reproductive: places a premium on maintaining the status quo.

With these ideal sorts, Harvey and Stensaker want to create a theoretical tool for determining what type of quality culture exists in a company or educational institution, (Harvey & Stensaker, 2008). This definition implies that organizational quality culture has several dimensions or aspects:

- It encompasses both hard and soft factors.
- It's an organisational culture that emphasises quality and shared ideals.
- It implies quality management procedures..

### **TQM and Total Quality Performance**

Academics have studied TQM and performance. Scholars have used financial, innovative, operational, and quality performance to study TQM and performance

(Bhaskar, 2020). Mehmood et al. (2014) said organisations had problems boosting performance. Their study focuses on customer attention, continuous improvement, worker participation, and managerial support. Al-Salim (2018) examined TQM's influence on Samarra University.

### Problem statement

According to Bahrain's economic vision 2030, the school system doesn't teach students the skills and information they need to succeed in the workforce. In Bahrain, one entity monitors schools' and colleges' educational processes and outputs. It's a government entity that examines educational institutions' performance and releases annual reports on the kingdom's education.

### Methodology

When starting with a little-known subject, quantitative methods aid deductive reasoning. Deductive quantitative research, inductive qualitative (Winter, 2000). The sample-at-a-specific-time problem makes qualitative results harder to generalise (Bryman, 2015). Quantitative research uses easily-convertible numbers or data (Goodwin & Goodwin, 2017). Measurements are made, then an intervention is tried, and the result is measured (Creswell & Creswell, 2018).

### Conceptual Framework

Based on the literature review, the following conceptual framework is proposed for this research. The application of the three TQM principles of communication, customer satisfaction, and continuous improvement is the independent variable.

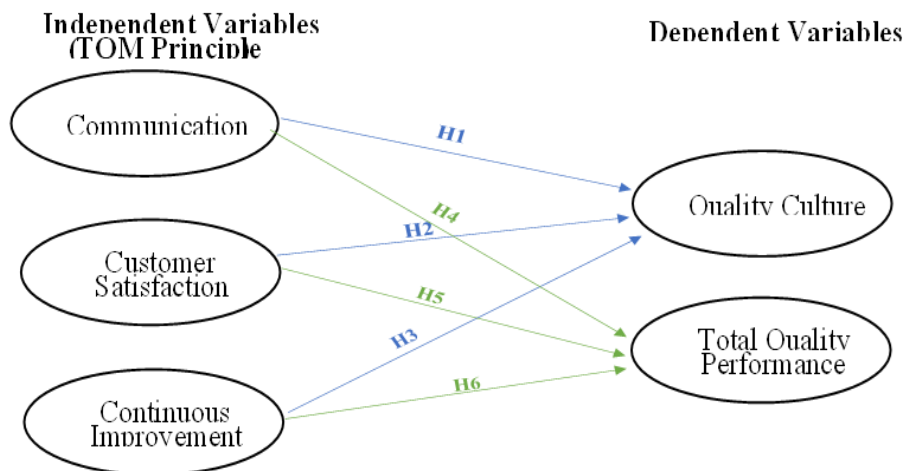


Figure 1: Conceptual framework

## Research Design

Fowler (2014) emphasized that a descriptive survey research strategy is one of the best for describing a specific phenomenon. The descriptive survey research approach was used for this study since the goal is to characterise TQM implementation through the respondents' personal perceptions (Mugenda & Mugenda, 2007).

## Measurement Items

This study uses three research methods. Phillip Hallinger's Instructional Management Behaviour Questionnaire is the first TQM study instrument (1985). Lewis and Smith developed the second quality culture research tool (1998). Third, total quality performance is obtained using the standard quality education checklist (Sallis, 2015).

## Population and Sampling

Mugenda and Mugenda (2007) defined the target population as population to which a researcher desires to generalize the results of the study. There are 37 male and female public secondary schools in the Kingdom of Bahrain according to Bahrain's ministry of education statistics reports, (Miaoulis and Michener, 1976).

$$\text{Sample Size} = \frac{(Z\text{-score})^2 \times \text{StdDev} \times (1 - \text{StdDev})}{(\text{confidence interval})^2}$$

## Validity of the Instrument

The researcher used content validity to validate the study instrument. In its first form, the instrument was offered to 10 Ph.D.-holding arbitrators in management. Any items that received consensus from a 8 arbitrators were included in the arbitration questionnaire.

## Reliability of the Instrument

Reliability is how well measuring tools function consistently (Huei et al., 2019). Solimun & Fernandes (2017) say reliability is crucial to data collecting validity, or if legal measuring instruments on repeated survey groups produce the same results. Sekaran (2002) advises using test-retest to establish external dependability (Devellis, 2017). Split-half and interitem consistency measure internal reliability (Sekaran, 2002). Streiner (2003) recommends 0.8.

## Data Analysis and Results

This research aims to determine, through a questionnaire survey of secondary school teachers in Bahrain, if current management practises are being implemented.

### Analysis of Demographic Information

Bahraini secondary school teachers responded. Targeting 250 responses. 205 educators responded. This response rate of 82% is representative of the 4136 public secondary school teachers studied. Second, respondents' teaching experience was collected. Less than 2 years, 2-5 years, 6-9 years, 10+ years. 16.59% of responders have fewer than two years' teaching experience. The researcher also wanted to know the respondents' ages. 58.54% of 120 teachers are aged 30-39. 24.39% of teachers are 40-49 years old. 22 teachers are 50 or older, 10.73%.

### Communication

Averages and standard deviations were utilised to show, analyse, and interpret study sample responses.

Table 1: The scale of degree of conformity

Weighted average	The degree of conformity
From 1 to 1.80	does not apply
> 1.80 to 2.60	Fair
> 2.60 to 3.40	Neutral
> 3.40 to 4.20	somewhat applies
> 4.20 to 5	definitely applies

Table 2: Mean and SD for total commitment to communication

	Mean	Std. Deviation
Communicate the school VGMO effectively to people in school setting	3,8000	0,85978
Refer the school VMGO to teachers	3,9073	0,87234
Discuss the school VMGO with teachers at faculty meeting	3,9317	0,91030
Ensure that the school VMGO are reflected in highly visible displays in the school	3,8732	0,90938
Total	3.878	0.887

Mean is 3.878. The overall standard deviation is 0.887, which is less than the proper one, indicating the answers' concentration.

### Customer Satisfaction

Table 3: Mean and SD for total commitment to student satisfaction

	Mean	Std. Deviation
Meet individually	3,7220	0,88326

Discuss the item analysis of test	3,8927	0,92259
Use test results to assess progress	3,8634	0,92930
Identify students who need skills enrichment	3,8146	0,89376
Actively monitor students'	3,7561	0,85120
Use a variety of instructional grouping patterns	3,8195	0,91908
Use a variety of classroom management skills	3,8732	0,87644
Assessment results	3,8634	0,85226
Results of assessment and evaluation are reported to parents	3,7854	0,93556
Positive recognition	3,9024	0,84031
Total	3.840	0.891

Mean is 3.840. The overall standard deviation is 0.891, which is less than the correct one, indicating the concentration of responses.

### Continuous Quality Improvement

Table 4: Mean and SD for total commitment to continuous improvement

	Mean	Std. Deviation
Schedule classroom visits	3,800 0	0,90964
Unscheduled class observations	3,804 9	0,81708
Make sure instructors' classroom goals match the school's VMGO.	3,941 5	0,86687
Evaluate student work	3,834 1	0,91384
Highlight strengths	3,878 0	0,87434
Identify weaknesses	3,819 5	0,92969
Teachers discuss student activities	3,819 5	0,90294
Teacher-created and curricular tests are employed.	3,809 8	0,92773
A remediation process exists	3,858 5	0,88256
Total	3.820	0.896

Mean is 3.820. On the Likert scale, this average falls between 3.40 and 4.20.

### Quality Culture

Table 5: Mean and SD for quality culture

	Mean	Std. Deviation
1 Accepts responsibility	3,9610	,86230
2 Long-term planning at school	3,8829	,86089

3	Acceptance of human rights, diversity	3,8780	,92871
4	Workers empowered	3,7659	,87660
5	Management-backed workers	3,7902	,91817
6	Shared vision	3,7756	,90119
7	Meet consumer needs	3,8195	,78065
8	Customer-driven service development	3,7512	,90292
9	Predict customer satisfaction	3,8488	,91371
10	Study wins and losses	3,8341	,88661
11	Define quality for essential processes.	3,8537	,89006
12	Constant feedback	3,7561	,91770
13	Study others	3,9366	,89710
14	Feel "I belong"	3,8878	,84720
15	Recognize contribution	3,8976	,90977
16	Learn continuously	3,8244	,90119
17	Committed to team	3,8634	,86935
18	Share customer vision	3,7951	,93251
19	"Connected" to customer	3,8293	,92096
20	Cooperate at all levels	3,8244	,84505
21	Total quality all systems/processes	3,7902	,86314
22	Roles/responsibilities	3,7707	,86948
23	Promote innovation	3,7707	,93992
24	Better quality	3,8244	,88472
25	Accept variance	3,8439	,93674
26	Members constantly learn	3,8439	,93149
27	Results-tracking	3,9024	,87461
28	Quality involves constant improvement	3,8488	,91371
Total		3.834	0.892

Mean is 3.834. On the Likert scale, this average falls between 3.40 and 4.20.

### **Total Quality Performance**

Table 6: Mean and SD for total quality performance

	Mean	Std. Deviation
Excellent student exam results	3,8488	0,87535
Caring environment	3,7317	0,91353
Priority is students' welfare	3,7805	0,86637
Resourcefulness	3,8585	0,86574

All-abilities commitment	3,8000	0,87671
Community praise, good pupils	3,7463	0,88231
Total	3.79	0.88

Total quality performance has a mean of 3.79 across all expressions.

### Research Hypotheses 1,2 & 3

H1: Communication influences Bahrain's public secondary schools' quality culture.

H2: Customer satisfaction affects Bahraini secondary schools' quality culture positively.

H3: Continuous quality influences Bahrain's public secondary schools' quality culture.

Table 7: Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	,732 <sup>a</sup>	,536	,526	,31502	,536	57,680

The ANOVA test results are presented in table 8.

Table 8: Research hypotheses 1,2,& 3 ANOVA test results

		ANOVA <sup>a</sup>				
Model		Sum Squares	df	Mean Square	F	Sig.
1	Regression	22,896	4	5,724	57,680	000 <sup>b</sup>
	Residual	19,847	200	,099		
	Total	42,743	204			

The coefficients are presented in table 9.

Table 9: Research hypotheses 1,2,&3 coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	,435	,223	,052	1,951	,052
	Dedicated to	,091	,051	,076	1,784	,076

Effective Communication					
Student Satisfaction Commitment	,164	,077	,035	2,120	,035
Commitment to CQI	,142	,072	,052	1,954	,052
Quality Culture	,478	,097	,000	4,919	,000

From the model summary above, it's evident that  $F = (57.680)$  is more than  $F$  tabular (30.04) and that (0.000) is less than 0.05. Significantly ( $=0.05$ ). The table also reveals that  $R = 0.732$  and  $R^2 = 0.536$ , implying that 53.6% of the dependent variable's variance can be explained by the independent variables. The standardised beta coefficient for Hypothesis 1 is 0.076, which is not significant. The standardised beta coefficient for Hypothesis 2 is 0.035, indicating a significant association. The standardised beta coefficient for Hypothesis 3 is 0.052, but the association isn't significant.

### Research Hypotheses 4,5 &6

H<sub>4</sub>: Communication influences performance in Bahrain's public secondary schools.

H<sub>5</sub>: Customer satisfaction impacts public secondary schools' quality in Bahrain.

H<sub>6</sub>: Continuous quality influences Bahrain's public secondary schools' overall quality.

For the above research hypotheses, a linear regression test was carried out to confirm whether there was an affect.

Table 10: Research hypotheses 4,5, & 6 model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,692 <sup>a</sup>	,479	,472	,33270

The ANOVA test results are presented in table 11.

Table 11: Research hypotheses 4,5, &6 ANOVA test results

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20,495	3	6,832 ,111	61,718	,000 <sup>b</sup>
	Residual	22,249	201			
	Total	42,743	204			

The coefficients are presented in table 12.

Table 12: Research hypotheses 4,5, &amp;6 coefficients

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	,725	,227	,002	3,195	,002
	Dedicated to Effective Communication	,152	,053	,004	2,888	,004
	Student Satisfaction Commitment	,345	,072	,000	4,799	,000
	Dedication to Quality Persistence Improvement	,302	,068	,000	4,412	,000

### Dependent Variable: Total Quality Performance

From the tables presented above it becomes clear that the calculated value of (F) amounted to (61.718) is greater than the value of (F) tabular (30.04) and that the level of statistical significance is (0.000) which is less than 0.05. A statistic at a significant level ( $\alpha = 0.05$ ). TQM practices (Communication, student satisfaction, and continuous improvement) positively and significantly affect schools' total quality performance. The table also shows the correlation coefficient (R) = 0.692 and the determination coefficient ( $R^2$ ) = 0.479 meaning that 47.9 % of variation in the dependent variable can be explained by the independent variables. The standardised beta coefficient for Hypothesis 4 is 0.004. The standardised beta coefficient for Hypothesis 5 is 0.000. The standardised beta coefficient for Hypothesis 6 is 0.000.

### Discussion and Conclusion

#### Summary of Main Findings

The subsequent quantitative phase of this study involved a questionnaire survey with a random sample of 205 public secondary school teachers. The *IBM SPSS Statistics 27 software* program was used in analysing the collected questionnaire data. For the introductory *Demographic Information* section, descriptive statistics were used.

- 1- Bahraini secondary schools prioritise communication.
- 2- Bahrain's public secondary schools prioritise student satisfaction.
- 3- Bahraini secondary schools commit to constant improvement.

## **Discussion of Main Findings**

### **Total Commitment to Effective Communication**

The Likert scale goes from 1 to 5, so a mean of 3.878 means all items in the category "somewhat apply" to administrators. The third highest mean was for administrators to ensure that the school VGMO is prominently displayed with a mean of 3,8732 and an SD of 0,90938, and the least applicable item was for administrators to communicate the school VGMO effectively to the school community with a mean of 3,8000 and an SD of 0,85978.

### **Total Commitment to Student Satisfaction**

The null hypothesis is rejected since the ten items used to determine whether public secondary schools in Bahrain are committed to student satisfaction averaged 3.840. 1-5 Likert scale. The highest mean was 3,9024 for administrators' positive acknowledgement of students who master curriculum objectives. The SD was 0,84031.

### **Total Commitment to Continuous Quality Improvement**

In the nine items included in the measurement of whether total commitment to continuous improvement is implemented in public secondary schools in Bahrain, the total mean was 3.820. Because the Likert scale on the items in the questionnaire ranges from 1 to 5, the mean of 3.820 suggests that all the items in this category "somewhat apply" to administrators due to the fact that they all fall within 3.40-4.20.

### **Research Hypotheses 1,2 &3**

H<sub>1</sub>: Communication influences Bahrain's public secondary schools' quality culture.

H<sub>2</sub>: Customer satisfaction affects Bahraini secondary schools' quality culture positively.

H<sub>3</sub>: Improve continuously Positively affects Bahraini secondary school culture.

It can be concluded that total commitment to student satisfaction has a t-value  $\geq 1.645$  thus significant at the 0.05 level of significance and has the greatest effect on quality culture whereas total commitment to continuous improvement and total commitment to effective communication are not considered statistically significant.

### **Research Hypotheses 4,5 & 6**

H<sub>4</sub>: Communication influences performance in Bahrain's public secondary schools.

H<sub>5</sub>: Customer satisfaction impacts public secondary schools' quality in Bahrain.

H<sub>6</sub>: Improve continuously Positively affects Bahrain's public secondary schools' quality.

It can be concluded that all the three variables have a t-value  $\geq 1.645$  thus significant at the 0.05 level of significance and all 3 variables have an effect on quality performance.

### **Implications**

This study has important consequences for Bahraini secondary school leaders. The findings show that TQM concepts are crucial for implementing TQM in secondary schools. Senior leaders act as catalysts in implementing quality management systems, according to Badri et al. (2006). Implementing and sustaining TQM principles in schools requires apparent commitment and assistance from administrators in integrating TQM practises in organisation culture, according to the results (Avila, 2018).

### **Limitations of the Study**

This research was constrained by studying TQM principles and their effects on quality culture and total quality performance from the perspective of teachers alone, not administrators, parents, or students. Due to the global pandemic's spread and the researcher's spatial limits, this research is mainly quantitative.

### **Recommendations for Future Research**

As a result of this study, the following could be attempted to be achieved in future studies:

- 1- Investigating a bigger set of TQM principles.
- 2- Investigating TQM concepts and their effect on quality culture and total quality performance from the standpoint of administrators, parents, or students, or combining and contrasting different groups' views.
- 3- Investigating TQM concepts and their effect on quality culture and total quality performance in primary, intermediate, or university education.

### **Conclusion**

Although administrators in Bahrain's public secondary schools tend to implement TQM concepts, most study shows they "slightly apply" rather than "absolutely apply." Total commitment to student satisfaction, ongoing improvement, and good communication determine school culture and performance. Because of its importance at all levels, more research and attention should be dedicated to applying Total Quality Management to education quality. Administrators and authorities should work harder to adopt TQM concepts.

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