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Factors Affecting Total Quality Management among Government Offices during COVID-19 Pandemic

GRACE MEROFLOR A. LANTAJO
https://orcid.org/0000-0002-2754-9445
gracemeroflor_lantajo@yahoo.com
Asst. Professor of Public Administration
College of Development Management
University of Southeastern Philippines

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ABSTRACT

The study was conducted to determine the underlying factors affecting total quality management during the Covid-19 pandemic. The study used a qualitative non-experimental research design using exploratory factor analysis. A total of 120 respondents were recruited through stratified random sampling among government agencies in Davao city to answer a 30-item researcher-made questionnaire. Results of the study revealed that most of the respondents were college graduates, female, and have permanent occupational status. The findings show four factors affecting total quality management during a pandemic: challenges in the workplace, flexibility in keeping quality process, entrenching a culture of quality, and management involvement. A framework on factors affecting total quality management during the pandemic was developed. It was recommended that Government agencies should provide a clear guideline by adopting new procedures in the application of TQM in the new normal, conduct virtual seminars and trainings to employees, innovate strategies and mechanisms on the processes, top management must consistently monitor and control the system, focus on improving, listen feedbacks on clients and respond to change for quality service.

KEYWORDS

Total quality management, government agencies, COVID-19, Philippines

INTRODUCTION

The total quality management system (TQMS) is an organized approach to long-term success through customer satisfaction. It is the continual process of discovering and eradicating errors in management to ensure that employees are effective and efficient in their service (Barone, 2021). However, when the Covid-19 virus spreads throughout the world, it threatens the life and safety of everyone.

The pandemic continues to affect the working condition, where 95% of workers reportedly work from home because of the outbreak (Eatough, 2021). In the Philippines, the President issued Executive Order No. 112, imposing an enhanced community quarantine in high-risk geographic areas of the Philippines and a general community quarantine in the rest of the country by adopting the omnibus guidelines on the implementation. The work dynamic shifted overnight, affecting the procedure of every government service.

All government employees who carry out all their activities at home, from offices, schools, and even frontline workers, were given guidelines on limited movements. All were affected, including implementing the total quality management system in all government agencies. This study aimed to determine the factors affecting government agencies' total quality management system during the Covid-19 pandemic.

OBJECTIVE OF THE STUDY

This study was conducted to determine the factors affecting total quality management during Covid-19 pandemic.

METHODOLOGY

The study used a qualitative non-experimental research design using exploratory factor analysis. A total of 120 respondents were recruited through stratified random sampling among government agencies in Davao city to answer a 30-item researcher-made questionnaire.

RESULTS AND DISCUSSION

Table 1. Profile of Respondents in Terms of Educational Attainment

Educational Level	N	Percentage
College level	20	16.67
College graduate	79	65.83
Graduated graduate studies	18	15
Graduated post graduate program	3	2.5
Total	**120**	**100**

Table 1 indicates that most respondents were college graduates with 79 or 65.83 %, followed by college-level 20 or 16.67%, 18 or 15% graduated graduate studies, and 3 or 2.5% graduated the post-graduate program. The result shows that majority of the respondents were college graduates.

Table 2. Profile of Respondents in Terms of Gender

Gender	N	Percentage
Female	75	62.5
Male	45	37.5
Total	120	100

Table 2 shows that most of the respondents were female with 75 or 62.5%, while the remaining 45 or 37.5% were males. It was observed that the majority of the respondents were women or wives.

Table 3. Profile of Respondents in Terms of Occupational Status

Occupational Status	N	Percentage
Permanent	64	53.3
Probationary	21	17.5
Contractual	35	29.17
Total	120	100

Table 3 shows the occupational status in which 64 or 53.3% of the respondents were permanently employed, while 35 or 29.17% with contractual employment status, and 21 or 17.5% had probationary employment status. This shows that most of the respondents had permanent status.

Constructs of Factors Affecting Total Quality Management

Table IV. KMO and Barlet's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.941
Bartlett's Test of Sphericity	Approx. Chi-Square	3555.503
	df	435
	Sig.	.000

Table 4 shows the Keiser Meyer Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. It can be gleaned that the KMO value is .941, which implies that the samples are in high correlations, and it allows factor analysis that fits for data. Almalak et al. (2014) recommend that values greater than .5 are acceptable. Values .5 to .7 are mediocre, values between .7 and .8 are good, values between .8 and .9 are great and values above .9 are superb.

As shown, Bartlett's test was performed of Sphericity yields a value of 3555.503 and a level of significance smaller than .001 signifies that it allows the data proceed factoring the underlying factors affecting Total Quality Management during Covid-19 pandemic.

Moreover, he preliminary analysis, it can be generalized that the items in the tool are suitable and adequate for the extraction of factors and thus ready for factor analysis.

Table 5. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.806	52.686	52.686	15.806	52.686	52.686	7.376	24.587	24.587
2	1.534	5.112	57.798	1.534	5.112	57.798	5.756	19.188	43.774
3	1.349	4.496	62.294	1.349	4.496	62.294	3.85	12.833	56.607
4	1.106	3.688	65.982	1.106	3.688	65.982	2.661	8.869	65.476

The derivation of factor structure was determined through the eigenvalues of the components. As a rule of thumb, components are selected whose Eigenvalue is at least 1. It presents the number of extracted factors, the initial Eigen values associated with specified factors, the percentage of the total variance, and the cumulative percentage of each factor. After utilizing the criterion for Eigenvalue, the 30 items that seem to

measure four underlying factors were obtained. The initial Eigen value of 1 or greater is the four factors affecting Total Quality Management during the Covid-19 pandemic**.**

Scree Plot. Figure 1 shows that the first four factors account for most of the total variability in data (given by the Eigenvalues). The Eigenvalues for the first four factors as presented were all greater than 1. The remaining factors accounted for a very small proportion of the variability and were likely unimportant.

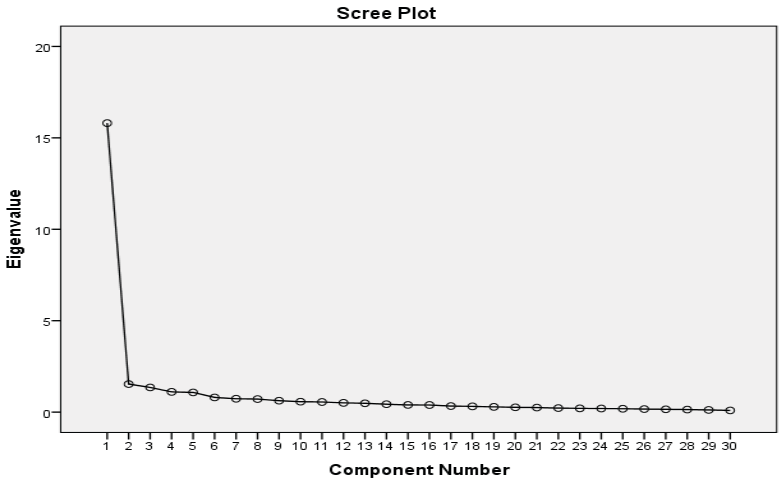

Figure 1. Graphical Explanation of Total Variance

Rotated Component Matrix. After identifying the number of factor structures, the 30-item was assigned to rotation. Table 5 shows the pattern matrix using Principal Component Analysis with a rotation method of Varimax with Kaiser Normalization. Based on the standard rule of factor analysis (EFA), items with a loading value of less than .60 should be excluded. Field (2005) supported it, who reported that a loading value of at least .60 is recommended and necessary to obtain the desired factors. As observed in Table 5, seven items have a loading coefficient below .60. These are Item 2, Item 7, Item 14, Item 15, Item 16, Item 17, Item 19, Item 21, Item 22, Item 23, and Item 28. These items which have face validity issues and low communalities are removed in the model. This is supported by Hair et al. (2010), who posited that items with no sense and not reflective of the factor can be removed in the model. Also, Hair et al. (2010) reported that the researcher could set loading coefficients to select only those items that best represent the factor, and those low coefficients may not be included in the factor structure. Moreover, Field (2005) stated that the suppression of communalities less than .60 and ordering variables by loading size would make interpretation easier because there is no need to scan the matrix to identify substantive loadings.

Furthermore, it can be observed in the table that there is no item cross-loading or not loading at all, which means that the items best represent their factors. It is emphasized by Hair et al. (2010) that loadings indicate the degree of correspondence between the variable and the factor, with higher loadings making the variable representative of the factor.

Rotated Component Matrix with Group Items.

Based on the criterion, a total of 26 items were categorized into four constructs, namely: Continuous Process Improvement, Empowering Employees, Management Involvement, and Client-Centered. These constructs and the categorized items are presented in tables and discussed with other related scientific studies. New understanding and insights that emerged from the results of the study were also discussed.

Table 6. Rotated Component Matrix with items Grouped under Challenges in the Workplace.

Items	Factor Coefficient	Construct
Item 8. Possible transmission of COVID-19 in the workplace	.815	**Challenges in the workplace**
Item 13. Provide measures in protecting employee's physical and mental health safety.	.686	
Item 9. Guidelines on placing and maintaining physical distance between persons in the office.	.682	
Item 10 Provide recommendations for prevention and mitigation of COVID-19 at work in the context of the pandemic.	.652	
Item 11. Risk on communication and community engagement	.646	
Item 5. Employees who may begin to show symptoms are not allowed to enter the premises.	.627	

Table 6 shows the six items that fall under the first construct, challenges in the workplace, and their corresponding loading coefficients. As shown, the item 'possible transmission of COVID-19 in the workplace' obtain the highest loading coefficient of .815. The item 'provide measures in protecting employees' physical and mental health safety' obtains a loading coefficient of .686. The item 'guidelines on placing and maintaining physical distance between persons in the office' obtain a loading coefficient of .682. The item 'provide recommendations for prevention and mitigation of COVID-19 at work in the context of the pandemic' obtained the loading coefficient of .652. The item 'risk on communication and community engagement' obtain a loading coefficient of .646. Finally, the item 'employees who may begin to show symptoms

are not allowed to enter the premises obtain a loading coefficient of .627. The finding affirms with Spell, 2020 when keeping the workplace safe once employees physically return coupled with being transparent about precautions taken to alleviate employee concerns is of the utmost importance of the institution.

Table 7. Rotated Component Matrix with items Grouped under Flexibility in Keeping Quality Process.

Items	Factor Coefficient	Construct
Item 3. Provide concreate guidelines from the management for TQM in the new normal.	.622	**Flexibility in Keeping Quality Process**
Item 4. Create monitoring mechanics on employee's performance in the application of TQM.	.618	
Item 12. Allocate budget for the purchase on IT programs, computers, cellphone, etc. needed for the employees.	.605	
Item 27. Adopt the new mechanics and strategies on TQM.	.602	
Item 26. Overload phone calls, text messages, group chats, social networks, and internal meetings that failed to response clients base on TQM	.601	

Table 7 shows the five items that fall under the first construct, flexibility in keeping quality process and their corresponding loading coefficients. As shown, the item 'provides guidelines from the management for total quality management in the new normal' obtain the highest loading coefficient of .622. The item 'create monitoring on employees' performance in the application of TQM' obtained the loading coefficient of .618. The item 'allocate budget for the purchase of IT programs, computers, cellphones, etc., is needed for the employees to obtain the loading coefficient of .605. The item 'adopt the new mechanics and strategies on TQM' obtained a loading coefficient of .602.

Finally, the item 'overloaded phone calls, text messages, group chats, social networks, and internal meetings that failed to respond to the client's base on TQM' obtained the loading coefficient of .601. The findings emphasized that managing an organization for the quality procedure must be timely by adopting new strategies. Such an opportunity to affect employee engagement improves customer satisfaction and provides good public perception to an organization (Silver et al., 2016).

Table 8. Rotated Component Matrix with items Grouped under Entrenching culture of quality.

Items	Factor Coefficient	Construct
Item 25. Provide training and coaching as key responsibilities of top management and department heads.	.717	**Entrenching culture of quality**
Item 20. Continual improvement for processes and services.	.705	
Item 24. Ensure effective client arrangement in response to their queries and needs.	.685	
Item 30. Create innovate in the TQM processes to improve services.	.612	
Item 29. Focus on engagement in work culture to boost positive work morale.	.610	

Table 8 shows the four items that fall under the first entrenching quality culture and their corresponding loading coefficients. As shown, the item 'provide training and coaching as key responsibilities of top management and department heads' obtain the highest loading coefficient of .717. The item 'continual improvement for processes and services' obtain a loading coefficient of .705. The item 'ensure effective client arrangement in response to their queries and needs' obtained the loading coefficient of .685. The item 'create innovations in the total quality management processes to improve services' obtain the loading coefficient of .612. Finally, the item 'focus on engagement in work culture to boost positive work morale' have a loading coefficient of .610. The result shows the significant application of preferred alternatives to maintain quality service consistently. Everyone must take quality-focused actions, hear others talking about quality, and feel quality around them (Lukman, 2014).

Table 9. Rotated Component Matrix with items Grouped under Management Involvement.

Items	Factor Coefficient	Construct
Item 18. Provide direction on how to improve the situation.	.655	Management involvement
Item 1. Set goals that are measurable.	.617	
Item 6. Continuous monitoring on the performance of the employees and improvement of the system.	.615	

Table 9 shows the three items that fall under the first construct, management involvement and their corresponding loading coefficients. As shown, the item 'provides

direction on improving the situation obtained the highest loading coefficient of .655. The item 'set goals that are measurable' obtained the loading coefficient of .617. The item 'continuous monitoring on the performance of the employees and improvement of the system' obtain a loading coefficient of .6.15. The findings reflect that manager must apply to monitor and control the quality in the organization by focusing on the sources of defects and providing a solution to the situation (Singh et al., 2020).

Framework of factors affecting Total Quality Management System among government agencies during Covid-19 Pandemic.

Figure 2 shows the responses have chosen four factors affecting TQMS among government agencies during the Covid-19 Pandemic. These include, first, the challenges in the workplace on how the agencies can protect their employees that will provide measures to avoid the spread of the disease. Second, the flexibility in keeping quality process by adopting new strategies and mechanics to maintain the application of TQMS in response to the clients' needs. The third is entrenching quality culture by listening to feedback and responding to it to improve the processes. Lastly, the management must ensure involvement in acting as a facilitator at the workplace. It is the duty to assist employees and provide alternatives to maintain the total quality management in all government agencies.

CONCLUSIONS

The findings of many of the respondents are college graduates, female and permanent in their jobs. There are four factors affecting the total quality management system among government agencies during the Covid-19 pandemic: challenges in the workplace, flexibility in keeping quality, entrenching a culture of quality, and management involvement.

RECOMMENDATION

Government agencies should provide a clear guideline by adopting new procedures in the application of TQM in the new normal, conduct virtual seminars and trainings to employees, innovate strategies and mechanisms on the processes, top management must consistently monitor and control the system, focus on improving, listen feedbacks on clients and respond to change for quality service.

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