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A CASE STUDY ON THE IMPACT OF ORGANIZATIONAL CITIZENSHIP BEHAVIOUR ON TOTAL QUALITY MANAGEMENT IN AN INDIAN PUBLIC SECTOR ELECTRICAL MANUFACTURING SUBSIDIARY

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Abstract

Since 1970s, the study on Organizational Citizenship Behaviour (OCB) has been conducted and the importance of this extra-role behaviour has been established. This study is conducted with a purpose of examining the impact of OCB on Total Quality Management (TQM), and to single out the most influential element of OCB towards TQM. The study was conducted in a public sector electrical machine manufacturing company that is located in South India. The data was collected using a questionnaire and Structural Equation Modeling (SEM) using Partial Least Square (PLS) method was employed to analyse the data and test the hypotheses. The results of the research shows the influence of each of the five dimensions of OCB viz. altruism, courtesy, dedication, sportsmanship and civic virtue on TQM, and explains the influence of Organizational Citizenship Behaviour dimensions on Total Quality Management in the context of an electrical manufacturing company. The study highlights the dimensions of OCB that significantly influence the Total Quality Management, and suggestions are provided to help the stake holders in strategic planning.

1. INTRODUCTION

In the past two decades, Organizational Citizenship Behaviour (OCB) has occupied an important space in the organization theory literature. OCB has a great role in providing loyalty and satisfaction to the customer. It also plays an important role in performance improvement and job satisfaction. The

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study on the impact of OCB on TQM is present in existing literature (Jung & Hong, 2008), however, a specific investigation with respect to an Indian electrical manufacturing company has not been reported. This research is designed to identify the various dimensions of Organizational Citizenship Behaviour and examine how OCB relates to Total Quality Management. Although the field and literature of OCB has enhanced a lot, there are still many areas of uncertainty and unknowns related to this area. Studies have been conducted on the effect of OCB on group performance (Sevi, 2010). Recently, a research was carried out which explains the role of OCB as a component of job performance (Dehghanan & Mafakheri, 2014). Limited studies have explored the impact of OCB on Total Quality Management. The motivation to carry out this research stems from a variety of reasons. Organizational Citizenship Behaviour is a key factor for a survival of an organization. OCB can promote the effective functioning of an organization and maximize its efficiency. Total Quality Management can contribute to competitive advantage and performance (Flynn *et al.*, 1995). Hence establishing the link between these two crucial factors of a business can be helpful to create organizational competence and effectiveness.

Past studies conducted by various researchers have shown that the organizational citizenship behaviour plays a vital role in advancement and growth of an organization. The success of an organization needs employees to work more than their usual work and provide better performance that is beyond expectations. The study of impact of organizational citizenship behaviour on TQM has not been documented in an Indian context. This research will enable the organization to identify the factors of OCB which can significantly influence TQM, so that those factors can be focused more upon. Hence the problem statement for this research is to identify the relationship between Organizational Citizenship Behaviour and Total Quality Management, and also to study the Organizational Citizenship Behaviour dimensions which have a significant influence on Total Quality Management, in the context of an Indian electrical manufacturing company.

The research questions formulated with reference to the problem statement are as follows:

RQ1: What is the current level of the organizational citizenship behaviour in the organization?

RQ2: What is the status of total quality management in the organization?

RQ3: Is there any relationship between organizational citizenship behaviour and total quality management?

RQ4: Which are the organizational citizenship behaviour dimensions that have a significant influence on total quality management?

RQ5: Which of the organizational citizenship behaviour dimension has the most significant influence on total quality management?

2. LITERATURE REVIEW

2.1. Organizational citizenship behaviour

Organizational Citizenship Behaviour (OCB) has been identified as a key construct in the field of organizational behaviour. According to Oplatka (2009), on the basis of past conceptualization of OCB, the definition of OCB refers to several elements such as work beyond formal task behaviour, behaviour based on personal choice, behaviour directed towards the organization, and avoiding the harmful behaviours to the organization. Organizational Citizenship Behaviour has also been defined as "a type of behaviour of an organization's employees that is aimed at promoting the effective performance of the organization, regardless of the individual productivity objectives of each employee" Organ (1988).

No.	Dimensions	Meanings
1	Conscientiousness	Role Behaviours of the employees which is well beyond the minimum required levels
2	Altruism	Provides help to others.

Table 1: Five dimensions of OCB (Organ, 1990)

3	Civic virtue	Responsible participation of the employees in the political life of the organization.
4	Sportsmanship	Employees do not complain, but they have positive attitude.
5	Courtesy	Treats others with respect, prevents problems and facilitates constructive use of time.

2.2. Total quality management

In the modern day scenario, the effective implementation of TQM, for world-class performance and leadership, is a necessity (Movahedi & Koupaei, 2011). TQM is a management system that involves all the employees in a continual improvement of all aspect of an organization for a customer focussed organization. Much research has been carried out in this area. But very few of them study the relationship between OCB, TQM and organizational performance. In this study we analyse a conceptual model which links OCB dimensions to TQM, which is developed based on literature review (Table 2).

Author (year)	Summary
Demirbag <i>et al.</i> (2006)	 An analysis of the relationship between TQM implementation and organizational performance. Dimensions of TQM were identified and empirically validated the relationship.
Jung and Hong (2008)	 OCB, TQM and Performance at the Maquiladora. The OCB significantly impact how TQM is managed and implemented
Narimani <i>et al.</i> (2013)	 A study was conducted in an Isfahan steel melting Company in Iran. Empirically proved that the relationship between OCB and TQM Identified the mediating effect of TQM between OCB and ERP

Table 2: Literature review on OCB and TQM

3. HYPOTHESES DEVELOPMENT

3.1. Conceptual model

The conceptual model shown in the figure 1.1 for this research is the basis of forming the research hypotheses for this study. The model depicts the relationship between OCB and TQM, and also the relationship between the dimensions of OCB and TQM.



Figure 1: Conceptual model

3.2. Research hypotheses

Several researches have analysed the existing problem and different possible ways are suggested to overcome the obstacles affecting the performance of the company. These obstacles can be solved to a certain degree by increasing the training and compensation. The essential solution may be drawn by relating the dimensions of OCB and TQM. Since OCB and TQM have been theorized to have positive significance between each other, it stands to reason that employees going above and beyond what is required of them, will positively impact the TQM (Lambert, 2000; Sommer & Merrit, 1994). Thus, we propose the null and alternative hypotheses as follows:

 H_{1o} : There is no significant relationship between OCB and TQM. H_{1a} : There is a significant relationship between OCB and TQM.

OCB-altruism, in particular, facilitates co-working nature in an organization, like providing help to others which is indeed a building block of a successful TQM implementation. Altruism is the behavior that concerns with the helping others in the problems related to works, like helping colleagues on their job assignments (Organ, 1988).

 H_{2o} : There is no significant relationship between altruism dimension of OCB and TQM. H_{2a} : There is a significant relationship between altruism dimension of OCB and TQM.

OCB-conscientiousness is the role Behaviours of the employees which is well beyond the minimum required levels. Employees spend more time in the organization and gives effort beyond the formal requirements (MacKenzie *et al.*, 1993).

 H_{3o} : There is no significant relationship between conscientiousness dimension of OCB and TQM. H_{3a} : There is a significant relationship between conscientiousness dimension of OCB and TQM.

OCB-civic virtue dimension facilitates greater communication between top management and employees (Bell & Mengue, 2002). Civic virtue behaviour of an employee is the responsible participation of the employees in the political life of the organization (Organ, 1990).

 H_{4o} : There is no significant relationship between civic virtue dimension of OCB and TQM. H_{4a} : There is a significant relationship between civic virtue dimension of OCB and TQM.

OCB-Sportsmanship Behaviour of employees is to tolerate unexpected circumstances without complaining, instead have positive attitude which is willing to sacrifice their personal interest at the expense of the work group success (Podsakoff *et al.*, 2000). Hence is it is hypothesised as follows:

 H_{50} : There is no significant relationship between sportsmanship dimension of OCB and TQM. H_{5a} : There is a significant relationship between sportsmanship dimension of OCB and TQM.

OCB-Courtesy is a discretionary behaviour of employees not to create problems related to work instead treats others with respect (Organ, 1990). Therefore it is hypothesised as follows:

 H_{60} : There is no significant relationship between courtesy dimension of OCB and TQM. H_{6a} : There is a significant relationship between courtesy dimension of OCB and TQM.

4. RESEARCH METHODOLOGY

The data for this study is collected by conducting a survey using a standard questionnaire. The different software and statistical tools that are used in administering the tests on the data are discussed in this section.

4.1. Data analysis

4.1.1. Structural equation modeling

Structural equation modeling (SEM) is defined as a statistical process for testing and estimating causal relations using an integration of statistical data and qualitative causal speculations. Recognizing the pattern of correlation among a set of variables and ample variance is described for a specified model are the main goals of SEM. Structural model and measurement model are the two forms of SEM.

• **Structural model:** Completion of every model consists of a structural model which is a part of the structural equation model diagram. It is used to relate both latent and manifest variables you will need to account for in the model. The important rules for creating a structural model are to be followed.

• A **measurement model:** is also a part of the structural equation model diagram. It is essential for the model having latent variables. The part of the diagram which is analogous to factor analysis needs to include all individual variables, items, or observations that "load" onto the latent variable, their relationships, variances, and errors.

4.1.2. Development of survey instruments

Survey was conducted using a standard questionnaire and, Confirmatory Factor Analysis (CFA) was done for validating the questionnaire. The investigator is allowed by CFA to test the hypothesis that link between the observed variables and their underlying latent construct(s). Smart PLS and SPSS are the tools used to analyse the data collected from the survey. Smart PLS stands for the software application of Partial Least Squares Structural Equation Modeling. The application of smart PLS by the researcher is for analysing the data. Confirmatory model and exploratory model are the two different models in SEM. Systematic and computation model evaluation is made by structural equation model (Wong, 2013).

4.1.3. Questionnaire design

The questionnaire comprises of 37 questions along with the 6 demographic questions. Out of the 37 questions, 24 were related to OCB, and 13 questions were related to variables measuring TQM. The questions are scaled from 1 (Strongly Disagree) to 5 (Strongly Agree) as per the Likert scaling. The standard questions were obtained from past researches. The OCB questions were collected from Kagaari and Munene (2007), and TQM questions from Demirbag *et al.* (2006) and Noor (2009).

4.2. Validation of survey instrument

4.2.1. Content validity

For conducting the survey, the questions were extracted from research papers. The validation of the questionnaire was done by 2 experts, The Head-HR and the Forman GR.I. of the company. Few questions were excluded by the experts since the questions were irrelevant to the company profile. Validation of questionnaire was done using Confirmatory Factor Analysis.

4.2.2. Pilot study and discussions

The questionnaire was tested for its validity and reliability by conducting a pilot study prior to the large scale data collection. Survey was conducted amongst 21 staff of the company by delivering the questionnaire personally. The respondents were asked to mark their responses in the space provided in the printed questionnaire and later the responses were fed into an excel sheet. Smart PLS software was used to conduct the factory analysis. The pilot study validation is made by calculating the outer loadings, composite reliability, average variance extracted, latent variable correlations and R square value. The questionnaire was reduced from 37 to 21 questions by refining the questions based on the pilot study results.

Latent Variable	Indicator	Outer Loadings	Indicator Reliability	Composite Reliability	Convergent Validity
	ALT1	0.72	0.518		
Altruism	ALT2	0.862	0.743	0.845	0.647
	ALT3	0.825	0.681		
	CON2	0.622	0.387		
Conscientiousness	CON3	0.747	0.559	0.799	0.5
	CON8	0.685	0.469		
	CON10	0.764	0.583		
	CT1	0.754	0.568		
Courtesy	CT2	0.616	0.38	0.81	0.594
	CT3	0.913	0.833		
	CV1	0.726	0.527		
Civic virtue	CV2	0.859	0.738	0.772	0.536
	CV3	0.586	0.344		
	SP1	0.665	0.442		
Sportsmanship	SP2	0.889	0.791	0.806	0.585
	SP3	0.721	0.521		
	TQM1	0.459	0.21		
	TQM3	0.677	0.458		
TQM	TQM11	0.709	0.503	0.781	0.422
	TQM12	0.686	0.471		
	TQM13	0.684	0.468		

Table 3: Results for quality criteria

Note:

1. AVE – Average Variance Extracted;

2. Indicator Reliability - Square of Outer Loadings.

3. N=21 responses

The Indicator reliability was confirmed after iterations by eliminating questions with low factor loadings. Since values of the outer loadings were greater than 0.4 and Indicator reliability values is greater than 0.16 (Homburg & Giering, 1996) the validity of the refined questionnaire was established (Table 3). The composite reliability values were greater than 0.6 (Table 3), hence it confirms the Internal Composite Reliability (Wong, 2013). The values of Average Variance Extracted (AVE) must be greater than 0.5 to confirm the convergent validity (Wong, 2013). After the questionnaire refinement, the AVE was found to be higher than 0.4. Although this value is less than the requirement of 0.5, can be accepted because of the higher composite reliability which is greater than 0.6 (Fornell and Larcker, 1981). Hence convergent validity of the constructs was also confirmed.

Table 4:	The	discriminant	validity
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	Altruism	Conscientiousness	Courtesy	Civic virtue	Sportsmanship	TQM
Altruism	0.8049					
Conscientiousness	0.3594	0.7072				
Courtesy	0.1435	0.5628	0.7709			
Civic virtue	0.0989	0.1302	0.2423	0.7324		
Sportsmanship	0.0369	0.2465	0.3998	0.6369	0.7648	
TQM	0.4697	0.6496	0.4341	0.2858	0.2849	0.65

Note: N = 21 responses

From the table 4, the square root of Average Variance Extracted (shown in bold along the diagonal) values of each latent variable is greater than the correlations among the latent variables; hence it confirms the discriminant validity (Wong, 2013).

4.2.3. Language translation

The Survey was conducted in a public sector manufactures electrical machines which is situated in Kerala state, India. For the easy understanding of the questionnaire for all the local staff, the questions were translated to Malayalam language which was done by a language expert. This questionnaire was served during the primary data collection. The translated questionnaire was also verified by the Forman GR.I of the company. This was done in order to increase the comprehension of the questions by the respondents.

4.3. Data collection

Data collection involves collecting information needed to conduct the study. The questionnaires were formed from the related journal papers and validated using expert evaluation by two of the experts from the company. From the questionnaire validation, few questions which were not related to the company profile were excluded. Finally the questionnaire was formed with 37 questions for conducting the survey. The data collection was made by supplying the questionnaire in the printed sheets to the staff of the company in personal. Responses were collected from 21 staff for the purpose of the pilot study, which includes response from management level as the workshop working staff level. Primary Data was collected by conducting the survey from the remaining staff of the company.

5. RESULTS

Questionnaire was served to all the employees (180) and 140 complete responses were received for final survey. The results were analysed using structural equation modelling partial least square method. Smart PLS software was used to conduct the study.



Figure 2: Measurement model testing using smart PLS

Latent Variable	Indicator	Outer Loadings	Indicator Reliability	Composite Reliability	Convergent Validity
	ALT1	0.853	0.728		
Altruism	ALT2	0.788	0.627	0.803	0.581
	ALT3	0.627	0.393		
	CON1	0.861	0.741		
Conscientiousness	CON2	0.551	0.303	0.797	0.576
	CON3	0.826	0.682		
	CT1	0.592	0.351		
Courtesy	CT2	0.764	0.584	0.628	0.372
	CT3	0.427	0.182		
	CV1	0.504	0.254		
Civic virtue	CV2	0.759	0.576	0.629	0.369
	CV3	0.528	0.278		
	SP1	0.863	0.745		
Sportsmanship	SP2	0.442	0.195	0.647	0.400
	SP3	0.510	0.260		
	TQM1	0.494	0.244		
	TQM2	0.537	0.289		
TQM	TQM3	0.562	0.316	0.686	0.305
	TQM4	0.560	0.314		
	TQM5	0.601	0.361		

Table 5: Quality criteria results

Note:

1. AVE - Average Variance Extracted;

2. Indicator Reliability - Square of Outer Loadings.

3. N = 140 responses

The following results are depicted in the table 5: The Indicator reliability was confirmed, since the outer loading values are greater than 0.4 and indicator reliability is greater than 0.16, which is the square of outer loading (Homburg & Giering, 1996). The composite reliability values are greater than 0.6, hence it confirms the Internal Composite Reliability (Wong, 2013). The Cronbach's alpha values for each construct is greater than 0.6, which indicates an acceptable level of construct reliability (Juul *et al.*, 2012). Here the AVE is higher than 0.3 is accepted because of the higher composite reliability which is greater than 0.6. hence Convergent validity is confirmed (Fornell & Larcker, 1981).

Table 6: The discriminant validity

	Altruism	Conscientiousness	Courtesy	Civic virtue	Sportsmanship	TQM
Altruism	0.767					
Conscientiousness	0.628	0.758				
Courtesy	0.257	0.407	0.61			
Civic virtue	0.251	0.321	0.263	0.608		
Sportsmanship	0.138	0.216	0.004	0.228	0.633	
TQM	0.409	0.528	0.353	0.18	0.05	0.552

From the above table 6, the square root of Average Variance Extracted values of each latent variable is greater than the correlations between the latent variables, hence it confirms the discriminant validity (Wong, 2013).

5.1. Testing of hypothesis

Table 7: Pearson's correlation test

	Mean	SD	Correlation value	P-Value
OCB	3.81	0.28	0.485	< 0.001*
TQM	3.91	0.37		
NT / NT 1/0				

Note: N = 140

* P-value significant at 0.001 level

The following hypotheses are tested using Pearson correlation test (Table 7):

H ₁₀ : T	here is	no signi	ificant relation	ationship	between	OCB a	and T(QM.
H _{1a} : T	here is	a signif	icant relat	ionship b	between C	OCB ar	nd TQ	M.

Table 7 shows the results of Pearson's Correlation test between Organizational Citizenship Behaviour and Total Quality Management. The p-value value is less than 0.01. Hence null hypothesis is rejected at 1% level of significance. Therefore H_{1a} is accepted. Hence it can be concluded that there is a significant influence of OCB on TQM.



Figure 3: Testing of hypothesis in smart PLS

Table	8:	T-test	statistics
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Hypothesis		t-value	β- value	Remarks
H_2	OCB-Altruism \rightarrow TQM	1.496	0.128	Not Supported
H_3	OCB-Conscientiousness \rightarrow TQM	3.483	0.396	Supported
H_4	OCB-Civic virtue \rightarrow TQM	0.167	0.162	Not Supported
H_5	OCB-Sportsmanship \rightarrow TQM	0.552	-0.010	Not Supported
H_6	OCB-Courtesy \rightarrow TQM	2.02	0.050	Supported

 H_{2o} : There is no significant relationship between altruism dimension of OCB and TQM. H_{2a} : There is a significant relationship between altruism dimension of OCB and TQM.

In the path coefficient for the inner model, the Outer Loadings T-statistic is checked to explore the outer model. From table 8, for the relationship between Altruism and TQM, the T-Statistics (t = $1.496,\beta = 0.128, p > 0.05$) is 1.496 < 1.96. Hence hypothesis H₂₀ is accepted. Hence it is concluded that there is no significant influence of Altruism dimension of OCB on TQM.

 H_{3o} : There is no significant relationship between conscientiousness dimension of OCB and TQM. H_{3a} : There is a significant relationship between conscientiousness dimension of OCB and TQM. In the path coefficient for the inner model, the Outer Loadings T-statistic is checked to explore the outer model. From table 8, for the relationship between Conscientiousness and TQM, the T-Statistics (t = 3.483, β =0.396, *p* <0.01) is 3.483 > 1.96. The null hypothesis is rejected at 1% level of significance. Hence hypothesis H_{3a} is accepted. Hence it is concluded that there is a significant influence of Conscientiousness dimension of OCB on TQM.

 H_{4o} : There is no significant relationship between civic virtue dimension of OCB and TQM. H_{4a} : There is a significant relationship between civic virtue dimension of OCB and TQM.

In the path coefficient for the inner model, the Outer Loadings T-statistic is checked to explore the outer model. From table 8, for the relationship between Civic virtue and TQM, the T-Statistics (t = $0.167,\beta = -0.01, p > 0.05$) is 0.167 < 1.96. Hence hypothesis H₄₀ is accepted. Hence it is concluded that there is no significant influence of Civic virtue dimension of OCB and TQM.

 H_{50} : There is no significant relationship between sportsmanship dimension of OCB and TQM. H_{5a} : There is a significant relationship between sportsmanship dimension of OCB and TQM.

In the path coefficient for the inner model, the Outer Loadings T-statistic is checked to explore the outer model. From table 8, for the relationship between Sportsmanship and TQM, the T-Statistics (t = $0.552,\beta = 0.05, p > 0.05$) is 0.552 < 1.96. Hence hypothesis H₅₀ is accepted. Hence it is concluded that there is no significant influence of Sportsmanship dimension of OCB and TQM.

 H_{60} : There is no significant relationship between courtesy dimension of OCB and TQM. H_{6a} : There is a significant relationship between courtesy dimension of OCB and TQM.

In the path coefficient for the inner model, the Outer Loadings T-statistic is checked to explore the outer model. From table 8, for the relationship between Courtesy and TQM, the T-Statistics (t = 2.02, β =0.162, p < 0.05) is 2.02 > 1.96. The null hypothesis is rejected at 5% level of significance. Hence hypothesis H_{6a} is accepted. Hence it is concluded that there is a significant influence of Courtesy dimension of OCB and TQM.

6. DISCUSSION

Although during the past decades the research on OCBs has increased dramatically, still much remains unexplored about possible impact of OCB on TQM. Notably, little is known of the impact of OCB dimensions on TQM. The empirical study showed that OCB has a significant influence on Total Quality Management. This study also clearly shows the various dimensions of OCB that influences Total Quality Management. Analysis indicates that the dimension conscientiousness has significant influence on TQM. Conscientiousness is the attitude such as, spontaneous behaviour that goes beyond formal requests, following rules, regulations, procedures and standards, and generally involving characteristics like trustworthiness, organization, hardworking, and punctuality. Results indicate that courtesy play a vital role in improving the TQM. Collaborators who exhibit courtesy behaviours may reduce intergroup conflicts, thereby diminishing the time spent on incompatibility in management activities (Podsakoff *et al.*, 2000).

The current research has failed to establish a significant influence of altruism on TQM, significant influence of civic virtue on TQM and significant influence of sportsmanship on TQM. Hence, data collected from the employees of company did not support these three dimensions of OCB. So the influence of altruism, civic virtue and sportsmanship on TQM dispenses a fertile base for future research.

7. CONCLUSION

The impact of Organizational Citizenship Behaviour on Total Quality Management was conducted among the employees of a public sector electrical manufacturer. For this purpose a questionnaire was developed which consisted of 37 questions. This questionnaire was validated by two experts among the senior employees and a pilot study was conducted with 21 responses. After the pilot study 16 questions were eliminated. The final study was done by using 140 responses. The result obtained from the study showed that OCB has a significant influence of TOM. The study also showed that conscientiousness and courtesy dimensions of OCB has a significant influence on TQM. So the company must promote the various dimensions of Organizational Citizenship Behaviour to achieve more success in TOM implementation. This will lead to better quality and productivity and will help in achieving more profit. The result of the study showed that conscientiousness has a significant influence on TOM. This indicates that the conscientiousness behaviour of employees provides improvement in quality. The management should look into ways on how to promote this dimension of OCB amongst the employees for maximising the TQM practices. The study also showed that courtesy has a significant influence on TOM. This indicates that employees in the company have a mindset of preventing problems which is leading to the success of TQM. The result of the study showed that the OCB dimensions altruism, civic virtue and conscientiousness does not have a significant influence on TQM. However overall OCB had a significant influence on TQM, hence the sub-dimensions like altruism, civic virtue and conscientiousness cannot be ignored completely. In depth research across various companies can help in getting a more generalised view in this matter. The research outcome clearly underscores the impact of Organizational Citizenship Behaviour on TQM and outlines some key dimensions of OCB which drives this relationship.

8. LIMITATIONS AND FUTURE SCOPE

The study was limited to one unit of the public sector company, which can be further extended across different units. The responses were collected from 140 staff of the company. This research may not furnish us a complete understanding on the application of relationship between OCB and TQM. This study has hypothesized five OCB dimensions in our conceptual model and other relevant dimensions or construct may be included to study the multi-co-linearity effect in detail. Similar research can be conducted in other industries and results can be compared against this study to get a better understanding on the influence patters of OCB on TQM, across different industries.

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