

# THE MEDIATING EFFECT OF OUTPUT QUALITY ON THE RELATIONSHIP BETWEEN TOP MANAGEMENT SUPPORT AND CUSTOMER SATISFACTION ON THE IMPLEMENTATION OF CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM IN PUBLIC SECTOR

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## ABSTRACT

**Aim:** Many benefits could be gained when implementing customer relationship management such as leading to increase customer satisfaction, customer loyalty and organization benefits. In addition, it helps the employees to organize their own activities, contacts and documents and provides reports and information for the organization that gives the opportunity and potential for the organization the edge on its competition to focus and see new products and markets.

**Purpose:** The main purpose of this paper was to develop an understanding of the mediating effect of output quality on the relationship between top management support and customer satisfaction on implementation of customer relationship management.

**Methodology/Approach:** The data collection of this study is a survey questionnaire, which is distributed to the employees who is working in organization implemented CRM system in public sector. The questionnaire that is used for the analysis is 356 cases. The data collected is tested and analyzed by using the SPSS and Partial Least Squares (PLS).

**Findings:** The finding showed that the output quality is the important determinants of customer satisfaction of implementation of CRM system, and it mediates the relation between the independent variable (top management support) and the dependent variable (customer satisfaction of implementation of CRM system).

**Keywords:** Output Quality, Top Management Support, Customer Satisfaction, Customer Relationship Management, Public Sector.

## INTRODUCTION

A century ago, there was no mall and there were no supermarkets in the towns. The people in town went to the nearest shop to buy goods to satisfy their needs and requirements. On the other hand, the shop owner knew every customer's name and needs because of a face-to-face relationship. This made the customers more loyal and made them repeat purchases. Over time, this good relationship started to disappear as the nation, the towns grew, and the people moved from farms and small towns to big towns. The customers became mobile and the supermarkets appeared to face this massive demand. As a result, the relationship between "customer and the merchant became nameless and faceless" (Gray & Byun, 2001) until this relationship

disappeared and the customers went to merchants who had lower prices or a large range of goods.

In 1990, evolution came out in USA in corporate thinking in business and Customer Relationship Management (CRM) was apart from this evolution (Baran et al., 2013). CRM began by changing the concept of customers from transactional to relational (Heczko & Stoklasa, 2014). CRM became an important approach for the business. The main idea of CRM is trying to deal with customers as individuals rather than as groups (Gray & Byun, 2001). This gave the customers more power and tried to make the customers more satisfied and happier which results in their being loyal.

The study conducted by Bendik (2003) mentioned three main benefits that the CRM system can provide. First, it allows the employees who work in CRM system to manage their own activities, contacts and documents. Second, the CRM system gives the organization reports and information for each specific customer or product at any time. This could help the decision maker to the correct decision fast. Finally, from the information that stored in system and from the analysis reports, the CRM system gives the opportunity and potential for the organization the edge on its competition to focus and see new products and markets.

Oman as a development country invested a huge amount of budget and money, about 115 million US dollars to invest in Customer Relation Management (CRM) to provide better government services to Omani people. However, the implementation process in the government sector is not as planned and expected by the Information Technology Authority. This could cause Oman to lose the millions of dollars spent on investing in CRM; money that cannot be replaced in a time of limited financial resources. There is therefore a gap between what was supposed to happen and what actually happened in Oman regarding the implementation of CRM system in the public sector. As a result, it is necessary to investigate CRM implementation the critical factors that may affect the success or the failure of the CRM implementation in order to prevent further failure and the loss of the money that was invested. Therefore, this paper will focus in the effect of top management support and the mediating role of output quality on customer satisfaction of CRM implementation.

### **Customer Satisfaction of CRM Implementation**

According to Gundersen et al. (1996), customer satisfaction can be defined as an evaluative customer judgment after purchase or consuming a particular product or service.

Verma & Chaundhuri (2009) mention that implementing of CRM does not always lead to customer satisfaction and there are a lot of organizations which have invested huge budgets in implementing CRM and which fail to achieve customer satisfaction for many reasons, such as the big gap between the organization understanding of the customers' expectations and the real expectations of customers. In addition, Verma & Chaundhuri (2009) emphasize the importance of the planning implementation stages to achieve successful implementation of CRM by providing customer satisfaction. According to Butler (2000) (as cited in Hong-kit Yim et al., 2004) enhancing customer satisfaction is one of the major outcomes from implementing the CRM system in any organization, besides the other outcomes like customer retention and long-term profit.

## **Output Quality**

Output quality can be defined as meeting the customers' expectations (Duncan, 1996). Any organization should take care not to miss two factors required for the desired quality of output. First, it is to provide the service or the product, which is planned to produce. Second, the service and the product must truly satisfy the needs of the customers.

One of the most goals from implementation of customer relationship management is to providing quality products and services that meet the expectations and demands of consumers (Haverila & Naumann, 2011). There is a strong relationship between output quality and customer satisfaction. When the output quality is high, customer satisfaction will increase and this will lead to more retention and revenue growth (Lai et al., 2016).

## **Top Management Support**

Top management support is defined as the top-level management involved in the practice of project implementation. There is a positive relationship between the practices involved from in top management in project implementation and the success of the project, where by the more top management is involved in the project, the more chances of success in the project (Zwikael, 2008).

Top management support plays a major role in implementing any project in the organization, such as a CRM system. There are many issues that can arise in CRM implementation. One of the most obvious issues is the leadership. The main difference between businesses that achieve a profit and businesses that do not is relationships (Galla, 1999). When implementing a project like a CRM system, the organization needs to change the business process and introduce new technology. The leader has the ability to monitor the external environment, which is the best place to have a good strategy and vision. In addition, a good leader can control expenses and the budget. In addition, he is responsible for monitoring and evaluating performance (Bull, 2003). Another difficulty for implementing CRM system successfully is assigning clear ownership for the implementation strategy in the organization. Most of organizations that implemented a CRM system have no clear owner (Davis, 2000).

## **HYPOTHESES DEVELOPMENT**

According to Galla (1999), one of the keys for successful implementation is creating a team that includes the top-level management and employees from all departments. This will help to develop insight into any difficulties and see if the existing business process in the organization fits the CRM system. In addition, this gives employees a sense of ownership. The CRM implementation needs support from both managerial and employee levels (Becker et al., 2010). Bracknell (2000) mentions that to have a loyal customer who has been satisfied, everyone in the organization should be involved in the CRM system implementation. This will avoid a lot of problems and issues that might come out in later stages, such as resistance of new system.

Erjavec et al. (2016) conclude in their study about the drivers of customer satisfaction and loyalty in the service industries, that service output quality affects customer satisfaction and acts as mediator. Besides that, Hsu et al. (2017) confirm the significant relationship and the importance of output quality and customer satisfaction. This indicates that several studies have suggested a strong relationship between output quality and customer satisfaction. In addition, Hsu et al. (2017) concluded in their study, the significant relationship between top management

support and involvement for a successful system of quality and service in the organization. Therefore, in view of the above findings, the hypothesis can be proposed as follows:

*H<sub>1</sub>: Output Quality mediates the relationship between Top Management Support and Customer Satisfaction on implementation of CRM.*

## METHODOLOGY

### Data Collection, Research Items and Analysis Tool

Quantitative research that is used in this study refers to research which presents more about the reality of the situation than it takes into consideration what people believe (Pizam, 2010). The main purpose from quantitative research is to collect the data from a sample of the population, analyses the results and reach a conclusion from the findings (Sullivan, 2009).

The data collection of this study is a survey questionnaire. The reason for choosing the survey questionnaire method was that it provides high predictive value for assessing the efficiency of the individuals in societies, especially when the target subject under study is related to individual's perception, belief and opinion. Data on individual cognitive perceptions, in this study, like the belief and intention of the employees in the public sector were tested via a research survey (Alhaderi & Ahmed, 2015).

The targeted respondents (unit of analysis) are the individual employee who is working in public sector organizations, which implemented CRM system in Muscat (Capital city of Oman) where these organizations implemented the CRM system. Besides that, the reason for choosing these targeted people was that they have more knowledge about the implementation process and usage of the Customer Relation Management (CRM) difficulties and issues in the Omani public sector. In addition, the choice of employees who are working in public sector organizations was because the study is seeking consensus with previous studies, which were conducted in the same area as shown in Table 1.

	<b>Model Name</b>	<b>Concept</b>	<b>Sampling</b>	<b>Resource</b>
1	Integrated model of CRM implementation	Model for the implementation of CRM system in service companies " <i>conceptually integrated five-phase model</i> "	The employees and managers who are working in Taiwanese service companies	(Cheng & Yang, 2012)
2	Model of Critical success factors for Public sector CRM implementation	Use theory of planned behavior in implementation of CRM system in public sector	The employees (consultants) who are working in Public sector (SBDC) in USA	(Lawson et al., 2011)
3	Model of Organizational Capabilities for Successful CRM	Explains the roles of organizational learning, business process orientation, customer-centric orientation, and task-technology fit in CRM implementation	The employees in organizations which use CRM solutions	(Raman et al., 2006)

Probability sampling will be used in this study because the population of this study was known. The numbers of employees who are working in the public sector organization that implemented CRM system in Oman is 11,993 (population size). This study used sample random sampling techniques for distributing the survey questionnaire.

The Table 2 illustrates the items and the resources of the adaption of the items used in this study for (Customer Satisfaction, Output Quality and Top Management Support). Also, the scales were used in this study for all items were Likert five point scales such as “5=Strongly Agree”, “4=Agree”, “3=somewhat agree”, “2=Disagree” and “1=Strongly Disagree”: The items were used as follows:

	<b>Variable</b>	<b>Items</b>	<b>Adapted from</b>	<b>Number of items</b>
1	<b>Customer Satisfaction</b>	<ul style="list-style-type: none"> <li>• Overall, I am satisfied with government services experience.</li> <li>• I will be happy to have the government services again.</li> <li>• I would recommend the government service to others.</li> <li>• Considering the type of government unit, the quality of service was excellent.</li> </ul>	SaadAndaleeb & Conway (2006)	4
2	<b>Output Quality</b>	<ul style="list-style-type: none"> <li>• When implementing CRM system, my organization should have up-to-date equipment.</li> <li>• My organization employees are well dressed and appear neat.</li> <li>• The appearance of the physical facilities of my organization is in keeping with the type of services provided.</li> <li>• When I have a problem, my organization is sympathetic and reassuring.               <ul style="list-style-type: none"> <li>• My organization is dependable.</li> </ul> </li> <li>• When implementing CRM system, my organization provides the service at the time it promises to do so.               <ul style="list-style-type: none"> <li>• My organization keeps its records accurately.</li> <li>• Employees of my organization tell customers exactly when service will be performed.</li> <li>• Employees of my organization give prompt service to customers.</li> </ul> </li> <li>• Employees of my organization are always willing to help customers.</li> <li>• Employees of my organization are never too busy to respond to customer requests promptly.</li> </ul>	Yamaqupta (2014)	11
3	<b>Top Management Support</b>	<ul style="list-style-type: none"> <li>• When implementing CRM system, top level management involvement is strong.</li> <li>• Top management is interested in CRM implementation.               <ul style="list-style-type: none"> <li>• Top management understand the</li> </ul> </li> </ul>	Nathan et al.,	

	<p>importance of CRM.</p> <ul style="list-style-type: none"> <li>• Top management support the CRM implementation.</li> <li>• Top management consider CRM as a strategic resource.</li> <li>• Top management understand CRM opportunities.</li> <li>• Top management keep the pressure on operating units to work with CRM.</li> </ul>	(2004)	7
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In this study, the analysis was done by using SPSS and PLS Structural Equation Models (SEM) to analyses the interaction of the variables. SPSS is used in the verifying the Data reliability and validity, after that when the data was ready to be analyzed, the PLS was used to test the hypothesis. The primary statistical technique that will be used in this study is multivariate analysis to test the research hypotheses. The choice for Structural Equation Models (SEM) was due to there being an increase of using Structural Equation Models (SEM) in behavioral and social science research and it counts as the most obvious analytical strategy to have been developed so far (Tarka, 2017).

### RESULTS

For reliability of the survey questionnaires, SPSS was used. Cronbach Alpha was employed. That will measure the internal consistency and will estimate the reliability of the sample. In order to achieve validity of the instruments, factor analysis was conducted. The validity was measured to be sure that the items measured what they were supposed to measure. In addition, the reliability was measured to ensure the consistency of measurements across time and across the various items in the instrument.

#### Validity (Factor Analysis)

SPSS was used to test the validity of the items. The validity summary in Table 3, illustrates the factor loading for every item in each variable. In addition, the table shows the items that were deleted, and the deletion was because the items were loading in variables other than the target variable.

<b>Variables</b>	<b>Items</b>	<b>Items were deleted</b>	<b>Valid items Factor loadings</b>	<b>Reliability</b>
<b>Customer satisfaction</b>	1. Overall, I am satisfied with government services experience.	0	0.820	0.890
	2. I will be happy to have the government services again.		0.917	
	3. You would recommend the government service to others.		0.927	
	4. Considering the type of government unit, the quality of service was excellent.		0.817	
	2. My organization employees are well dressed and appear neat.		0.521	

<b>Output Quality</b>	5. My organization is dependable.	Items (1, 3, 4 and 7) were eliminated and that was because the items were loading in another variable.	0.529	0.858
	6. When implementing CRM system, my organizations provide the service at the time it promises to do so.		0.729	
	8. Employees of my organization tell customers exactly when service will be performed.		0.795	
	9. Employees of my organization give prompt service to customers.		0.820	
	10. Employees of my organization are always willing to help customers.		0.867	
	12. Employees of my organization are never too busy to respond to customer requests promptly.		0.819	
<b>Top Management Support</b>	1. When implementing CRM system, top level management involvement is strong	0	0.738	.928
	2. Top management is interested in CRM implementation		0.913	
	3. Top management understand the importance of CRM		0.847	
	4. Top management support the CRM implementation		0.918	
	5. Top management consider CRM as a strategic resource		0.862	
	6. Top management understand CRM opportunities		0.850	
	7. Top management keep the pressure on operating units to work with CRM		0.735	

**Reliability**

Based on the reliability summary, Table 4, reliability of the instruments was achieved. Cronbach Alpha values for whole variable were ranked between (0.858-0.928), and that means that the instruments used in this study were reliable. Also, Nunnally (1978) has indicated that when the reliability Cronbach’s alpha is above (0.70) it is considered an acceptable reliability coefficient. This means that the set of questions returns a stable response and the variable is reliable.

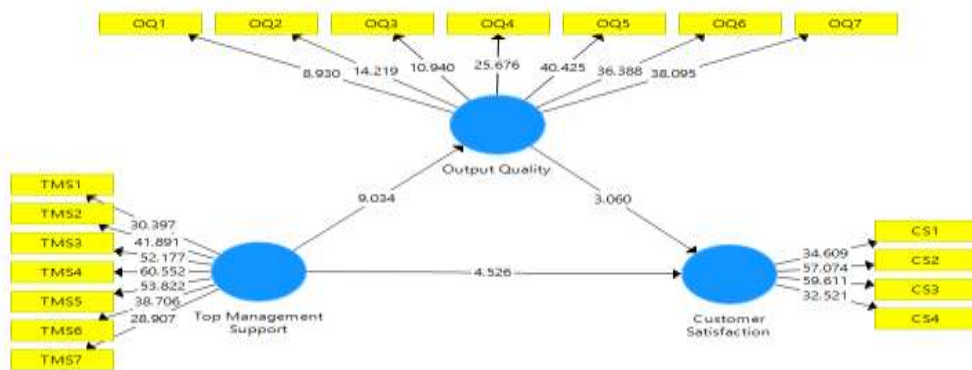
	<b>FACTOR</b>	<b>ITEMS</b>	<b>RELIABILITY</b>
1	Customer Satisfaction	4	0.890
2	Output Quality	7	0.858
3	Top Management Support	7	0.928

### Descriptive Statistics

The survey instrument was administered in Public organizations in Oman, which implemented CRM system. A total 407 questionnaires were returned from the respondents, which 51 cases deleted that were due to missing value and outliers. Therefore, the data were ready for the analysis is 356 cases. In the PLS technique, it is required to have a minimum of only 30 responses (Chin, 1998). Which in this study has a 356 response, which are more than 30 responses? In terms of gender, 49.2% of the respondents were male while 50.8% were female. With respect to education, 7.9% of the respondents were holding high schools' certificate, 19.4% of the respondents were holding college certificate, while the majority (57.9%) of the respondents were holding bachelor certificate, 14% of the respondents were holding master certificate and only 0.8% of the respondents were holding PhD certificate. In terms of Experience, 30.9% have less than 5 years' work experience, 36% have between 5 years to 10 years work experience, 16.3% have between 11 years to 15 years work experience and 16.9% have 16 years and more work experience.

### Result of mediating effect of Output Quality on the relationship between Top Management Support and Customer Satisfaction

The hypothesis  $H_1$  was tested using SmartPLS 3.0 by applying PLS-SEM algorithm and bootstrapping procedure with 500 subsample iterations as recommended by Hair et al. (2016) as shown in Figure 1.



**FIGURE 1**  
**TESTING METHODOLOGY**

In assessing the mediating effect (indirect effect), testing methodology as proposed and recommended by Hair et al. (2016) was referred to quantify the indirect effects between predictor variable (top management support) and dependent variable (customer satisfaction).

In the first step, the indirect effect is measured through the mediator. If the indirect effect is not significant, there is no mediation. If the indirect path is significant, the direct effect will be test. If the direct effect is significant, we can conclude that there is a partial mediation role (complementary or competitive). If the direct effect is not significant, we can conclude that there is a full mediation.



The hypotheses  $H_1$  propose that output quality has mediation effect between top management support and customer satisfaction.

Firstly, indirect affect path of top management support to customer satisfaction through output quality was measured and result shows path coefficient is 0.099, yielding a significant at level P value=0.005 as shown in Table 5. So, the next step is to test the direct effect, so the direct effect of top management support to customer satisfaction results shows path coefficient is 0.280 with a significant at level P value=0.000 as shown in Table 6. Thus, it verified that output quality has a partial mediation role between top management support and customer satisfaction since both of the indirect and direct effect are significant and it prove the hypothesis  $H_1$  was accepted.

<b>1</b>	<b>Top Management Support → Output Quality → Customer Satisfaction</b>	<b>Indirect Effect</b>	<b>Standard Deviation</b>	<b>T Value</b>	<b>P Value</b>
		0.099	0.035	2.839	0.005

<b>1</b>	<b>Top Management Support → Customer Satisfaction</b>	<b>Direct Effect</b>	<b>Standard Deviation</b>	<b>T Value</b>	<b>P Value</b>
		0.280	0.062	4.526	0.000

To further analysis of the type of partial mediation, the product of the indirect effect and the direct effect was calculated to identify the type of partial mediation. Since the indirect and direct effects are both positive, the sign of their product is also positive ( $0.099 \times 0.280 = 0.028$ ). Therefore, we conclude that output quality represents complementary mediation of the relationship from top management support to customer satisfaction.

## **DISCUSSION**

The overall purpose of this study was to develop an understanding of the mediating effect of output quality on the relationship between top management support and customer satisfaction on implementation of CRM system in the Public sector. The finding showed that the Hypothesis  $H_1$  is accepted. Consistent with the findings of previous studies (Lai et al., 2016; Erjavec et al., 2016; Hsu et al., 2017), output quality is the important determinants of customer satisfaction of implementation of CRM system, and it mediate the relation between the independent variable (top management support) and the dependent variable (customer satisfaction of implementation of CRM system). This is because top management understands the importance of CRM and understands the CRM opportunities. Besides that, top management supports the CRM implementation and considers CRM as a strategic resource.

## **CONCLUSION**

This paper helps the management of the organizations, which want to understand the effect of top management support in the implementation of CRM and direct them to the important of output quality as mediation in the relationship between top management support and customer satisfaction on CRM implementation. In addition, the study can be utilized by public sector organizations as significant role of top management support and output quality and how those two factors related to each other on customer satisfaction of CRM implementation.

The findings suggest that customer satisfaction on the implementation of CRM system can be improved by focusing on the output quality. Output quality could be enhanced by focusing on role of top management support. So this study emphasis the important drive of top management support on the successful of implementation of CRM system in the Public sector.

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