QUALITY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE: MODERATING ROLE OF LEADERSHIP

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ABSTRACT: *This paper is intended to explore the synergic impact of leadership in cultivating the organizational performance outcomes of quality management practices. The main purpose of this research study is to investigate the impact of quality management practices on organizational performance through moderating role of leadership in pharmaceutical industry of Pakistan. A survey was conducted using a structured questionnaire to collect data. The population of study was comprised of pharmaceutical firms located in Lahore, Punjab those were listed on the Pakistan Pharmaceutical Manufacturers Association. The results show that implementation of quality management practices plays an important role among pharmaceutical firms' performance. Direct multiple regression model of organizational performance identified three quality management practices, customer focus, continuous improvement, and benchmarking, as significant predictors of organizational performance. Further, a moderation analysis between three significant predictors and an organizational performance revealed that leadership has strong and significant moderating role. It is inferred that the success of quality management programs is actually stimulated with enthusiastic involvement of leadership.*

Keywords: Quality management practices; leadership; moderation; pharmaceutical industry of Pakistan; organizational performance.

INTRODUCTION

Quality management has been rated as an essential ingredient of the overall organizational performance from the era following the mass production. This organizational progress has always a planned objective to rise in extremely uncertain business surroundings described by fast technological progress, and global competition. Thus, the organization must be proactive in its technological competence, mass customization and responsive manufacturing. The culture of organizations must be customer driven and be capable to present the right product in the right place at the right time and at the reasonable price [1-2]. Quality management has come into view with assuring organizational performance effects around the business world.

Practices are the noticeable aspect of QM, what comprises QM should be made of practices: and it is through them that managers work to recognize organizational improvements. Several research studies have examined the relationship between QM practices and performance using different quality management constructs.

Leadership has remained a major area of interest in both academia and industry. It is in the hands of top management to decide the future of an organization's success in terms of business competitiveness. Top management has a complex leadership role while implementing TQM. The effectiveness of Quality management program could be more valuable in delivering performance results in an amiable, encouraging, and approving work setting, and merely top management can develop the quality management efforts by giving helpful and practical leadership. The significance of leadership has been universally accepted to quality management [3-5]. The well-known quality gurus have explained that top management leadership is considered as most influential TQM element that can affect other element of organization. The organizations that are having top management leadership reflection to quality are influential for changing organizational culture in order to execute TQM practices[6].

Pakistan is among those developing countries which have issues of incorporation of local culture, norms, and values in their businesses or organizations and it result in a great barrier to the success of quality culture system. [7]. In Pakistan the industrial and business sectors worked with little understanding about the importance of quality, to become the leaders in this fast growing global village, Pakistan needs to pay full attention to improve quality in both industrial as well as in the service sector [8]. Based on the above discussion a problem has been identified in pharmaceutical industry of Pakistan; in which ways, leadership can inspire the effectiveness of quality management practices in delivering the desired performance outcomes and to what extent the relationship between quality management practices and the performance outcomes are moderated by role of leadership in pharmaceutical industry of Pakistan".

LITERATURE REVIEW

TQM is a management approach that has become well-liked since the early 1980's when it became a commanding method of competitiveness. Total quality management is linked with the organization itself and is believed as incorporation between the technical, social and human systems in any organization [9]. Therefore, all departments have to combine together to get better the organization's efficiency, competitiveness, and structure by implementation of quality management programs.

Numerous studies have been conducted to find out the impact of quality management practices on organizational performance. An experimental research study was carried out, in petroleum industry to estimate the efficiency of quality management practices by integrating the 13 quality management constructs projected, by[10]. Seven quality management constructs from Malcolm Baldrige Award and more quality management constructs were established and integrated after proving their reliability and validity [11]. Based on previous literature, the following nine main practices of TQM have chosen for this study. All practices are selected due to their effectiveness and significance to the

manufacturing organization. Furthermore these nine practices are among 25 TQM practices which are most common and extracted from 76 research studies on TQM [12].

The element of leadership from TQM is considered as a major driver which examines senior executives' leadership and their contribution in preserving high organizational performance [13]. The organizations that are having top management leadership reflection to quality are influential for changing organizational culture in order to execute TQM practices [14].

It is a supported fact that role of top management is a driver at initial stage for the implementation of quality management programs in any organization. Top management involvement is more critical practice for improved organizational performance[15].

Similarly, top management commitment, customer focus, employee empowerment, Continuous improvement and employee involvement are important practices of TQM that can establish the success of TQM agenda in the manufacturing environment[16]. The customer focus is a vital feature of the industrial process and this requires the customer's input at all phases of manufacturing [17]. Organizations must be well informed in customer desires and should be proactive to customer demands, and measure customer satisfaction through TQM implementation. The relationship of TQM and organizational performance using structured equation modeling [18]. There is a need to authorize employees when they experience a sense of powerlessness [19]. Empowering employees facilitates organizations to be more flexible and approachable and can direct to enhancement in both personnel and organizational performance [20-21]. Correspondingly, Continuous improvement is a constant activity intended to raise the level of organizational performance through focused changes in processes[22]. A survey was conducted to measure the effect of best practices on the operational performance of Tunisian companies by dividing these practices into three categories core practices, management, and infrastructure and found positive results of these practices on operational performance [23].

Another important aspect of Quality management practices is team work approach. Teams are basically groups of people who are doing work together for collective purposes in order to achieve their goals and objectives[24]. Earlier studies supported that taking on transactional and transformational leadership styles is valuable. A review of the literature suggests that the adoption of leadership as a means to enhance teamwork has been supported. Leadership is an extremely prominent factor in teamwork. As it is revealed by the review of literature, that leader's behaviors may be positively correlated to teamwork in terms of team communication, collaboration, and cohesiveness[25-26]. Likewise, Process orientation is considered a core organizational competence to combat with higher degree of market competition. Process orientation is frequently seen as a way of getting closer to customers while at the same time organizing and improving the organization itself and its competitiveness[27]. In the same way, Employee training is a key to success for the organizations and now a day it is getting more attention and become an important factor in organizational management and quality system. Any organization can speed up their performance and improve workflow system by educating employees and by giving them training[28].The importance of Benchmarking can be determined in a way that it help the organizations to adopt those policies, practice and method which can lead the organization to get the high performance levels which are used by other business in the same industry, finest execution of benchmarking to organization thus lead to success of total quality management of that organization [29].

The pharmaceutical companies are facing quality related challenges due to the rapidly changing environment and awareness among the nations about the importance of pharmaceutical companies[30]. TQM methods and tools can be used to implement TQM successfully in pharmaceutical logistics and TQM implementation in pharmaceutical logistics business has increased sales and reduced employee turnover [31]. In the economy of Pakistan, pharmaceutical industry plays an important role in building the Pakistan economy. It is fulfilling 70 % demand of medicines in Pakistan. Pharmaceutical industry is providing over 70,000 direct employments and 150,000 indirect employments in the Pakistan. It is also becoming an international pharmaceutical industry with the passage of time, in 2007 Pakistan pharmaceutical industry export over 100 million $ and it is increasing day by day. It reached 500 million $ in 2013. Pharmaceutical industry of Pakistan has not only become a pillar of Pakistan economy, but also promoted development in the field of drugs and medicines; it is also well established to take on the international market of pharmaceutical. The review of literature shows that the successful implementation of total quality management requires top management support, role and involvement in QM program execution. So to see the effects of quality management practice and its influence on Pakistan pharmaceutical industry, leadership is being taken as moderator. Based on the review of previous literature two research questions are derived. Through this study, we would be able to answer the following questions

1) Do quality management practices have positive impact on organizational performance of pharmaceutical industry of Pakistan?

2) Does leadership moderate the relationship between QM practices and performance in pharmaceutical industry?

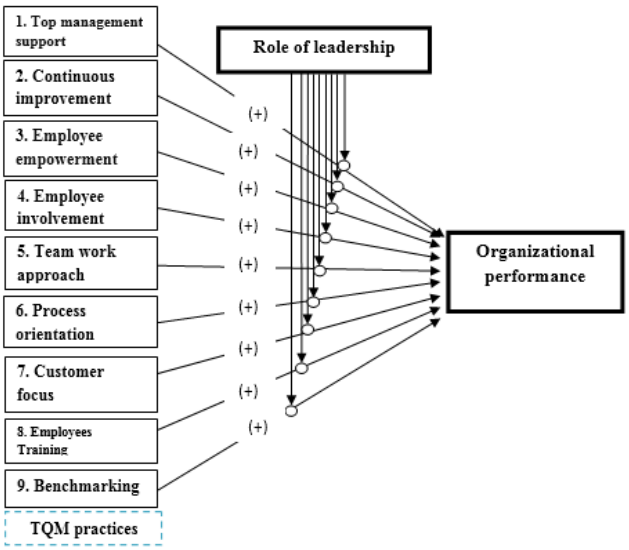
3) METHODOLOGY

The target population for this research is pharmaceutical firms of Pakistan which are members of Pakistan pharmaceutical manufacturing association (PPMA) across the Pakistan. Simple random sampling technique has been used in this research study for the sample selection. The reason to select this sampling method is that each unit is selected for sampling with the same probability. There are 400 pharmaceutical firms that are registered in Pakistan pharmaceutical manufacturers association (PPMA). Four hundred and fifty (450) questionnaires were distributed along Lahore and nearby region, in 180 pharmaceutical units. On average 5-7 questionnaire were distributed in each organization. And 202 respondents from 58 organizations responded to the questionnaire. The response rate is 32.22 % (58/180*100). Statistical analysis was run on the average

scores of the responses of each industrial unit, with total industrial sample size fifty eight.

3.1 INSTRUMENT DEVELOPMENT

For this research the instrument constructed, consisted of three main components, which were developed after extensive literature review. The first part of instrument consists of thirty-one items related to quality management practices and second part consists of six items related to leadership as a moderator similarly third part consist of six quality performance measures for pharmaceutical industry. The scale was adopted from [32]Implementation of quality management techniques to improve the quality of yarn[33-35]. In the instrument a five point Likert scale reflecting a range of attitude from "strongly disagree" to the "strongly agree". The coding of the Likert scale was made as [1] = strongly disagree, [2] = disagree], [3] = neutral, [4] = agree, [5] = strongly agree. In the social science studies Likert scales has been used frequently with the interval scale considering at least five and if possible seven response categories.



Conceptual Framework

Figure.2

Figure 1 shows the conceptual framework of this research study. Based on the previous research studies it is proposed that all quality management practices have positive impact on organizational performance of pharmaceutical industry.

4.0 DATA ANALYSIS

Demographic analysis was applied to describe the profile of respondents. It is seen that most of the respondents were male (59.9%). 35.1% of respondents belongs to age group of 30-39. 73.3% of them were graduate. And 22.8% of respondents were production manager in pharmaceutical firms. Multiple linear regression models were solidified to observe the relationship between independent variables (i.e. TOPM, EMP, INV, PRO, ETRN, CFOC, CONT, BNCH and TMW) and dependent variable (i.e. organizational performance, (ORGP)). Similarly to assess the moderation effect of leadership on these QM practices multiple linear regression analysis was applied. Moreover six (TOPM, EMP, INV, PRO, ETRN and TMW) of nine variable were dropped in the model due to their insignificant relationship with organizational performance.

4.1 MULTIPLE REGRESSION MODELS

Regression analysis (stepwise) is used to find out the collective effect of independent variables (quality management practices) on dependent variables (organizational performance).Abbreviations are added for each variable for the convenience of work that are top management (TOPM), employee empowerment (EMP), employee involvement (INV), process orientation (PRO), employee training (ETRN), and teamwork approach (TMW), customer focus (CFOC), continuous improvement (CONT), benchmarking (BNCH). Proposed model for organizational performance

$ORGP = \beta_0 + \beta_1 TOPM + \beta_2 EMP + \beta_3 INV + \beta_4 TMW + \beta_5 PRO + \beta_6 CONT_+ \beta_7 CFOC + \beta_8 ETRAN + \beta_9 BNCH + \varepsilon$

COEFFICIENT OF REGRESSION

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
ORGP	(Constant)	.924	.375		2.459	.017
	CFOC	.507	.076	.626	6.678	.000
	CONT	.224	.066	.277	4.212	.081*
	BNCH	.275	.098	.264	2.817	.007

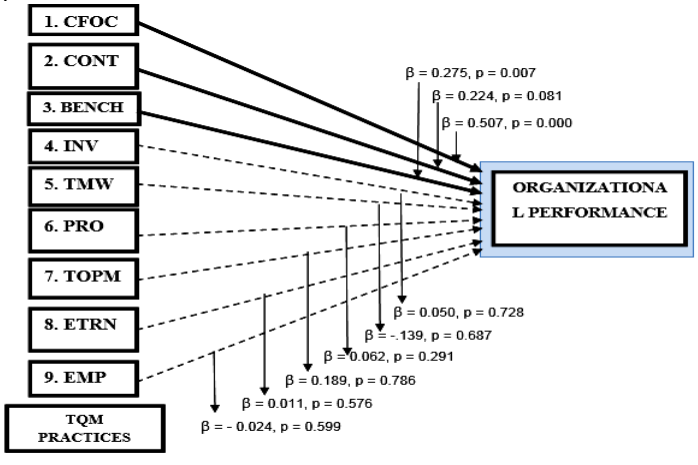
Dependent variable = ORGP

*Continuous improvement is significant at 0.10 % level of significance.

Following model is derived on the basis of regression results

ORGP = 0.924 + .507 CFOC + .224CONT+ .275BNCH

This model explains the relationship between QM practices and organizational performance. A significant relationship is found between organizational performance and quality management constructs that include customer focus (CFOC), continuous improvement (CONT), and benchmarking (BNCH). Continuous improvement (CONT) is significant at p = 0.081. In description of regression model for organizational performance, these three constructs of quality management are participating with positive coefficients. The results showing that the participation of any of these three construct in pharmaceutical firms enhance the organizational performance.



Model with regression results of significant and insignificant variables

Figure. 2

In figure 2 the regression results of significant as well as insignificant variables are displayed. Six constructs are excluded (TOPM), (EMP), (INV), (PRO), (ETRN), and (TMW) from model due to low and negative coefficients according to regression results. This analysis provides the answer for first question that Do quality management practices have positive impact on organizational performance of pharmaceutical industry of Pakistan? According to this model three QM practices customer focus (CFOC), continuous improvement (CONT), and benchmarking (BNCH) are having positive impact on organizational performance of pharmaceutical industry of Pakistan. It shows that quality practices are highly important for organizational performance measures in pharmaceutical industry. Further it is also found that implementation of quality management practices by pharmaceutical industry can cause to increase the market share, customer satisfaction, reduction in rejection rate by improving the manufacturing processes and quality of medicine. So it demonstrates that these constructs have significant and influential role upon organizational performance in context of pharmaceutical industry of Pakistan.

4.2 MODERATION ANALYSIS

As the definition of moderator indicates, if a moderator is added into a model between independent and dependent variables it would influence the effect of this relationship. Likewise in this research study QM practices are taken as independent variables which include nine constructs. And organizational performance is taken as dependent variable. Similarly leadership is used as a moderator to see the impact of moderating variable that how it influence the QM constructs to enhance the organizational performance. As six of the variables are excluded that are (TOPM), (EMP), (INV), (ETRN), (TMW), (PRO) because of the insignificant relationship with organizational performance. Moderation analysis has been done with three significant variables that are continuous improvement, customer focus, and benchmarking. This analysis provides the answer for second question; does leadership moderate the relationship between QM practices and performance in pharmaceutical industry?

4.2.1 MODERATION ANALYSIS WITH BENCHMARKING

Benchmarking is one of the significant variables among three. The following table shows the coefficient values. Proposed model for this analysis is

$$ORGP = \beta_0 + \beta_1 BNCH + \beta_2 LRD + \beta_3 (BNCH*LRD) + \varepsilon$$

COEFFICIENTS OF REGRESSION RESULTS OF MODERATION

Model		Un-standardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
ORGP WITH LEADERSHIP	(Constant)	-11.353	3.997		-2.841	.006
	LRD	3.547	1.034	2.463	3.431	.001
	BNCH	3.655	1.122	3.505	3.258	.002
	INT3	-.840	.289	-4.163	-2.907	.005

a. Dependent Variable: ORGP

Following model is derived on the basis of regression results

ORGP= 3.655BNCH + 3.547 LRD + (-.840) (LRD*BNCH)

The p-value of the model shows that it is well fit. Partial moderation is found between organizational performance and constructs of quality management practice; benchmarking. The results of moderation analysis for this model show that partial moderation exists. That means that leadership partially moderates the relationship between benchmarking and organizational performance. Leadership is important factor in pharmaceutical industry that could enhance the impact of benchmarking on the performance of pharmaceutical industry. The pharmaceutical firms can show a big difference in their performance by incorporating leadership construct to control and execute the benchmarking practices. This will definitely create a huge difference in the performance of the firms which are focusing leadership as compare to those which are not focusing.

4.2.2 MODERATION ANALYSIS WITH CUSTOMER FOCUS

Customer focus is the second variable among three. Proposed model for this analysis is

$$ORGP= \beta_0 + \beta_1 CFOC + \beta_2 LRD + \beta_3 (LRD*CFOC) + \varepsilon$$

COEFFICIENTS

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-7.763	3.094		-2.509	.015
LRD	2.563	.818	1.780	3.134	.003
CFOC	2.777	.845	3.425	3.286	.002
INT2	-.598	.222	-3.650	-2.697	.009

Following model is derived on the basis of regression results

ORGP= 2.777 CFOC + 2.563 LRD + (-.598) (LRD*CFOC)

P-value of this model shows that it is well fit. Partial moderation is found between organizational performance and construct of quality management practices; customer focus (CFOC). The model shows that relationship exists between customer focus and organizational performance with moderator. The results show that leadership does moderate the relationship between customer focus and organizational performance. It has positive impact of moderation on customer focus, as a result of which the customer focus enhances the organizational performance of pharmaceutical industry. So it is found that the firms which are more customer focus they would be able to get higher level of customer satisfaction that would eventually increase the desired performance outcomes.

4.2.3 MODERATION ANALYSIS WITH CONTINUOUS IMPROVEMENT

Continuous improvement is having significant direct relationship with organizational performance and similarly the result of moderation analysis shows that continuous improvement is significantly moderated by leadership. This shows that moderator influence the impact of continuous improvement in enhancing the organizational performance of pharmaceutical industry of Pakistan. The results of coefficients are given in following table. Proposed model for this analysis is

$$ORGP= \beta_0 + \beta_1 CONT + \beta_2 LRD + \beta_3 (LRD*CONT) + \varepsilon$$

COEFFICIENTS

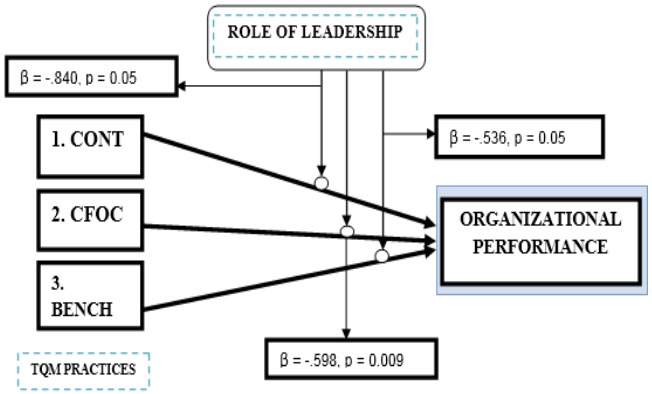
Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-6.987	3.729		-1.874	.066
LRD	2.303	.983	1.599	2.341	.023
CONT	2.592	1.015	2.597	2.552	.014
INT1	-.536	.265	-2.971	-2.027	.048

a. Dependent Variable: ORGP

Following model is derived on the basis of regression results

ORGP= 2.592 CONT + 2.303 LRD + (-.536) (LRD*CONT)

Partial moderation is found between organizational performance and construct of quality management practices; continuous improvement (CONT). The results show that leadership influences the impact of continuous improvement on organizational performance of pharmaceutical firms. So it is concluded that if firms of pharmaceutical industry focus on continuous improvement under supervision of leadership it will be more effective in enhancing the organizational revenues. The pharmaceutical firms can show a big difference in their performance by incorporating leadership construct to control and execute the continuous improvement programs. This will definitely create a huge difference in the performance of the firms which are focusing leadership as compare to those which are not focusing.



Model with moderation results

Figure.3

Figure 3 shows the results of moderation analysis. p- Values and coefficients values show that all of these three relationships between quality management practices and performance are partially moderated by leadership.

CONCLUSION AND RECOMMENDATION

The pharmaceutical industry of Pakistan is accepting the importance of quality management practices which are getting popular in this industry. But the pace of adopting new practices and their successful implementation is still lagging behind the advanced countries. The firms in pharmaceutical industry which are customer focused and were working on continuous improvement by following benchmarking practices were realizing better organizational performance. The success of quality management practices in delivering desired organizational performance is strongly influenced by the effective role of leadership. It is concluded that the pharmaceutical industry of Pakistan has develop the concept of leadership for successful implementation of quality management practices to generate the desired performance and it is featured with moderate level of quality management techniques. In pharmaceutical industry it is found that leadership clearly identifies quality goals for employees to achieve. Leadership views quality as more important factor than cost and schedules objectives in pharmaceutical industry. Leadership is effective in obtaining resources to support the quality program. And it is also effective in obtaining resources to support the quality program. The firms in which leadership was actively involved in quality management programs were proved more productive then other firms.

5.2FUTURE IMPLICATIONS

The successful implementation of quality programs depends on workforce. If pharmaceutical industry would have more trained, involved and empowered employees it is more likely to realize benefits of implementation of quality management techniques. The findings of research study suggest that management of pharmaceutical industry should be more involved in quality improvement programs.

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