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Impact of Total Quality Management on organizational performance with mediating effects of knowledge transfer and Innovation capabilities of Employees

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ABSTRACT

This study analyzes the connection between quality management practices and organizational performance and simultaneously whether internal knowledge transfer and innovation capabilities of employees mediates this relationship or not. This study of Total Quality Management is embraced by analyzing different logical variables that form it. Hypotheses are created on the connection between some quantity management practices, inside knowledge transfer, innovation capabilities and organizational performance. Data was composed from quality managers of textile firms of Faisalabad. 280 Questionnaires were distributed among the people those who are well knowledgeable about the technicalities of TQM principles. The final data of 241 questionnaires received back has been considered for further analysis purpose. The outcomes affirm the significance of the QM context-oriented factors on organizational performance in the presence of internal knowledge sharing and innovation abilities of employees. More investigation into the efficacy of quality management could be brought about by adopting a more holistic perspective of the supply chain. This perspective should explore how manufacturers, suppliers, and customers collaborate with one another.

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Introduction

During the past couple of years, associations all over the world have been attempting to

adapt to a rapidly changing business climate. In this climate, executives are required to be an increasing amount of intelligent in order to track down ways to either maintain or gain a competitive advantage. The majority of manufacturing companies have adopted new ways of thinking, such as concurrent engineering, lean production, just-in-time (JIT) strategies, total quality management (TQM), business process re-engineering (BPR), and others, in order to be more effective in the way they direct business. This is done in order to withstand the new challenges that have arisen on a global scale. The progression of the association's exhibition both internally and externally within its specific market targets is the primary impetus behind these ways of thinking. (Nkemkiafu, 2015).

The business climate has undergone enormous changes and improvements in quality, and it has become one of the fundamental techniques that could be implemented in any association in order to achieve a competitive advantage. These changes and improvements have occurred in recent years. In addition, because there is never-ending growth in the global labour market, businesses have to work on improving the quality of their products and services in order to compete with the numerous other businesses out there. A few comprehensive quality administration drills are performed on the product that is being carried out in order to improve hierarchical execution and for the purposes of further developing consumer loyalty. Total Quality Management (TQM) is predicated on the idea that all staff members of an organisation should collaborate with one another for the purposes of producing high-quality goods and services to fulfil the requirements of customers. As a result of the cutthroat competition caused by rising input costs, exorbitant loan fees, significant expense of innovative work, and high customer expectation on the quality of products and services, many manufacturing companies continually look for ways to improve quality while remaining financially savvy.

Several academics have suggested that the total quality management (TQM) system is a tool that might be useful for fostering learning and growing an organization's advantage over its competitors. In order for businesses to get the most out of quality management, they need to have an understanding of how to implement it. Dealing with QM via a method that is universally applicable may not provide the best possible outcomes. It's possible that different associations will call for a variety of approaches to QM. Scholars have acknowledged the relevance of contingency theory in operations management (Lawrence and Lorsch, 1967; Thompson, 1967). As quantitative methodology (QM) research advances, researchers need to go beyond just supporting practises and instead need to more likely appreciate the influence of setting on QM practises. This is because QM research is developing. Using concepts from contingency theory, a select group of scholars have started to develop a more nuanced understanding of quantum mechanics (QM). Foster (2006), for instance, makes a comment on the necessity of adopting a contingency theory approach while putting quality management into practice.

2. Literature Review

TQM is a system that may be defined as one that aims to generate and move administrations that are more effective and unequalled, and it does this by achieving collaboration amongst organisational people (Lethal et al., 2006). According to Dean and Bowen (1994), quality

management is a method of dealing with the board that is comprised of a "set of commonly building up standards, every one of which is upheld by a bunch of practises and procedures." This definition of quality management has achieved discriminate validity as for various methodologies for working on the association's performance (Hackman and Wage man, 1995).

The investigations demonstrate that quality management (QM) involves development practises that affect both the internal environment of the company and its interaction with its existing scenario. In a similar fashion, it contains drills that are focused on both the social and the specialist aspects of the company. Within the context of the relationship between the company and its present scenario, QM is the agent that drives the act of involvement with both the customers and the suppliers. In this context, "collaboration with providers and clients" refers to the associations' propensity to engage in lighthearted activities with both clients and providers, as well as to establish and maintain an open relationship with both groups (Flynn et al., 1994).

In the rigorously inside field, QM incorporates rehearses exceptionally centered around the social part of the firm, on regions like independence and cooperation as well as on others of specialized nature, for example, process control. By cooperation, we mean the propensity to foster errands in a gathering as opposed to separately. Independence alludes to the capacity of gatherings or people to be automatic in somewhat complete undertakings. The connections among TQM and Authoritative execution have been upheld broadly in writing, however effect of logical elements on execution and mediation associated with this relationship by knowledge transfer and advancement abilities of representatives would be an unprecedented expansion to existing writing. The process of one authority unit obtaining information from another may be referred to as knowledge transfer. Internal knowledge transfer refers, basically, to the act of one unit passing on information to another unit inside the same organisation (Hansen, 2002; Simoni, 1999). The factors that are associated with the source unit, those that are associated with the collector, those that are associated with the connection between the two, and those that are associated with the actual information can be categorized as the variables that influence how easily or how difficultly knowledge is transferred (Gupta and Govindarajan, 2000; Simoni, 1999; Szubanski, 1996).

Innovation can happen in three wide spaces; products, processes, and organizations, and is "a idea, product or process, system or gadget that is seen to be new to an individual, a gathering or firms, a modern area, or a general public all in all" (Rogers, 1995, p. 11). As per Amanpour (1991), organizational innovation consolidates the development and execution of groundbreaking thoughts, system, products, or technologies. In cutthroat business sectors, undertakings should expand their knowledge to adjust to new items and innovation, and persistently appropriate this knowledge to all representatives. In view of an association's interior factors, the idea of development can include specialized, item, and cycle advancement. These internal factors incorporate information and expertise assets, physical and the executive’s frameworks, and values and standards. The external factors incorporate clients, competitors, rules, and technology.

Management theory offers a helpful focal point from which to identify the many different QM practises that may be implemented (Amundson, 1998; Van de Ven and Poole, 1995). This research differentiates between different QM methods using principles from Walk's (1991)

Exploration and Exploitation models. Exploitation refers to actions that are congruent with phrases like refining, deciding, creating, becoming proficient, and carrying out, while exploration refers to activities that are described through search, revelation, experimentation, variety, and invention. This equivalent reasonable focal point can assist with grouping QM rehearses. From one perspective, associations need to control steady and natural cycles and further develop productivity. Thus, Quality Exploitation incorporates the QM rehearses that intend to guarantee the consistency and effectiveness of results. Accordingly, Quality administration investigation incorporates QM rehearses that are intended to investigate groundbreaking thoughts and distinguish novel arrangements especially for processes and new item.

Methodology

This study used a quantitative research technique to examine the relationships between TQM contextual variables, knowledge sharing, employee innovation skills, and organizational performance. Quantitative research has been completed; quantitative investigation begins with the testing of a hypothesis (Creswell, 2013). It empirically examines the link between various aspects using various quantitative or factual systems and poses hypotheses or questions (Creswell, 2013). In quantitative research, reliability and validity requirements are crucial. Experiments and sociological surveys are evaluated as instances of quantitative research of the highest quality. The objective of quantitative research is theoretical analysis. A population is a group of persons to whom research results are generalized, while a sample is a group of individuals from whom data is collected. Nonetheless, the procedure used to choose items for testing from a population is known as sampling (Fraenkel and Wallen, 2003). Testing is a crucial step in the examination process since it determines how much delegate test you have enticed from the populace. The most frequent method of sampling begins with identifying the group to whom the research's results will be applied. The third phase in investigating is identifying the population from the whole population available to the expert, and the last step is drawing tests (ARY, et al., 2002). Data was collected from quality managers of Faisalabad textile companies. 280 questionnaires were delivered to individuals who are well-versed in the technical aspects of TQM concepts. The final results from 241 returned surveys have been reviewed for further investigation.

4.0 Results

Composite Reliability

	Composite Reliability
Innovation capabilities	0.941
Knowledge transfer	0.924
Quality management exploration	0.924
Quality management exploitation	0.941
Organizational performance	0.886

Outer model represents the internal consistency in two ways: Composite reliability and estimation of Cronbach's alpha (Hair et al. 2011). It clarifies inter-relation of items used for measuring a construct. Resulting values of 0.7 or above are acceptable, however values of 0.6 or below indicates unreliability (Nunnally & Bernstein 1994; Hair et al. 2013). Table 1 shows the values 0.890 to 0.936 are higher than minimum requirement of 0.70.

Cronbach's Alpha

	Cronbach's Alpha
Innovation capabilities	0.933
Knowledge transfer	0.896
Quality management exploration	0.912
Quality management exploitation	0.931
Organizational performance	0.854

The estimation of reliability by Cronbach's alpha is lower bounded (Fornelli & Larker 1981; Tenenbaums, Vinz, Chatelain, & Laura, 2005). George and Mallery (2003) have stated the following criteria: Cronbach's alpha > .9 – Excellent, Cronbach's alpha > .8 – Good, Cronbach's alpha > .7 – Acceptable, Cronbach's alpha > .6 – Questionable, our result in Table-2 shows all values are above than 0.70. Our results are showing consistency of construct.

Table-3: Convergent Validity

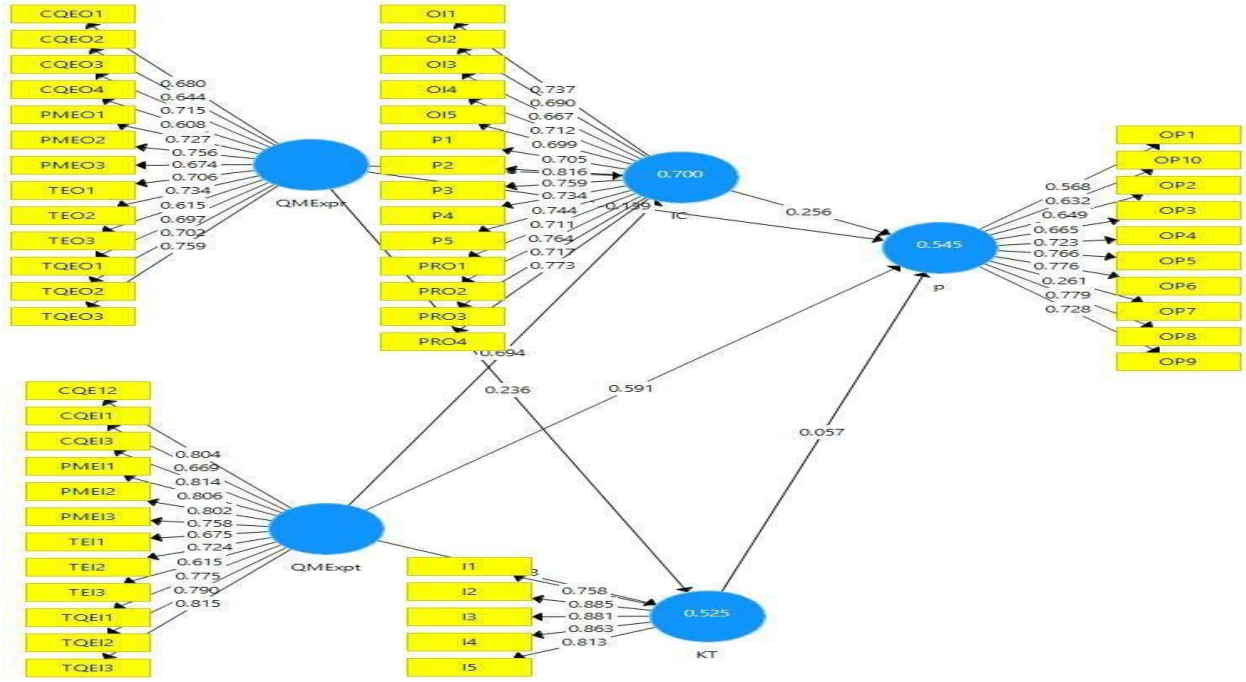
	Average Variance Extracted (AVE)
Innovation capabilities	0.535
Knowledge transfer	0.708
Quality management exploration	0.583
Quality management exploitation	0.572
Organizational performance	0.550

Convergent validity means many procedures of a construct are inter-related with each other (Campbell & Fiske 1959). It is measured by Average Variance Extracted (AVE) that give

guarantee of change by its indicators (Fornelli & Larker 1981). The value of AVE should be at least 50%. It means indicator describes 50% of construct variance (Bragozzi & Yi 1988). Table-3 showed all constructs having the values between 0.535 and 0.708.

Structural Model

Figure 1 presents the overall picture of structural model results. Positive or negative relation can examine by path coefficient that have statistical significance between constructs. It also measures value of squared multiple correlation (R^2). Path coefficient is significance if the t-statistics is more than 1.96 and p-value should be less than 0.5 % (Wong, 2013). All construct has positive relationships that can be examined in figure-2.



R Square values

R square is defined as "a measure of predictive accuracy and its magnitude describes a combined effect of exogenous latent variables on each endogenous variable" (Hair, Hilt, Ringlet, and Sestet 2014). In PLS-SEM analysis R2 value is used for measuring predictive correctness of research model (Hair et al. 2014). Its values should be ranged from zero to one. High value means high accuracy of prediction (Hair et al. 2014).

R Square values

	R Square	R Square Adjusted	
Innovation capabilities	0.700	0.697	Strong
Knowledge transfer	0.525	0.521	Strong

Org. Performance	0.545	0.538	Strong

Direct Relationships:

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
IC -> p	0.256	0.271	0.090	2.839	0.005
KT -> p	0.157	0.050	0.082	1.982	0.489
QM Expr -> IC	0.158	0.159	0.063	2.514	0.012
QM Expr -> KT	0.236	0.236	0.092	2.581	0.010
QM Expr -> p	0.139	0.147	0.105	1.928	0.185
QM Ext -> IC	0.694	0.692	0.061	11.386	0.000
QM Ext -> KT	0.508	0.506	0.084	6.057	0.000
QM Ext -> p	0.591	0.597	0.120	4.918	0.000

Above table showed the significant relation between the construct as p-value is less than 0.5 and value is more than 1.96.

Table 10: Summary of Structural Model results

Hypothesis	Relationship	Statement of Hypothesis	Results
H1	**IC -> p**	There is a significant relationship between innovation capabilities of employees and organizational performance.	Accepted($p<0.05$) $t=2.839$
H2	**KT -> p**	There is a significant relationship between knowledge transfer and organizational performance.	Accepted ($p<0.05$) $t=1.982$
H3	**QM Expr -> IC**	There is a significant relationship between quality management exploration and innovation capabilities.	Accepted ($p<0.05$) $t=2.514$

H4	**QM Expr -> KT**	There is a significant relationship between quality management exploration and knowledge transfer.	Accepted ($p<0.05$) t=2.581
H5	**QM Expr -> p**	There is a significant relationship between quality management exploration and organizational performance.	Accepted ($p<0.05$) t=1.228
H6	**QM Ext -> IC**	There is a significant relationship between quality management exploitation and innovation capabilities.	Accepted ($p<0.05$) t=11.386
H7	**QM Ext -> KT**	There is a significant relationship between quality management exploitation and knowledge sharing.	Accepted ($p<0.05$) t=6.057
H8	**QM Ext -> p**	There is a significant relationship between quality management exploitation and organizational performance.	Accepted ($p<0.05$) t=4.918

Test of Mediation

Relationship	**Sobel Test Result**	**Two tail Probability (p-value)**	**Assessment**
QMEX-KT-OP	3.62	0.00	Significant
QMEX-IC-OP	2.03	0.01	Significant
QMET-KT-OP	1.99	0.02	Significant
QMET-IC-OP	2.32	0.00	Significant

Above shows the outline of results and acknowledgment/dismissal of hypothesis based on Sobel test results. It shows that all hypotheses are acknowledged.

Conclusions

Previous research analysing the relationship between quality management practises and performance has yielded mixed results (Nair, 2006; Kayak, 2003). Several researchers have found that modifying quality administration practises can result in better performance than implementing standard or universal approaches (Westphal et al., 1997). In any case, scholars have provided scant guidance on the optimal way to revamp quality practises. In this study, Amundson's (1998)

contingency theory provides a theoretical focal point for understanding how associations can modify quality practises (Sit-in et al., 1994). This study empirically examines Quality Exploitation and Quality Exploration, two uncommon facets of Quality Management practises with distinct goals, using the theory of contingency. When knowledge transfer and innovation capabilities are considered, the examination revealed that these two aspects of QM have distinct effects on organisational performance. We can therefore conclude that knowledge transfer and innovation capabilities of employees mediate the relationship between contextual factors of TQM and organisational performance as a result of the significance of all the relationships examined in this study.

Muhammad Ayyub Arshad: literature search, study design, data collection

Iqra Sharif: Literature search, Methodology

Muhammad Hasnain Ali: Drafting and data analysis, proofreading and editing

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