

## Leadership and Educational Excellence through Mediating Role of Total Quality Management Implementation: An Empirical Evidence from Higher Education Institutes

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### Abstract

The purpose of this study is to examine the relationship between leadership and educational excellence with the mediating effect of total quality management. The data was collected from the private sector higher education institutes of Lahore. Questionnaire-based survey was used to collect data from 150 respondents comprising of students', teachers' and non-academic administration from six private sectors higher educational institutes of Lahore. Hypotheses were tested using structural equation modeling. Results reveal that leadership positively influences educational excellence in the higher education institutes whereas, this mechanism is partially supported considering total quality management as the mediating variable. This study is novel and has implications for the higher education institutions

**Keywords:** Total quality management, Leadership, Educational excellence, Higher educational institutes

### Introduction

This paper discusses the application of total quality management in private sector higher educational institutes of Lahore. It signifies that Educational Excellence is the outcome of the implementation of Total Quality Management practices. This research paper also highlights that TQM acts as a mediator in the structural relationship of Leadership and Educational Excellence. The survey and the results thus obtained confirmed the relationship.

The success of a country is directly reliant on the nature of education it provides. Education has remained the formative instrument for the individuals in totality (Chandna, 2014). Along these lines, educational institutes play the role of brick in the building of the nation. The term 'quality' has been broadly attributed to its contributions in the manufacturing concerns. Nonetheless, the idea has more extensive applications in the service sector too especially in the education sector. The thought of quality in higher education has been looking for the attention of all the concerned groups in the education sector for the last few decades (Tsiotras, 2017). The significant changes in the advance education institutes demand for the quality culture embedded in the Continuous Quality Improvement (CQI) philosophy (Selesho & Naile, 2014).

The quick change in the environmental forces is pushing the education sector to apply and execute quality measures and this turmoil in education requests establishments to reengineer their strategic planning according to the requirements of quality assurance (Tsiotras, 2017). All the environmental forces, such as economic forces, technological forces, competition etc are seeking for educational reforms. As described by Venkatraman (2007) that in the competitive world, in order to maintain the status of the organization and to stay competitive, reforms are needed in the educational processes. Literature has provided sufficient evidence in the favor of the notion of TQM in service sector like education (Thakkar, Deshmukh, & Shastri, 2006).

This research centers on the auxiliary connection between Leadership and Educational Excellence. Then it discusses the relationship between Leadership and Total Quality Management. It also elaborates the association between TQM implementation and Educational Excellence and light has been thrown on the mediating role of TQM implementation between leadership and educational excellence. The study uses Smart PLS 3.0 for the analysis of results

### **Literature Review**

In reality, in the changing conditions of the universe of advance education, TQM is conspicuous among the most proficient strategies for making up with challenges in the market, and with inside and outside accomplices (Mehta, Verma, & Seth, 2014). The concept Total Quality Management (TQM) evolved in the mid 1980's in the USA (Khanam, Siddiqui, & Talib, 2013). The concept comprises of three terms namely Total, Quality and Management (Witcher, 1990). Also it is the act of overseeing the whole company in order to attain the excellence (Das, Kumar, & Saha, 2010).

Total Quality Management is (TQM) is a widely used theory, and TQM framework utilizes the IPO (Input-Processing-Output) model to demonstrate the linkage between the variables in a TQM framework (Wang & Hao, 2012). TQM related practices aid to augment an association's sustainable competitive advantage by improving its managerial competencies (Tsiotras, 2017). TQM centers around continuous improvement of processes (Juran & Godfrey, 1998) and the genuine supporters of the effective usage requires great support from the top management (Jaca & Psomas, 2015). The variables of TQM can be classified into two groups (Khanam, Siddiqui, & Talib, 2013). One of these groups include the external

factors (soft aspects) for example, internal/external cooperation, customer focus, employee fulfillment, and learning. The other viewpoint alludes to the internal factors of the administrative structure, its implementation and enhancement of an administrative framework.

Continuous improvement of products and processes plays the role of pillar in the area of TQM which emphasizes on the never ending examination of potential problems studying working procedures and the training of employees to more readily manage any issues that emerge. TQM practices invigorate the development of leadership (Das, Kumar, & Saha, 2010).

Das (2010) made an investigation of three utilizations of TQM in the government sector , and demonstrated the significance of leadership. TQM requires a special kind of leadership (Deming & Orsini, 2013). Leadership with regards to TQM isn't about power, authority and control, however it centers around empowerment , recognition , mentoring and enhancing others ability so that they can generate satisfaction of customers and establish competitive advantage (Mustafa & Bon, 2012).

One component of leadership which might be particularly pertinent to TQM is learning (Liao & Chang, 2010). TQM is practiced as organizational culture at organizational level. It is evident from various studies that leadership is central to any effort which is aimed at transforming the operational structure of a company (Sumukadas, 2006). Due to the lack of leadership and its support , the employees behaviour is probably not going to change. Moreover, leadership also influences other quality characteristics. Das(2010) explained that top management should act as leaders when actualizing TQM. Therefore, Higher Education Institutes HEIs have executed TQM practices to ensure the quality of education provision in order to vanquish the contemporary challenges (Ardi, Hidayatno, & Zagloel, 2012).

Keeping in mind the end goal to expound the wider importance of the term, (Juran & Godfrey, 1998) clarified quality as “fitness for use or purpose” (Crosby, 1979) as “conformance to standards,” and (Deming & Orsini, 2013) as “a predictable degree of uniformity and dependability at a low cost and suited to the market. Quality is a multifaceted term with various definitions we will

consider quality as how much the presence of intrinsic attributes satisfies the necessities (Russel, 2000). Degree refers to the fact that quality could be described by adjectives such as good, poor and excellent. Inherent is pronounced as a feature, which resides permanently into something. Characteristics could either be quantifiable or it could be subjective or objective. The requirement is an explicit need; more often expected by the organization, and its other stakeholders (Besterfield, 2011).

As per the vast majority of the analysts, quality is characterized as the product or service that goes beyond the desires of its customers (Besterfield, 2011). Most important questions such as about the customers, product, and stakeholders of HEIs are still unanswered. The issue turns out to be more extreme when students are accepted both as clients and the products (Venkatraman, 2007). The definition provided by Quality Assurance Agency (QAA), the entity responsible for providing quality assurance service throughout the United Kingdom describes quality as:

‘Academic quality is a way of describing how well the learning opportunities are available to students, which help them to achieve their award. It is about making sure that appropriate and effective teaching, support, assessment and learning opportunities are provided for them’ (QAA 2004).

Srikantham and Dalrymple (2003) suggested that the definition of quality varies with the view of each stakeholder. Yet, the disagreement does pertain to the stakeholder's view. The literature suggests various stakeholders as funding bodies, existing and forthcoming students, employers, academic and non-academic staff within the universities.

TQM is a set of values of management to handle quality comprehensively (Chen, Chen, & Chen, 2014). Intending to quality, TQM considers this system as a unified whole which connects alternate viewpoints together and additionally the main impetus for persistently enhancing quality (Chen, Chen, & Chen, 2014). The above literature infers that TQM helps in the formation of a culture where objectives are shared by everybody in the association. Each performing actor working for the association turns into a piece of the aggregate quality administration process. Educators trust that TQM can be a helpful device in bringing changes in the education sector (Chandna, 2014). Therefore, it could be said that involvement of all stakeholders such as leadership, students, teachers, administrative employees etc. is required for TQM execution

Apart from the money related advantages that are appreciated by the organization, TQM administration brings educational excellence. HEIs attempt enhanced academic excellence through the foundation of specific methodologies (Tsiotras, 2017). Embracing excellence is vital for making and setting up a society and economy centered around knowledge, and for accomplishing the targets of economical advancement and increasing employment opportunities (Joosten, 2015). Brusoni et al. (2014) suggest that excellence can be:

‘(a) A depiction of the present condition and furthermore an objective or yearning for organizations, academics and students (b) describing something that is exceptional, meritocratic, outstanding and exceeding normal expectations; and, (c) a relative and an absolute concept.’

Tsiotras (2017) featured that excellence is a term having misty and unclear implications simply like quality. Along these lines, the above discussion delineates that usage of TQM standards prompts educational excellence. Various authors portray perfection as a misty and unclear term simply like quality (Tsiotras, 2017). For the creation and improvement of a society based on knowledge, the accomplishment of monetary targets and enhancement of employment opportunities, endorsement of excellence is an absolute necessity (Joosten, 2015).

TQM procedures could be administered only in those organizations that have visionary leadership and are inclined towards the development of processes related to TQM and sensitive about the quality of products. The European Quality Award and Malcolm Baldrige Quality Award feature

significance of top management commitment to the TQM endeavors. The leadership of Higher Education Institutes ought to realize the importance of employee involvement and draw attention to continuous improvement while actively participating in TQM implementation (Bayraktar, Tatoglu, & Selim, 2008). Tsiotras (2017) has declared leadership, academic, and non-academic human resource, as the basic factor in the effective usage of TQM principles in advanced education institutes. Then again, Kekale (2015) affirmed leadership as a “highly contingent phenomena.” Venkatraman (2007) likewise demonstrated Leadership as the central building block of TQM structure in HEIs. The commitment of top management confirmed through the clear depiction of the mission statement; by utilizing the notion of empowerment of employees are the significant factors in the execution of TQM (Gravan, 2012).

### Research Questions

Following are the research questions for the research study

- Does TQM implementation lead towards educational excellence in private sector higher education institutes of Lahore?
- Does Leadership play a vital role in achieving educational excellence?
- Does Leadership function as a critical factor in TQM implementation?

### Conceptual Model and Hypothesis

Figure 1 is presenting the Conceptual model of the study. It suggests that Educational Excellence is the result of Total Quality Management if implemented properly. A positive relationship has been hypothesized between them. The positive association can also be seen between Leadership and Educational Excellence. However, this relationship is mediated by TQM implementation.

This model has been adopted from the study of (Bayraktar, Tatoglu, & Selim, 2008). The variables TQM and Leadership have been picked from their study. However, Educational excellence has been added through the extensive study of literature. This model is specifically used because it is more relevant to our study and have same research objectives. . The challenges faced by the Turkish Higher education institutes are also more or less similar to those faced by Higher education institutes of Pakistan which makes the applicability of this model easier in this context

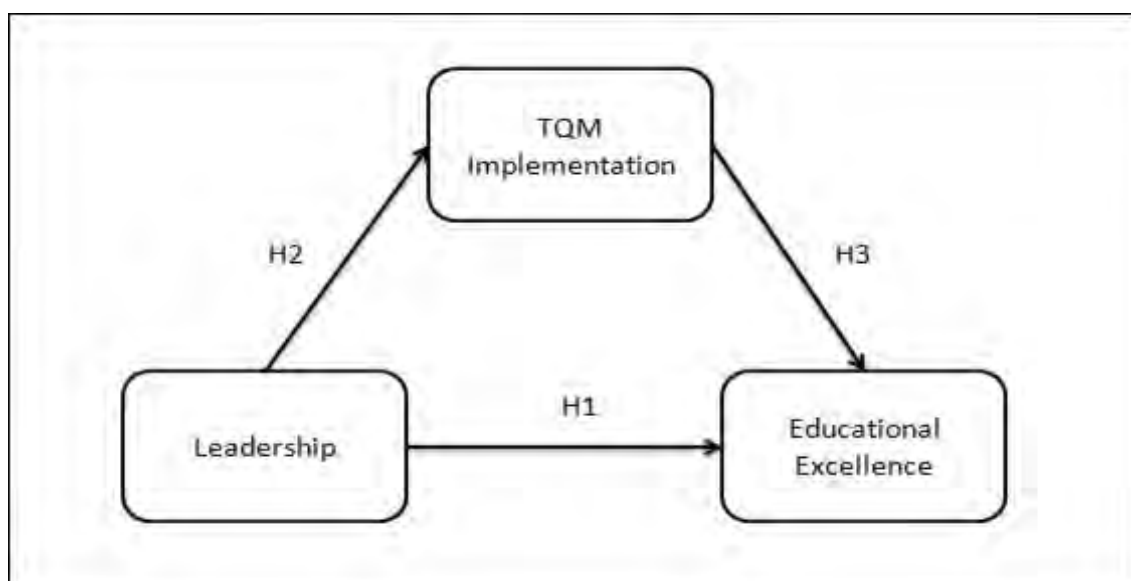


Table 1 highlights the hypotheses and their description.

**Table1. Research Hypotheses**

Hypotheses	Description
H1	Leadership has a positive impact on Educational Excellence
H2	Leadership has a positive impact on TQM Implementation
H3	TQM Implementation has a positive association with Educational Excellence

## Methodology

### *Sample and Data Collection*

The conceptual framework relating to TQM and EE is based on extensive literature review of the domain.

It is hypothesized that qualitative performance of Higher Education Institutions is based on TQM practices with true spirit. The quantitative research methodology is used for this research and Questionnaire was adopted for data collection. The scale has been opted from the study of (Bayraktar, Tatoglu, & Selim, 2008). In order to assess the relationship between Total Quality Management and Educational excellence and their respective parameters using Smart PLS, a conceptual model is required. The model is explained through latent variables. A set of exogenous and endogenous relationship explains the concept. In this research, the conceptual model is based on one endogenous latent variable Total Quality Implementation and one exogenous latent variable i.e. Educational Excellence. Their relationship is mediated by the involvement of Leadership.

Sample size plays an important role in the estimation and interpretation of SEM results. If Partial Least Square Structural Modeling Technique is used for data analysis, then a rule of thumb is used which is to have at least 10 cases per measured variable or indicator (Siddiqui, 2013). A sample of six universities from a total population of 22 universities of Lahore was selected using multi-stage sampling technique. In the first stage, universities were selected using random sampling and in the second stage, 25 respondents from each university were selected using simple random sampling. PLS Structure Equation Modeling is used to check the correlation between the dependent and independent variables (Ringle, Wende, & Becker, 2015). Data for this study was collected through structured questionnaires. A survey was conducted and major three stakeholders of the educational institutes were asked to fill the questionnaires. Two hundred questionnaires were distributed among the employees and students of selected universities of Lahore. At the end of the stipulated time, 152 questionnaires were collected. However, two questionnaires were not included in the study because of incomplete filling. 150 completed questionnaire sets were included in the study, which is adequate according to the study of (Hair, Hult, Ringle, & Sarstedt, 2016).

### *Measures*

Operationalization of theoretical terms and development of constructs to measure the concept is fundamental in behavioral sciences, since it is hard to quantify or measure the phenomena. Or, these latent variables are estimated through manifest variables that are measurable (Wong, 2013). The capacity of these measures to precisely get the genuine outcomes is gauged from reliability and validity estimation (Hair et al., 2012). The study of literature let us find out the way by which we can measure our constructs. The measures are embraced from previous examinations and changed if necessary to meet the prerequisites of the present investigation.

In this study Scale was adopted from the study of (Bayraktar, Tatoglu, and Selim, 2008). Scale had five items each. In order to maintain consistency, all responses were gauged using



the 5-point Likert with scale 1=Strongly Disagree, 3=Neutral and 5=Strongly Agree. The questionnaire included the measures of Leadership, Total Quality Management and Educational Excellence in different sections. Appendix 1 contains the details. In this study, scale was adopted from the study of (Bayraktar, Tatoglu, and Selim, 2008).

### **Analysis**

#### ***PLS method***

It includes a wide-ranging set of computations, frameworks based on statistics and computer algorithms, to evaluate the data. When the information available is not sufficient and the data also lack the supporting researches or theories, then PLS-technique is used (Hsu & Fang, 2009). PLS-SEM is flexible in terms of sample size and the number of indicators used in the (Hair, Hult, Ringle, & Sarstedt, 2016). Multi-group analysis and the problem of co-linearity are also handled by this method effectively. This study considers TQM and EE as reflective indicators

#### ***Reliability, validity, and descriptive statistics***

Correlations and Cronbach's  $\alpha$  value is depicted clearly in Table 3. Through the intercorrelations of the observed indicator variable, Chronbach alpha assesses the reliability. The Cronbach's  $\alpha$  for Education Excellence, Leadership and TQM Implementation is 0.842, 0.925 and 0.899 respectively. The significant values range from 0.7 – 0.9. Values higher than 0.6 are also acceptable (Hair, Hult, Ringle, & Sarstedt, 2016). All the values of Chronbach alpha fall within the specified ranges it means that all the indicators are highly inter-correlated and has high reliability. Convergent validity is assessed through outer loadings of the indicators and the average variance extracted (AVE). To measure the constructs, outer loadings of the constructs are evaluated. Table 3 shows the results of measurement analysis, including factor loadings, composite reliabilities, and average variances extracted. Generally, the values of AVE should be greater than 0.5 in other words construct should explain at least half of the variance in its indicators (Hair, Hult, Ringle, & Sarstedt, 2016). The values of AVE range from 0.59 to 0.82 and fall under the specified ranges. The composite reliabilities were calculated using the HTMT criteria. Traditionally, its value should be less than 0.85 (Hair, Hult, Ringle, & Sarstedt, 2016). Table 5 shows that the values of HTMT are within the required ranges

**Table 2. Composite Reliability and Validity**

<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
Education Excellence	0.842	0.884	0.606
Leadership	0.925	0.947	0.816
TQM Implementation	0.899	0.919	0.590

**Table 3: Outer loadings**

<b>Indicators</b>	<b>Education Excellence</b>	<b>Leadership</b>	<b>TQM Implementation</b>
CR1			0.767
CR2			0.828
CR3			0.877
CR4			0.769
EN2	0.667		
EN3	0.824		

Indicators	Education Excellence	Leadership	TQM Implementation
EY2	0.859		
EY3	0.824		
EY4	0.698		
LD1		0.908	
LD3		0.903	
LD4		0.926	
LD5		0.876	
NAD2			0.660
NAD3			0.637
NAD4			0.786
NAD5			0.794

Outer loadings of 0.7 or above are considered highly significant (Hair, Hult, Ringle, & Sarstedt, 2016). While 0.6 is considered acceptable. Outer loadings having a value less than 0.6 should be dropped. The same threshold of 0.6 is used for this study. Hensler et al. (2015) suggested that variables with outer loadings 0.4 to 0.7 should be assessed before deletion. If by eliminating a variable, values of other outer loadings increase then the variables should be eliminated

**Table 4: Heterotrait-Monotrait Ratio (HTMT)**

Variables	Education excellence	Leadership	TQM Implementation
Education Excellence			
Leadership	0.520		
TQM Implementation	0.580	0.564	

**Table 5: Coefficient of Determination R<sup>2</sup>**

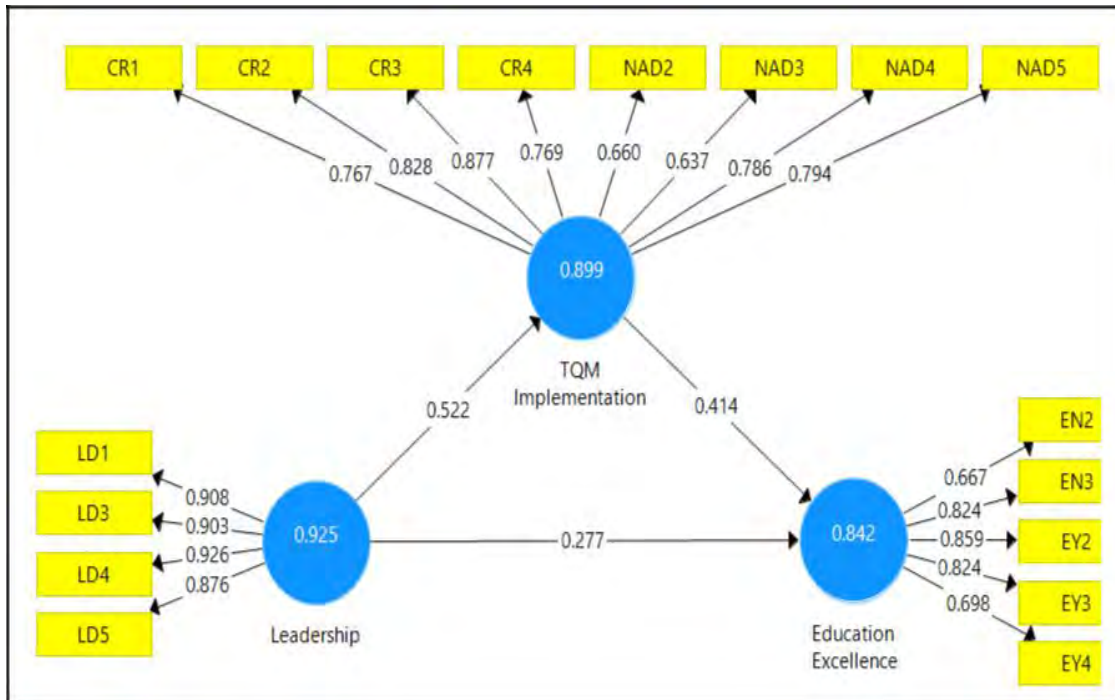
Variables	R Square	R Square Adjusted
Education Excellence	0.369	0.360
TQM Implementation	0.273	0.268

Discriminant validity indicates the degree to which a construct is dissimilar from others. It is the extent to which a construct is truly distinct from other constructs by observed standards. In other words, it shows that the construct is unique. There are three approaches to measure the concept that includes cross loadings, Fornell-Larcker criterion and HTMT ratio. HTMT will be used to measure Discriminant validity because of the limitations of other approaches. The ratio of between traits to within traits correlation is known as HTMT ratio. Traditionally its value should be less than 0.85 (Hair, Hult, Ringle, Sarstedt, 2016). The table shows that the values of HTMT are within the required ranges. In other words it could be inferred that all the variables i.e. Total Quality Management Implementation, Leadership and Educational Excellence are highly discriminant.

## Results

This study seeks to describe the association between TQM practices and educational excellence along with the significant role played by leadership. The research hypotheses were structured

according to the research objectives, which were to identify the relationship between leadership and educational excellence with TQM acting as a mediator in the relationship. Table 1 summarizes the hypotheses of the study



**Figure 2: Path Analysis showing Mediating Relationship of TQM Implementation**

Results support hypotheses H1 as the relationship between leadership and educational excellence is significant and positive ( $\beta=0.277$ ,  $p<0.01$ ). From the table 6 it is obvious that the value of Beta is 0.270 showing 27% influence of Leadership (LD) over Educational excellence (EE). A value of “t” is 4.473 and which is greater than 2.576 (a table value 2.576 at 1%). It shows that LD has significant impact on EE. Similarly the relationship between LD and TQM is positive and significant as Beta value is 0.522 which indicates 52% influence and value of “t” is 8.653 which proves significance. Same could be inferred about TQM and EE as the Beta value is 0.414 which indicates a change of 41% .

These results show how leadership is linked to TQM ( $\beta=0.522$ ,  $p<0.01$ ) and TQM is positively associated with educational excellence with a significant value ( $\beta=0.414$ ,  $p<0.01$ ). The study applied t-test to check the significance level. Results reveal that all the three hypotheses are significant at 1%

$R^2$  that is an assessment of the predictive power of the model explains the combined variance of the exogenous constructs in the endogenous constructs. Literature depicts that values of  $R^2$  0.25, 0.5 and 0.75 as weak, less strong and strong respectively (Hair, Hult, Ringle, & Sarstedt, 2016) According to table 6, the model depicts a strong relationship between educational excellence and TQM implementation.



**Table 6: Hypothesis Testing**

Hypothesis		Suggested effect	Path Coefficient Beta	t-Statistics	Sig.	Confirmed
H1	Leadership has a positive impact on Educational Excellence	+	0.277	4.473***	p>0.01	Yes
H2	Leadership has a positive impact on TQM Implementation	+	0.522	8.653***	p>0.01	Yes
H3	TQM Implementation has positive association with Educational Excellence	+	0.414	5.865***	p>0.01	Yes

\*Significance at 10% (1.645); \*\*Significance at 5% (1.96); \*\*\*Significance at 1% (2.576)

It could be seen that values for both the measures are within the desired boundaries. Values show a moderately strong relationship between exogenous and endogenous latent variables. Table 6 summarizes the structural model given by PLS.

### Conclusion

Total Quality Management has turned into an essential component of quality management in Higher Education Institutes. It urges the human asset to upgrade every system and course of action in quality inside an enterprise and go beyond consumer satisfaction. Quality emerges as the essential issue in the area of education today. The issue with the present education framework is the output that it yields in the form of students is not up to the standard and don't satisfy the requirements of the job market (Higher Education Commission 2016). The question of quality in Higher Education is directly related to the lack of visionary leadership. In Pakistan, most of the university's top management (Board of Regents, rector and associate rectors) is not knowledgeable about TQM principles and its implementation. TQM is still treated as a cost to the universities. TQM is as yet regarded as a cost to the universities. Top management does not partake effectively in TQM execution and bolsters the change procedure. Employee involvement in decision making TQM execution is out of the question. The biggest hurdle in proper implementation of TQM is that top management does not allocate ample resources for academic and administrative employee education and training.

The goal of research was to discover the basic linkage and the effect of LD on EE. while considering the impact of TQM at the same time By analyzing the path coefficient beta, it is clear that there is noteworthy relationship between LD and EE and TQM. This study highlighted the relationship between Total Quality Management and Educational Excellence. This relationship is affected by various factors. One of them is Total Quality Management. Results show that the relationship between Leadership and Educational Excellence is mediated by the TQM Implementation. This study addressed the following concerns

Leadership has a positive impact on Educational Excellence.

Leadership has a positive association with TQM implementation.

TQM implementation leads towards educational excellence and has a positive association

The relationship with the effect of mediation becomes stronger.  $R^2$  value is greater than 0.26 that's why it could be classified as a good model and has a considerable degree of explained variance of Educational excellence. This model indicates the ultimate and crucial importance of leadership in the execution of Total Quality Management.

#### ***Contribution towards Theory***

The quality administration is the key factor to improve the efficiency of Higher Education Institutes in light of the fact that these institutes house and produce talented, creative and capable people for the society. In this way, the mission for TQM framework in such establishments has turned into a declaration over the globe and such perspective has been getting much contemplation in Pakistan. Numerous associations are doing extraordinary endeavours so as to implement the total quality principles. However, it is a dilemma that researches in this area are fewer. It is a seminal work and an addition to the body of knowledge which addresses the application of TQM principles in education sector, particularly in Higher Education Institutes, Also the TQM implementation requires urgent consideration from the regulatory authorities. This research will be a remarkable resource in this field of study.

#### ***Importance of the study***

This research views TQM to be responsible for bringing extraordinary qualitative results within Higher Education Institutes of Lahore. This study will also be beneficial for those institutes who have an urge to apply TQM practices and develop and implement quality culture. It will identify the "Critical changes" which need to be adopted in order to implement TQM principles properly and get desired results. Such HEIs will produce better graduates by decreasing the gap between the industry and the HEIs and will have greater employability.

#### ***Study Limitations and Future Research Avenues***

Although the research is a starting point in the dearth of research in the field of Total Quality particularly the education sector in Pakistan and comes up with useful findings like other human led researches, this research also has some limitations. Due to the time and resource constraints the study was conducted only in the HEIs of Lahore. However, this study could be applied to private sector universities across Pakistan for achieving better results. This study will open new avenues for the future researches

#### ***Recommendations***

TQM awareness programs should be developed by regulatory authorities in order to create awareness of Total Quality Management among the Top Leadership of Higher Education Institutes. As the result indicates that leadership plays a significant mediating role in the implementation of TQM principles so in order to boost the change process and to bring educational reforms TQM programs should be made a compulsion and Leadership of private sector institutes should be compelled to apply these principles in HEIs of Lahore as the execution of TQM is the consequence of visionary leadership and only such a leadership can bring educational excellence.

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