COMPARATIVE ANALYSIS OF QUALITY MANAGEMENT PRACTICES IN PUBLIC AND PRIVATE UNIVERSITIES

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By

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ABSTRACT

Title: Comparative Analysis of Quality Management Practices in Public and Private Universities

Quality is a very essential aspect in any sector of service in the competitive world. Quality management plays a very important role in achieving competitive advantages in an educational institution. The present study focuses on comparative analysis of quality management practices in public and private universities with International Organization for Standardization (ISO) 9001:2015 reference. All the directors of quality enhancement cells, heads of departments, and teachers were considered population from public and private universities. Purposive sampling was applied to select the sample of universities. The research study sample comprised fourteen universities (seven public and seven private) with due representation of Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory (ICT). Stakeholders like heads of departments, teachers, and directors of quality assurance cells from different universities were selected through stratified sampling. The present study adopted a mixed method design. A self-developed questionnaire and semi-structured interview were used for data collection. Data were analyzed with mean, standard deviation, percentage, t-test (SPSS), and QDA Miner Lite. The findings indicated that quality management practiced were being practiced in Pakistani universities to some extent and respondents' satisfaction was medium. The widest principle was evidence-based decision making and the lowest principle practiced was leadership, improvement, and process approach. Data shows that there was a medium potential for adopting ISO 9001:2015 in the public and private sector universities. As public and private sector universities, respondents highlighted challenges as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, lack of commitment of top management, lack of training, the existence of accreditation, inappropriate culture, lack of incentives and rewards, lack of resources, lack of planning, and resistance to change. If the higher education commission set criteria and orders notification for international accreditation then the university becomes part of ISO 9001 quality management at a global level.

Keywords: quality management, ISO 9001:2015, universities, public sector, private sector.

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LIST OF ABBREVIATIONS

PDCA	Plan-Do-Check-Act
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Educational Fund
SPSS	Statistical Package for Social Sciences
SD	Standard Deviation
USAID	United States Agency for International Development
TVET	Technical and Vocational Education and Training,
MUET	Mehran University of Engineering & Technology
ACBSP	Accreditation Council for Business Schools and Programs
QM	Quality Management
MBNQA	Malcolm Baldrige National Quality Award
SHEAC	Singapore Higher Education Accreditation Council
NIST	National Institute of Standards and Technology
EFQM	European Foundation for Quality Management
NPO	National Productivity Organization
PMQA	Prime Minister Quality Award
SAR	Self-Assessment Report
HEC	Higher Education Commission (Pakistan)
HEI	Higher Education Institution
ISO	International Organization for Standardization
QMS	Quality Management System
TQM	Total Quality Management
QEC's	Quality Enhancement Cells
HODs	Heads of Departments
HE	Higher Education
UK	United Kingdom
USA	United States of America
IPEs	Institutional performance evaluation
MBNQA	Malcolm Baldrige National Quality Award
IWA	International Workshop Agreement
Ph.D	Doctor of Philosophy
M.Sc.	Masters of Sciences
M.Phil.	Master of Philosophy
M	Mean
Df	Degree of Freedom
ACBSP	Accreditation Council for Business Schools and Programs
CF	Customer focus
L	Leadership
EP	Engagement of people
PA	Process approach
I	Improvement
EBDM	Evidence-based decision making
RM	Relationship management
C	Challenges

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DEDICATION

TO MY LOVING HUSBAND,

(FURQAN ALAM)

My Respected Father and Mother

AND

Affectionate Teacher

“DR. WAJEEHA AURANGZEB

CHAPTER 1

INTRODUCTION

Context of the Study

This chapter presents an introduction highlighting the problem of the study which is related to quality management practices. The chapter also presents the statement of the problem, objectives, and hypothesis. Moreover, the chapter also covers the scope and significance of the study.

Quality management comprises quality policy, planning, assurance, formation, implementation, control, and improvement. Quality management tasks sustain at the required level of excellence. Furthermore, the term quality management includes entirely the process, technology, people, organizational culture, and stakeholders to make its goals and culture achievable. Mahesh & Kumar (2016) describe that quality management is the set procedure for an organization needs to follow and meet objectives. Quality management focuses on achieving quality policy and objectives with customer requirements. It expresses organizational resources, structure, policy, procedure quality objectives, and policy to meet the customer requirements. Implementation of a quality management system can achieve a greater strategy this can enhance the brand name, and greater the response rate, this can help in coordination and documentation within the system.

ISO (2005) quality management that controls and directs an organization. The rapid expansion of quality management implementation in the industrial sector as well as in higher education institutions successfully. It's successfully implemented in international colleges and universities in Turkey, Malaysia, and the USA examined by

numerous investigators. Andiva (2019) expresses that in public schools strategies of teaching are improved by quality management practices.

Albert (2002) defines that internal drives are more important than external drivers. In the list of quality management, Deming, Crosby & Juran are famous American experts. In the development of policies and principles about quality management, their contribution has great importance. In 1982, the first publishing book of Deming out of the crisis explains its philosophy deeply. The new standard for quality management system was published in September 2015 by the international organization for standardization. Now-a-days many universities are certified by ISO 9001:2015. This requires a process of identification, implementation, and evaluation of requirements.

Quality management and its influence now-a-days provide a guiding tool for institutions that are viewed to give valuable background information about the importance of the quality management system, particularly about ISO 9001:2015. There are many ways to describe the term quality likewise the absolute approach, customer-oriented approach, supplier-oriented approach, and customer expectation, it deals with customer needs and requirements as supplier oriented approach, focusing on compliance with certain certification that supports and ensure quality in the final product. The absolute approach categorizes the quality into different levels like bad, good, and middle that are related to the overall evaluation of term quality. Product-oriented approach related to the how-to assesses the product and services from a customer point of view regarding the ratio of process performance.

But above all definition of quality is a subjective term ISO defines quality as a "combination of inherent characteristics which meet certain requirements". This means the degree of fulfillment of customer expectations and requirements of the product (Sick, 2016). ISO standards are subject to continuous improvement. Every several

years, a new renewed version is published. Wide acceptance of the international organization for standardization (ISO) 9000 standards introduced in 1987. With the passing of time certification of ISO 9001 has increased gradually. West et al. (2000) define that ISO was formed in 1947 in Geneva to provide operated technical specification of standardization in the international market.

Levitt (2005) defines that the abbreviation of ISO is brought from the Greek word "isos" meaning equal. Numbers of organizations and institutions get ISO certification and increase their supply chain. Standards have been brushed up many times on their journey in 1994, 2000, 2008, and 2015. Entirely, 2000 revision was significant with minor changes recently done in 2015, its the revised version released. ISO 9001 total number of certifications was issued as 1,036,321 (including 4190 in September 2015). Last year, a slight decrease of 0.2% (ISO, 2015). This faintly decreased may be due to various challenges with ISO 9001 standards. A key concern of implementation of quality management is related to a workforce, which includes professional, profitable companies, employees, as well as customer who works in the universities directly or indirectly (Murad & Rajesh, 2010).

A paradigm of quality management is accepted in companies and businesses all over the world with the time it expands in insurance, banking, educational institution, healthcare, etc. Oduwaiye, Sofoluwe & Kayode (2012) describe that the educational system is going toward reconstruction. Moreover, changes are required in the educational process for the improvement of quality education (Mishra & Pandey, 2013). Quality management aim is improve customer satisfaction and the performance of the institution. Its principles are applied in the manufacturing sector and higher education in particular. Quality management implication in universities increases competition among universities but its implications in universities of developing countries are least

studied. ISO 9001:2015 is the standard for quality management. In the sector of education, these standards use effectively in all organizations. Moreover, many universities introduce ISO 9001:2015 standards of quality management that successfully apply in universities academic and nonacademic units (Bernik, Sondari & Indika, 2017).

Furthermore, (Hussein, Abou-Nassif, Aridi, Chamas & Khachfe, 2017) express that the confidence level of the stakeholders increases through the implementation of ISO 9001 in their system of education. In the USA and Europe, ISO standards were elected. In Pakistan, now it has become popular. As all departments of (NUST) are ISO certified. The limited department of NED University is ISO certified. Moreover, LUMS, Wah University, (CIIT) COMSATS Islamabad, Lahore Leads University, Capital University of Medical Science, an Institution of Space Technology, University of Sindh, Foundation University, Riphah International University, Nur international University Lahore, are also certified universities. There are a lot of examples where ISO 9001:2015 standards are implemented successfully in the educational institution, e.g. Australia, UK, USA, Thailand, Malaysia, and Turkey.

Moreover, Purdue University, Oregon State University, and Wisconsin Stout University implemented quality management standards successfully. In the US universities like Northern Arizona, Boston, Columbia, and Tennessee implemented quality management standards successfully. Different universities and schools in the UK are certified by ISO 9000. ISO 9000 first certified university is the University of Wolver Hampton. Other universities like the University College Dublin and the University of Leads Metropolitan are ISO certified. Queensland University, Victoria University, and Monash University are examples of Australian universities that enjoy quality management practices (Khan, 2010). The Malaysia University of Technology

and the University of Malaysia are ISO 9001-certified universities (Jung, 2004). Furthermore, in Turkey, Hong Kong, and Thailand quality management practices were implemented.

For improving the standards and academic quality higher education commission established a quality assurance agency on January 18, 2005. In 45 phase-wise national universities established quality enhancement cells. For improving the standards of universities and bringing them with the part of international universities, the higher education commission is working well. But quality comes out with the improvement of the internal process of the university. For this purpose, quality assurance agencies need to reach a system that does not challenge the institutions autonomy but improves standards at any level, which are comparable with international and national accreditation and quality assurance (Batool & Qureshi, 2007, p.6). In addition, there is a great need for a proper system for quality management that can control processes and satisfy customers and other stakeholders for desired outcomes. Keeping in view the above scenario, the present study was conducted for a comparative analysis of quality management practices in public and private universities. Implementation of quality management is related to service quality for departmental competence.

1.1 Rationale of the Study

At the international and national levels, many initiatives have been taken for quality improvement. On the international level, there is a set of ISO 9001:2015 standards. This view is recognized in education day by day. The reform process accelerated the history of Pakistan first time after the university inception. Through (IPEs) institutional performance evaluation standards, universities were assessed by the (HEC) higher education commission for maintaining quality. International certification

is also very important. Different stakeholder pressure in the area of services, developing resources, trained and certified faculty, a well-defined system of monitoring, review, improvement, and quality education, increases the competition for attracting student excellence and developing a customer focus approach.

Fonseca (2015) defines that through ISO 9001:2015 institutions problems can be solved. It is very beneficial for universities because it is documented. Othman et al. (2017) describe that ISO 9001:2015 is competitive for technological advancement. Furthermore, universities respond to quality management for dealing with a challenge such as a mode of learning like distance learning and e-learning, international universities wide network adopting with the help of ISO 9001. Paunescu & Fok (2005) argue that numerous universities registered ISO successfully. It provides suitable satisfaction for teachers, students, and other related stakeholders for the requirement of training, research, and quality of education for continuous improvement. Moreover, it provides international registration for universities. So, it is important and needs of the time to establish ISO 9001:2015 to internationalize quality management systems for universities for customer satisfaction. Furthermore, it increases, the institution productivity and competitiveness (Bernik et al., 2017). For the requirement of ISO 9001:2015, the first step is gap analysis.

The main reason for ISO 9001 certification is to improve the university image in the international and national markets. That means, in the eyes of external and internal stakeholders confidence, raise through international recognition. Moreover, universities can use certification as a tool for advertising in the media to get recognition. The reason is consistent with other studies finding (Tayyara et al., 2000; Santos & Escanciano, 2002). The reason is similar to the finding of western, Asian, and Arabic country studies. Limited research studies have been conducted in Pakistan to search the

quality management practices in universities. This is one of the salient features of this study. So, it is important and needs the time to go towards international certification because our vision and mission is quality education. Because of quantity, quality compromises sometimes.

This research study was conducted to compare the ISO 9001:2015 quality management practices in private and public sector universities. The present study presents a snap for universities for ISO 9001:2015 for their readiness. Furthermore, the study identifies the challenges of quality management in public and private universities. The study focuses on the public and private universities that were assessed or are in process of assessment of IPEs.

1.2 Statement of the Problem

Public and private universities endure fast growth with time. The neglected sector of universities is on notice of the government and the government also allocated funds for it. The reform process has been reformed in the history of Pakistan after higher education commission inspection. The higher education commission evaluated the universities through institutional performance evaluation standards (IPEs). Knowing the current status of the universities is the best effort at a national level, as well as universities, need to go towards international certification also.

Increasing pressure from different stakeholders enhances competition, demand for resources, high performance of staff and faculty, higher education institution finds customer focus approach, focus on market-driven for the overall improvement of performance (Bevans-Gonzles & Nair, 2004). Some external factors of globalization, such as international educational institutions widening networks, cross-border education, changing the mode of education, such as e-learning, distance education, and

diversion in the community and students have made higher education institutions international players working in the competitive world (Khan, 2010). Higher education institution adopts different standards and model such as EFQM, MBNQA, ISO 9000, etc. Paunescu & Fok (2005) define that in many institutions ISO 9000 implementation gives assurance to stakeholders in training and education. According to (Alalfy & Abo-Hegazy, 2015) to resolve the challenges of universities need a model such as ISO 9001. The selection of the model is based on the present condition of the universities and its implementation in ISO 9001 gives assertion to students, faculty, parents, staff, and further stakeholder requirement related to research, quality education, record, documentation system, a system of monitoring, review, improvement, and training that met continuously. Furthermore, it gives universities, international recognition.

Liaqat & Afzal (2019) describe that in the 1960s-1970s international students from neighboring countries preferred to study in Pakistani universities, especially in engineering and medical. War on terrorism changed the scenario. Today Malaysia, Gulf States, and India become the hub of higher education while Pakistan is lagging far behind. We have the potential human resource and infrastructure needed for the revival of higher education. What is missing in academics is the lack of initiative. Institutional accreditation is an important medium for preparing global workers to compete in the global market. This study is particularly conducted for a comparative analysis of quality management practices in private and public universities.

According to (Rana, 2009) a guideline related to quality standards and policies for institutions has been provided through a quality assurance agency. It can also help to scan the whole system from course development to pedagogy. As quality management system is new in Pakistan. According to HEC quality is related to achieving standards and reaching the maximum outcomes. In 2005 quality assurance

agency is established. The key aim of this agency is to regulate quality enhancement cells (QEC) operated by different universities in Pakistan. They are involved in the faculty training and the development of the program creation of new guidelines and policies for setting appropriate standards.

Sitnikov & Bocean (2015) suggest that for avoiding error universities need to prepare a proposal for the requirement of quality management ISO 9001 proper implementation. National universities need an internal well to establish a quality management system like ISO 9001:2015 for customer satisfaction. Competitiveness and productivity increase with the help of a quality management system. The above situation calls for higher education institutions to implement of ISO 9001:2015 quality management system.

1.3 Research Objectives

The study objectives were as follows:

1. To compare quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by stakeholders.

   1a To compare customer focus practice in public and private universities as perceived by stakeholders.

   1b To compare leadership practice in public and private universities as

   perceived by stakeholders.

   1c To compare engagement of people practice in public and private universities as perceived by stakeholders.

   1d To compare process approach practice in public and private universities as perceived by stakeholders.

1e To compare improvement practice in public and private universities as perceived by stakeholders.

1f To compare evidence-based decision-making practice in public and private universities as perceived by stakeholders.

1g To compare relationship management practice in public and private universities as perceived by stakeholders.

2. To explore the challenges in the implementation of quality management practices in private and public universities.

1.4 Research Questions

Research questions were as follows:

1. What are the quality management practices used effectively for the enhancement and promotion of ISO 9001:2015 in private and public sector universities?
2. What are the challenges in the implementation of quality management practices in private and public universities?

1.5 Null Hypotheses

H_{01} There is no statistical significant difference regarding quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by stakeholders.

H_{01a} There is no statistical significant difference concerning customer focus in the private and public universities as perceived by stakeholders.

H_{01b} There is no statistical significant difference concerning leadership in the private and public universities as perceived by stakeholders.

H_{01c}There is no statistical significant difference concerning the engagement of people in the private and public universities as perceived by stakeholders.

H_{01d} There is no statistical significant difference regarding the process approach in the private and public universities as perceived by stakeholders.

H_{01e} There is no statistical significant difference regarding the improvement in the private and public universities as perceived by stakeholders.

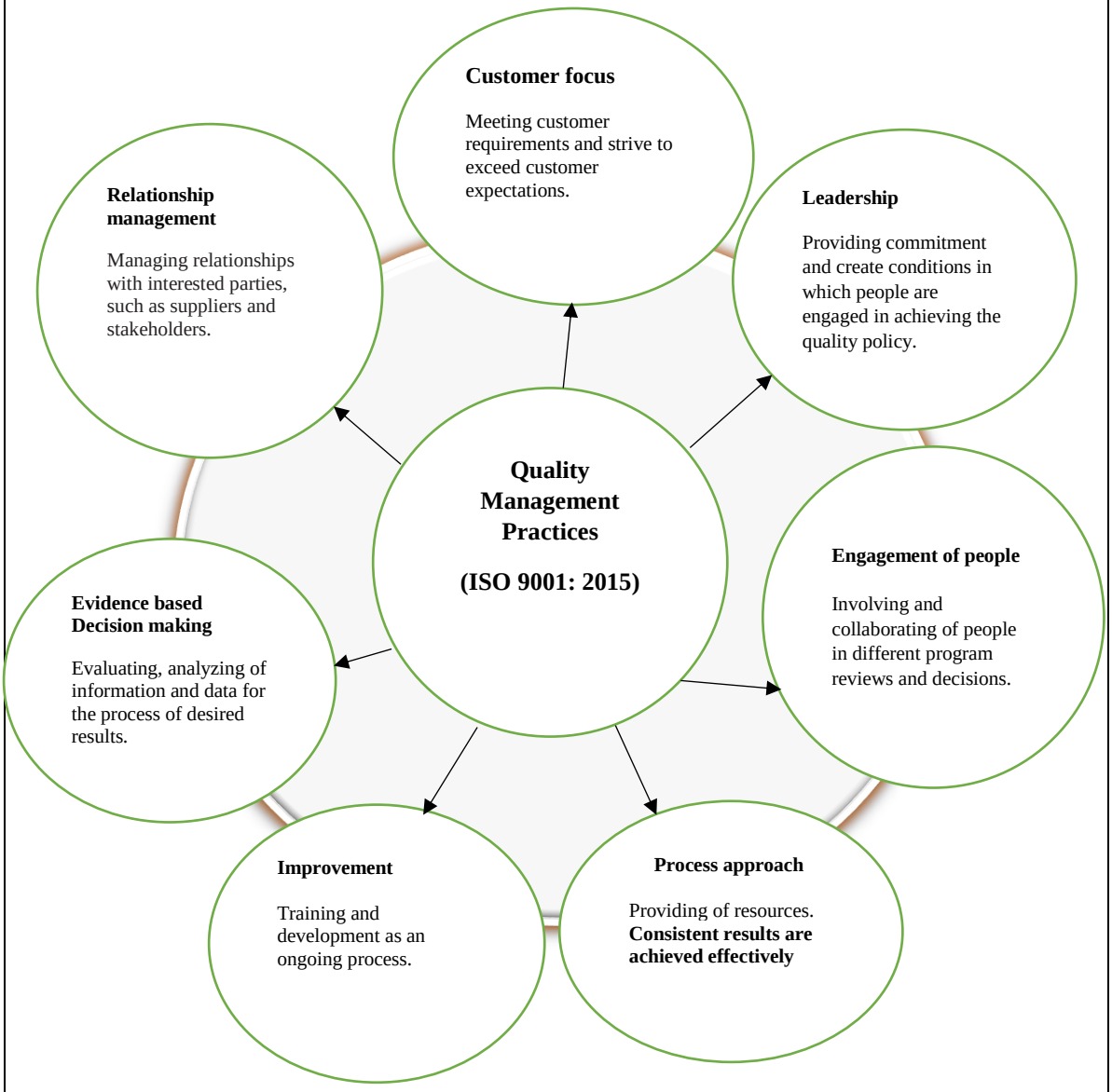
Ho_{1f} There is no statistical significant difference regarding evidence-based decision-making in the private and public universities as perceived by stakeholders.

H_{01g} There is no statistical significant difference regarding relationship management in the private and public universities as perceived by stakeholders.

1.6 Theoretical Framework of the Study

Figure 1

Theoretical Framework



Note. ISO 9001:2015 quality management practices. Source: ISO (9001:2015): (www.iso.org)

1.7 Operational Definitions

i. **Management**

Management coordinated activities to direct and control an organization.

ii. **Quality**

Quality refers to the degree which to set inherent characteristics meet a set of requirements.

iii. **Quality management**

Aspect of the overall management function that determines and implements the quality policy.

iv. **Quality policy**

The overall quality intentions and direction of an organization as regards quality, as formally expressed by top management.

v. Customer satisfaction

Customer satisfaction is a perception. It is a question of degree. It can vary from low satisfaction to high satisfaction. If the customer believes that the institution doesn't meet the requirement they experience low satisfaction. If an institution meets the requirement, customers experience high satisfaction.

vi. Satisfaction

Satisfaction is the perception customers may be satisfied through the institution met all requirements.

vii. Top management

Top management refers to the people at the top of the institute. It refers to those people who provide resources and delegate authority to direct, coordinate and control the institute.

viii. **Audit**

An audit is a systematic evidence-gathering process. There are three types of audits. First-party audit to audit themselves. It is used to provide input for management review and for other internal processes, used for declaring that the institute meets specific requirements. Second-party audit or external audit. It is done by the customer or by others on their behalf. It can be done by regulators or other external parties that are interested in an institute. Third-party audits are external audits. It is performed by an independent organization like certification bodies or regulators.

ix. Stakeholder

Stakeholders are individuals that have an interest in any decision or activity of an institute like heads of department, and teachers.

x. Quality Management Practices

Quality management practices deal with customer satisfaction, leadership, continuous improvement, process approach, people involvement, relationship management, and decision-making based on evidence. There are the following ISO 9001:2015 quality management practices:

xi. Customer Focus

The primary focus of quality management is to meet customer requirements and strive to exceed customer expectations. In the sector of education, customers are listed as different stakeholders such as teachers, and HODs.

xii. Leadership

Leaders at all levels provide commitment and create conditions in which people are engaged in achieving the quality policy of the university. In the educational

sector, leadership is listed as the vice challenger, dean, registrars, HODs, and director of quality enhancement cells.

xiii. Engagement of people

It is a customer-related process. Involvement and collaboration of people in different program reviews and decisions. It involves sharing of knowledge and open discussion in achieving university quality objectives and solving problems.

xiv. Process Approach

It involves the provision of resources. Consistent results are achieved effectively and efficiently when activities are managed by the provision of resources for functioning the process coherently.

xv. Improvement

It deals with training and development. A successful institute has an ongoing process for improvement.

xvi. Evidence-based decision-making

It deals with the evaluation, analysis of information and data for the process of desired results.

xvii. Relationship Management

For sustained success, institute manage their relationships with interested parties, such as suppliers. A supplier is a person or entity that provides services to another entity. *It also establishes a mutually beneficial relationship.*

1.8 Significance of the Study

This study draws the attention of higher authorities and policymakers to the issue that surfaced at the implementation level. The finding of the study may contribute to the available existing knowledge of quality management implementation from the perceptions of those who are involved in the process of administration. From an academic point of view, multiple narratives that emerged during the process of data collection may be utilized to develop methods and themes of research. Which in turn, may be useful for further studies on the different issues.

The results of the study may be noteworthy for policymakers, and administrators knowing about internationally recognize standards and this may provide help for take initiatives for the benefit of the universities for maintaining and enhancing quality management. The finding of the study may be useful for consultants, and administrators knowing about the challenges in the implementation of ISO 9001 quality management in universities. It may be beneficial for teachers, HODs, and QEC directors for knowing about internationally recognized quality management practices.

From the empirical point of view, this study provides guidelines for a practitioner for implementing and adopting ISO 9001:2015 and facilitates them to focus on ambiguous challenges. The present study may be notable for different heads to implement quality management practices for expansion. Not only identify current practices but also identify the challenges. The study may make a foundation for universities for international certification. This study may be significant because very few studies have been conducted to assess the quality management practices in Pakistan's higher education institutions.

Moreover, may be interesting for stakeholders to the improvement of educational institutions quality. This study may be noteworthy in the field of education and quality education regarding quality management practices. In addition, enables the higher education institution in Pakistan to get registrations in ISO 9001:2015. The national education policy maker may use the result of this study for future education policies. World Bank, UNESCO, and different funding bodies may use the information and result of the present study for a new direction of improvement in education. Results may be helpful for those who take interest in the quality management of the universities of Pakistan and provide a new way for further research.

It may be a guide for policymakers on what aspects of quality management to be more emphasized in the future. Suggestions and results of the present study may be valuable for ISO 9001:2015 for assisting their own goals in developing countries' implementation. Furthermore, results may be useful for educational improvement in developing countries. The finding may be supportive for understanding the universities performance in quality management implementation as well as helping managers in decision-making regarding certification.

The significance of the ISO 9001:2015 certification for an institution may be helpful in the development of internal quality improvement and may provide very clearly defined documented processes. Possibilities in different countries entry into the market may be optimizing (P-D-C-A) process, active involvement, motivation of faculty in tracking changes in the institution, new standards may be helpful for branch solutions like distance learning, language learning, improve comparability for the need of external and internal training. Significance of the ISO 9001:2015 certification for HODs may be helpful in optimization of the process, reliability offer, information of

selected criteria for learning evaluation, assuring suitable resources like trainers (teachers) with suitable qualifications, and improvement of the learning environment.

1.9 Methodology

All the directors of quality enhancement cells, heads of a department, and teachers were considered population from public and private universities. Individual university websites were visited to identify teachers and HODs. Purposive sampling was applied to select the sample of universities. The research study sample comprised fourteen universities (seven public and seven private) with due representation of Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory (ICT). Through stratified sampling, the population is divided into a homogeneous group that is known as strata. In the population, every element has a chance of selected strata having due representation. This method is employed for the selection of stakeholders of the universities i.e. HODs, QEC directors, and teachers. In the case of the director of quality enhancement cells purposive sampling was used and for teachers and HODs simple random sampling.

The present study adopted a Quan+qual simultaneous design: Quan (questionnaire) + qual (interview) was used. A self-developed questionnaire and semi-structured interview were used for data collection. Items related to seven variables. The variable was under the heading of seven practices of ISO 9001 such as customer satisfaction (8), leadership (9), continuous improvement (6), process approach (8), people involvement (7), relationship management (5), and decision making based on evidence (5). Moreover, ten challenges were also part of the questionnaire. An item bank was created for items. Shivany (2013) Likert scale was suitable while the survey method of self-administered data was being collected. Likert scale was suitable for

respondents for asking perceptive. Getting a reliable answer from the respondent's questionnaire is the set of items. The quality management scale consisted of five points Likert scale, a scale based on (1-5 from strongly disagree to strongly agree). In addition, (Dilshad, 2009 & Akhtar et al., 2010) used the same (SDA to SA) Likert scale for measuring the perception of students, employees, and teachers. Initial questionnaire based on hundred items after validity pilot study and reliability 58 items included in the questionnaire. The theoretical framework of the study is based on ISO 9001:2015 quality management practices. A null hypothesis is a type of statistical hypothesis that proposes no statistical significance exists in a set of given observations. Hypothesis testing is used to assess the credibility of a hypothesis by using sample data. Sometimes referred to simply as the "null," it is represented as H_0 (Haldar, 2013). Null hypotheses are formulated in the present study. Data were analyzed with mean, percentage, and t-test by SPSS and QDA Miner Lite.

1.10 Delimitations of the Study

Delimitations of the study was as follows:

Universities that were evaluated or in process of institutional performance evaluation standards (IPEs) in the province of, Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory were selected. Data were collected from the head of departments, teachers, and QEC directors. Educational institutions have many activities and aspects to study but the study focuses on management aspects at the institutional level.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

Management is described as an attempt at running the organizational resources efficiently and effectively to reach the organizational goals. Moreover, the manager is responsible for handling physical resources (raw materials, capital, technical devices, and human skills) to be able to create quality, productivity, and efficiency (Iskarim, 2017). On the other side, quality is defined as human processes, products, services, and environments that meet expectations (Engkoswara et al., 2012). Quality is a process of fulfillment of determining the standards of management (Uchtiawati & Zawawi, 2014).

Quality in the education system is based on comprehensive ideas and characteristics formed in the outputs level of education, institution, or type of fulfilling the desired expectation of the customer for the use of the educational institutions (Iskarim, 2018). A formal quality management system that is applicable internationally is the ISO 9001 quality management system (Nasution et al., 2005). ISO 9001:2008 after that ISO 9001:2015. Seven principles of ISO 9001:2015 are used by a management team of organizers for enhancing the quality of the management system (Muryadi, 2018). Management is related to activities such as organizing, planning, controlling, and budgeting (Knowles, 2011). The quality management system describes every group performing its responsibilities well. In the worst condition higher management performs its duties at a lower level (Mauch, 2009).

Gaspersz (2008, p.268) defines quality management as the philosophy that purpose is getting the operational success of the entire organization. This philosophy

includes the principle and tools for implementation purposes related to the leader's commitment and management of the whole organization for continuous improvement.

Aamer et al. (2017) express that quality management level and its readiness is an indicators for fruitful adoption of quality management in institutions. The model of quality management depends on definite factors for productive implementation in any institution. In addition, numerous researchers believe that practices of quality management should be effectively implemented regardless of their accreditation status at all universities.

Many universities accepted the diversity that is found in university quality: regal frameworks, missions, and institutional profiles (UNESCO, 2002). Damme (2001) added that there are four important things in all quality-related approaches.

1. Realized minimum benchmarks and standards for quality
2. Achieve objectives within the resources that are available
3. Need to fulfill all stakeholders' demands and requirements
4. Excellence and continuous improvements are necessary.

Standards involve the purpose of the institution and requirements of quality policy (Hoyle, 2009). Another researcher defines standards as measurable and observes targets that we confirm. Standardization is the procedure of confirming what we do and taking action on items that do not fulfill the standards (Kemp, 2006). Dill & Soo (2005) defines some significant characteristics that are important for universities for their betterment. When students join the institution after that, quality can be judged, during their entire life span students attain only one degree of undergraduate, so it is difficult for the students to change their institution after taking admission because of the admission deadline with a heavy cost.

Harvey & Green (1993) describe that there are five approaches for higher education quality: quality as a fitness goal, expectations, and values in terms of money, transformation, and perfection. Quality management implementation produces results for the universities. In addition, the client who deals with universities offers the opportunity to address various educational goals that are necessary for continuous improvement (Sallis, 2005).

2.2 Quality Management

Quality is defined as the degree of characteristics in which objects fulfill the requirement (ISO, 9001:2015, pp.2-3). When people discuss the quality of a good or service, they typically refer to its excellence, perfection, or value. Of course, they ought to be discussing how much it is made to satisfy the original specifications (Tricker, 2016).Objects are defined as services, processes, products, etc. The teaching of quality gurus Shewhart, Feigenbum, Crosby, Deming, Juran, Ishikwaa, etc., is the guidance source for any quality-based literature. Starting guru of quality assurance focuses on technical process and tools on the system approach and hard aspects of quality advanced guru focus on the dimension of management, humanistic and self-approach to quality (Ross, 1995). Quality management is a structured set of operational procedures that are recorded, maintained, and applied throughout the entire organization, which also confirms steady organizational growth (Khan, 2010). Institutions and organizations can include continuous improvement cycles into their internal and external processes by using a well-considered quality management system. They can gain a competent image, able to save costs meet customer needs, and get rid of non-value-add processes. A quality management system, according to Tricker (2016), is a collection of elements that interact and are connected to determine the plan for accomplishing organizational quality targets that are explicitly stated by top management. A quality management

system also supports the institution's overall goals and initiatives to achieve a strong position in the global market.

A permanent increase in demand that ensures the quality of service or product leads to quality control and quality assurance leads to quality management. The operational procedures and methods used to meet quality standards are referred to as quality control. The goal of quality assurance is to increase confidence in a certain business by stating that it can fulfill the managerial procedure (Tricker, 2016).

Ciampa (1992) describes that both approaches are important for the implementation of quality management. The system approach focuses on inspection and monitoring procedures and a process is a process-oriented approach. Moreover, ensures conformance to documented standards and specifications. The humanistic approach, emphasizes leadership, management, planning, customer focus, teamwork, education, training, conformance to standards, and specification. Quality related to activities is an objective in the field of quality called quality management. Quality management is related to important requirements that avoid failure to control development, production, and processes as well as related to top management tasks for receiving a high-quality ranking among other strategic components of policy like purchasing policy, finance, and staff marketing.

Quality management is influenced by internal and external requirement that is directly linked to the economic and technical environment for changing the process. It is a continuous process. Quality management includes whole operational areas, and the structure of the institution (Combs, 2013). There is a difference in existing QMS operational areas like risk management, ISO 31000, and environmental management system ISO 14000. Now-a-days the famous QMS is the quality management standards ISO 9001. It was influenced by the internal and external requirements that are linked

with the academic and technical environments of companies and their changing processes.

2.3 Quality Management in Education

The principle of quality management can be used successfully in all types of organizations containing educational institutions (Bath et al., 2004). Kanji et al. (1999) define that after successful implementation in business organization quality management approach encouraged the educational institution to adopt it. In universities application of quality management started in 1980 in the United States. College of community and technology was the early adopter. Quality management activities that confirm the product with maximum quality at minimum cost. In England, quality management standards are practiced to raise interest since 1993 in universities.

Zairi (2013) defines that in university, principles may be applied in three areas. Quality management mostly solves the problem of administration and operations, in addition to curriculum, teaching, and research. In the USA, survey research is conducted in selective universities. Midwestern concludes that productivity, the morale of the participants, and environmental changes adaptability were improved through implementing quality management practices. Several research studies produce the result that quality management programs in universities have a positive relationship. Education has a wider scope, but another difficult track is defining the quality.

Irsyada et al. (2018) define that in education quality management include process, input, and output. Input quality defines as staff support, infrastructure, students, and faculty. Process quality includes activities of teaching, learning, and output quality includes the student's results. In education, quality is the continuous improvement of ethical values, standards of excellence, and important cultural

procedures. Moreover, he defines that transformational quality can be achieved through keeping in view customer satisfaction, building-specific institutional culture, and building structures.

For understanding the concept of quality questions raises such as who is the customer of education and what is the product of the education service. Yeo (2008) defines that service organization of education processes like lesson delivery, project supervision, and counselling services may include in the services that students as customers. If education is considered as a service, at that point quality provided by the institution is considered the standard. So, universities are considered service delivery. There are numerous customers of education in universities. Their external and internal interaction and physical location with the institution have categorized customers of education into two groups that are primary and secondary. The primary customer receives direct service as compared to the secondary customer.

Sallis (2002) describes another tertiary group. Primary internal customers are teachers and educators who receive service directly as well as primary eternal customers are students. Parents, sponsoring employers, and boards of governors are external secondary customers. Quality of education becomes a vented phenomenon if all customers need to fulfill it. Quality is defined as all the features of services and academics that are communicated by external and internal customers for meeting their expectations and needs. Beaver (1994) describes that the output of higher education is the graduate, whose expectations and needs must be fulfilled in the educational process because the external stakeholder is the graduates. Throughout the world, universities plan to services, the quality of their education, and academic processes with the perception of their graduates'.

Bayraktar et al. (2008) define quality management as the best tool for different universities for customer satisfaction. Sahney et al. (2004) added that education is a transformation process staff and students are the input, administration, learning, and teaching are the process, and earning, satisfaction, and results are outputs. Policymakers are concerned with the quality of an institution, programs, and teaching as well as many purposes like customer satisfaction, motivation, building institution themes, competition, and employee morale (Sudha, 2013).

Teachers are the greatest source for knowledge transformation and student learning because universities have adequate support for the learning of students (Eady & Lockyer, 2013). For teaching and learning technology is important which is related to resources that facilitate the learning of the students. Strategic plans are under operational plans that mostly include responsibility, targets, and integration (Taylor & Adrian, 2002). Though teaching quality education can be facilitated because knowledge and improvement in pedagogy can be enhanced through staff development (Zaki, 2006).

2.4 Concept of Quality of Education

Quality means the degree of excellence of a thing (Ashraf et al., 2016). Defining quality in education is difficult like justice and freedom. Quality in education can be experienced but difficult to define. Instead of philosophically stating parametric of quality have been prescribed and higher education institutions based on performance related to parameters of quality such as after graduation, students employment, examination result, based on external result reputation of the institution and so on. There may be grades and degrees which means that quality is the difference between success and failure. Ensuring that all get the same kind of education to ensure equality

Moreover, using the right methodology ensures quality (Haseena & Mohammed, 2015). The problem of quality of education generates by teachers' unethical behavior, educational instructional outcome, and institutional quality. Education quality in a country refers to characteristics such as traits of teachers because the quality of education is first conducted by teachers with the best academic background, good professional experience, and good training (Goldhaber & Brewer, 2000).

Westerheidjen (1999) defines the quality of education as continuous improvement. Researchers emphasize regular assessment of the process, input, and output. All academic features and other related services that focus on customers and stakeholders need to meet it (Dilshad, 2009). Raouf (2008) added that the key goal of quality is to obtain the satisfaction of the customer. Siddique et al. (2011) define an academic institution as having the following characteristics:

1. Methodology that enhances innovative and independent thinking,
2. Well trained, motivated, and capable members of faculty,
3. Relevant, well-designed, and suitable curriculum,
4. Suitable learning material, but not limited to a textbook,
5. Influential and strong leadership,
6. The sustained learning environment,
7. Reliable and valid examination system,
8. Sufficient instrument,
9. Effective support and structure of an organization,
10. Suitable finance.

2.5 Relationship between Quality Management and Higher Education

Fewer studies address the relationship between quality management practices and higher education (Tarı & Dick, 2016). In addition, many researchers say that successful quality management implementation in higher education is related to a relevant QM framework that meets its objectives and mission (Venkatraman, 2007; Burli et al., 2012). Several empirical studies determine the quality management practices that are conducted in higher education lead to generating different QM approaches, dimensions, and models adopted by such as in different studies (Psomas & Antony, 2017). Top management support and QM philosophy (Sakthivel, 2007) strategic planning (Psomas & Antony, 2017) people management (Psomas & Antony, 2017) process approach (Sadeh & Garkaz 2015; Psomas & Antony, 2017) information and analyses (Bayraktar et al., 2008; Sayeda et al., 2010) quality improvement (Bayraktar et al., 2008; Sayeda et al., 2010) continuous improvement (Aminbeidokhti et al., 2016; Psomas & Antony, 2017) program design (Bayraktar et al., 2008; Asif et al., (2013) identifies that the key process in higher education is usually the process of services and administration, research and teaching.

Now a days, innovation in higher education has become essential for raising the value of student education as well as at large society. Higher education institutions should be managed and converted innovation into standards of institutional culture and embedded in daily activities and created in interaction between knowledge accumulated by the faculty members and staff (Bayraktar et al., 2008; Asif et al., 2013). Jaskyte (2011) added that administration innovation refers to the application and introduction of managerial practices related to systems, procedures, processes, and structures that are new to the whole organization.

The quality of higher education is related to different things by numerous researchers. Bayraktar, Tatoglu & Zaim (2008) describe that quality management implementation in higher education increase competition and fulfill customer expectation and needs of stakeholders and evolving environment of education. During the late 1980 application of quality management principles in the U.K and USA, universities were pioneered. Three potential areas included in universities are academic administration, curriculum, and nonacademic functions (Vazzana et al., 1997). A critical step for implementation in universities is customer orientation and identification (Flynn et al., 1994). Here question raises such as who is the customer of universities. Literature related to quality describes that the student is the customer (Houston, 2007). As an earlier effort in establishing a partnership between industry-academic regarding graduates as a product and industry as a customer of universities. Based on this categorization students are seen as a work in process.

Campell & Rozsnyani (2002) define that quality in the traditional academic view that holds as it has the best. In numerous publications, the use of a quality management program and technique has been focused. Houston (2007) discusses the QM application technique and tools in universities and stresses that go beyond these methods. The key message of these programs is the improvement of universities performance. Some authors explain the soft elements of QM such as the role of the leader (Sirvanci, 2004) educational management (Venkatraman, 2007), and people management (Bayraktar et al., 2008). Many universities take the initiative and focus on a market-focused approach (Sirvanci, 2004). Houston (2007) focuses on the need for system thinking. The system approach stresses the development and improvement of university quality through a proper system approach by using quality management tools

and techniques. Moreover, the systems approach focuses on learning, flexibility, and adaptability of the process to accommodate students' expectations about the outcome.

Bayraktar et al. (2008) found that in QM process improvement there are several critical roles including process improvement, control, leadership, improvement, vision, employee involvement, measurement and evaluation of program, design, student focus, process control, training, and evaluation. System involvement, recognition, reward, and other stakeholders. This clearly describes that QM elements are very important for the improvement of customer satisfaction. As some elements are important in one context, the possibility it may not be relevant in another context of the economy, such as assumptions in contingency theory (Lawrence & Lorsch, 1967; Scott & Cole, 2000). Which describes that no theory or method can be applied in all types of cases, furthermore, the literature review shows that QM elements are relevant to higher education.

2.6 ISO 9000 Requirement in Higher Education

The concept of quality in higher education for understanding the reform policies of education is essential to assess the challenges of sustainable development goals (SDG) of quality education (Bruns, Macdonald & Schneider, 2019). Now a day the key aim of the education system is to provide the best education or quality education in educational organizations quality management system implementation is a fact in many countries. It is essential to obtain evidence for the changes and improvement that is the key point for implementation (Rodriguez-Mantilla et al., 2019). D'Este & Patel (2007) found that UK academics in which training, consultancy joint research, and contract research are common forms of collaboration. Aldabbas, Pinnington & Lahrech (2020) added that improvement of the QM system in creating an innovative climate

within an organization leads to societal and economic benefits for countries. Several scholars (Csizmadia, Enders & Westerheijden, 2008) have examined ISO 9000 factors for adoption in HEIs. Papadimitriou & Westerheijden (2010) added that isomorphic pressure in Greece universities for ISO 9000 adoption. They suggest that in Greece neo-institutional pressure is essential for the standards of ISO.

Papadimitriou (2011) added that the vice-rector and rector perceived that for the implementation of QM, external environmental pressures are essential for Greek universities. Moreover, the result indicates that in HEIs QM in Greece universities perceive through rules and regulations as well as ministering of education make policies for formalizing management practices in universities. Csizmadia, Enders & Westerheijden (2008) investigation shows that organizational characteristics such as (institution reputation and bureaucracy, leadership commitment, political decision-making process, and external consultants have a great impact on implementing QM in HEIs. Santana, Moreira, Roberto & Azambuja (2010) added the effect of corrective isomorphic external force for the implementation of QMS in the federal university of Pelotas in south Brazil. Most studies were conducted on ISO 9001 standards motive in HEIs in Lithuania (Leskauskaite & Pivoras, 2012; Ruzevicius, Adomaitiene & Serafinas, 2007) other countries added (Mohamed, Ghania & Basir 2015; Singh & Sareen, 2006) indicate the partial internal and external motives. From the theoretical perception these studies, mostly focus on a rational approach and reflect on an institution. Kasperaviciute (2013) rational approach to key motives is a new practice related to information about innovations utility (Ansari et al., 2010; Srivastava et al., 2009). Ruling (2013) in organizational performance eliminates the gaps. Norkus (2008) rational choice is defined as the action in which a specific situation achieves the objectives to satisfy the needs (p.91). Kasperaviciut-Cerniauskiene & Serafinas (2018)

study suggested that future studies can be conducted on quality management practices as well as an adaption of ISO 9001 standards implementation its problems and benefits.

i. **Graduates.** The course of the study may fail to satisfy the requirement of funding bodies, students, and employers. ISO, therefore, requires that the university identifies the learning outcomes desired by the parties. This opinion survey in case of students and negotiation in case of funding bodies (Shutler & Crawford, 1998 & Shutler & Crawford, 1998). In higher education, there is much concern in certain disciplines for falling enrollment, especially in engineering and science (American institute of physics). Shutler & Crawford (1998) added case studies on quality function development (Schauerman, Manno & Peachy, 1994). Pan (1995) added Singapore national–wide survey of undergraduates' opinions. Main & Priestly (1997) describe that many universities focus on four years courses instead of three-year honors degrees to bridge the ability gap. Dearing (1997, Ch.9) added that the admission process is based on a key amount of learning skills and higher-order thinking.

ii. **School leavers.** Students fail an exam because they do not have the prerequisite knowledge or skills to complete the course. ISO requires that in copying students assessed to ensure that they appropriately enter requirements for the course. The arguments that it is not the responsibility of the students to prove the hard after enrolling in a course are specially excluded by clauses of ISO covering raw materials provided by the customer (Shutler & Crawford, 1998). Dearing (1997) recommended process-based admission.

iii. **Syllabus.** Course may fail because of the syllabus that for setting the students to achieve the designed learning outcomes. If courses are highly theoretical students need procedural skills to learn. ISO 9000 specifies that the syllabus should be according to desired learning needs of the students. This may be done through a small

group of students for a test, through comparison of the theoretical; analysis of leaning out some with previously proven courses. Dearing (1997, Ch.9) added that where a single subject taught with technical depth needs to be the emphasis for the breath majority of the students after graduation wants to get a job their priority for a job is not a specialist in which they complete a degree.

iv. **Teaching.** Students may fail because of individual lecturers who allow their style of teaching methods. Some of which are not effective. So both the teaching and learning outcomes are monitored in the process of teaching at suitable points to ensure that this happens. Knight (1993) assesses the quality of learning and teaching. Dearing (1997, Ch.9) added that need to give details about desired learning outcomes and individual files of students for development throughout the course.

v. **Lecturers**. Students may fail because of ineffective teaching methods lecturers do not skilled in and try to put the method into practice. ISO requires putting duties of teachers based on experience and training. Training is the need of lecturers should be identified and provided. ISO 9000 teaching process is the requirement of assigning duties based on experience and training (Shutler & Crawford, 1998).

vi. **Examination.** Students may not have learned what they hope to learn because the process of the assessment was incapable of difference between satisfactory and unsatisfactory learning outcomes. ISO 9000 requires that desired outcome has been achieved before a certificate is awarded.

vii. **Dean.** Students fail to learn what they have been taught because of authority going wrong back. ISO 9000 requires authority must know about duties and responsibilities for making necessary changes. Based on experience and training, the education manager's task must be assigned. The training must be provided. The first steps require procedures to be documented in internal quality audits and quality records.

Experience shows that this process is a very hard-working process (Storey, 1993, 1994).

2.7 Modes of the Quality Enhancement

As part of institutional quality management, quality enhancement seeks to provide steady, predictable, and verifiable improvements in the standard of learning opportunities while taking into account the constraints that each institution must face (Williams, 2016). After decades higher education commission improve some existing measures for quality enhancement. Modes of quality enhancement and assurance for Pakistani universities are as follows:

In 2005, the quality assurance agency for the quality promotion of universities across Pakistan was recognized by (HEC). The main objective was to create guidelines and monitor quality in universities. Implementation of quality criteria to improve international competitiveness and promote continuous improvement at the level of programs and institutions. The main concern is to control the quality and the academic program of stakeholders in universities. It has been set up at the headquarters of the higher education commission. In addition, quality enhancement cells (QEC) were set up in phases in private and public universities in 2007. Quality assurance agency was set in ten universities**.** In 2008, twenty more universities in the second phase for quality enhancement cells were established**.** This phase consisted of quality enhancement cells set up in more than fifteen private and fifteen public universities in 2009-2010. In 2010-2011 in public universities quality enhancement cells were established that were twenty-four. In total, there were fifteen private and sixty-nine public sector quality enhancement cells established. In the higher education commission, three stages involve in the quality assurance framework. The first is related to the criteria and

standards development and public manuals guideline for quality assurance and accreditation. In the second stage, guidelines and manuals of self-assessment were developed for the system of internal quality assurance at universities. Guideline and standards manuals for accreditation of institutions and programs were developed for the third stage. This stage was related to the external quality assurance system. The first and second stages were completed. Quality assurance at the institutional level has also started and the audit team visits many universities **(**Batool & Qureshi, 2007).

2.7.1 Quality Assessment

The quality evaluation uses data gathering and analysis to demonstrate how closely something complies with predetermined standards and criteria. Using this method, if the quality is determined to be insufficient, an effort is made to identify the root cause. Using this information, corrective action is conducted, and the quality is then reevaluated after a reasonable amount of time. With the help of this methodical approach, quality assurance becomes a dynamic activity where criteria and standards are regularly modified to raise the bar on quality (Mainz, Hammershy, Worning, & Juul, 1992).

The government started to prioritize quality assurance as one of its top priorities. The result is the adoption of a system that enables quality assurance of universities in terms of their reputation (by a quality assessment system that includes peer evaluation), in terms of their resources (students, and teachers evaluation, equipment, spaces, and management systems evaluation), and in terms of their results (teachers publications, R&D project participation, performance of students and graduates, satisfaction of employers) (Sawand, Chandio, Bilal, Rasheed, Raza, & Ahmad, 2015).

As one of its key priorities, the government began to give quality assurance priority. The final result is the adoption of a system that enables quality assurance of universities in terms of their reputation (by a quality assessment system that includes peer evaluation), in terms of their resources (teachers and students evaluation, spaces, equipment, and management systems evaluation), and in terms of their results (teaching publications, participation in R&D projects, the performance of graduates and students, employers satisfaction) (Sawand, Chandio, Bilal, Rasheed, Raza, & Ahmad, 2015).

2.8 Ranking of the Universities

A higher education commission established initially six councils of accreditation and further established four more councils. Following councils of accreditation were running currently (HEC, 2011). Existing professional associations/accreditation boards: Pakistan Engineering Council, Pakistani Council of Architects and Town Planners, Pakistan Nursing Council, National Council for Tibb, Pakistan Bar Council, Pakistan Pharmacy Council, National Council of Homeopathy, Pakistan Medical and Veterinary Council, Pakistan Medical and Dental Council (HEC, 2019). Another name of the ranking is report card and league tables. Its relative performance includes the universities or academic programs against a fixed criterion of objectives (number of faculty qualifications, faculty ratio of students, the institution's output related to research, the number of students, and perception from professors, employers, and alumni, etc.). The main purpose was to inform decisions for students regarding their educational future (Cremonini et al., 2008). A ranking system of universities exists all around the world that captures people's attention and interest regarding the processing of quality assurance improvement. At the international level program and institution, ranking is completed by agencies of quality assurance like world report, Times higher education, and U.S. News. Canadian Universities Maclean

guide, America best college, UK guardian university guide, and Australia good university guide (Yorke, 2009).

In 2005, public universities ranking was done for the help of parents and students to choose the university and also provide the opportunity for peer comparison among universities. Moreover, the comparison model of the university was set by quality enhancement cells. Information was related to Facilities: infrastructure that includes classrooms, laboratories, journals, books, assessments of computer and internet, (15% weightage assigned), finances: current budget of development (15% weightage assigned), research output: international and national journals published by the research seminar, international and national level symposia at the university, faculty, conferences and research projects (26% weightage assigned), students: number of students pass out and enrolled, number of graduate and postgraduate students. M.Phil. and Ph.D. (17%weight assigned). Faculty: number of full-time and part-time faculty, faculty of non-PhD and Ph.D. (27% weight assigned). In 2007, institutions of private universities were categorized into quality criteria set as cabinet W.X.Y. and Z categories. Those universities that meet the key benchmarks of eligibility like sufficient resources and the degree-awarding program consisted (W) category. Universities that have major deficiencies were asked to make up and were included in the (X) category in 2007. Institutions and universities that don't meet the criteria were included in the (Y) category. Category (Z) includes the universities that were put into serious deficiencies. The last two categories of universities were allocated sufficient time to overcome the deficiencies. Regardless of all measures, in the universities, the higher education commission launched various programs under various supervision for higher education standards improvement. Some steps are as follows (HEC, 2009):

1. In-service program of teacher training, human resource development, faculty development programs of foreign, indigenous scholarship, and postdoc.
2. Handsome salary package for performance-based faculty employment through the system of the tenure track.
3. Open new institutions of higher education, private as well as public institutions for accessing improvement.
4. Establish research laboratories, digital libraries, and activities of the research sponsoring like conferences, symposia, seminars, research repositories, etc. to promote excellence in research and learning.
5. Establish criteria for M.Phil and Ph.D. students and update the curriculum.

These measures' results show that 168.5% improvement, enhances research, publishing, and student enrollment (HEC, 2009). Regardless of these measures, and observation by the researcher there is a resistance to change and a lack of motivation on the ground. In these situations, need more awareness, capacity building, and training for the improvement of quality-related matters. In the meanwhile, through the quality management approach, everything works in a streamlined position. Moosa (2009) describes that many routine activities of the quality-related matter of customer satisfaction were done without asking or being reminded.

2.9 Institutional Performance Evaluation (IPE)

Batool et al. (2010) define institution recognition as both process and status. It should provide a public certification for self-improvement and minimum quality in the recognized higher education institution. Institutional performance evaluation standards will not provide a guarantee of the quality of its graduates, courses, or academic program. These standards are based on qualitative criteria in terms of quality and

effectiveness to assess the institution's current status. Higher Education Commission (HEC) creates performance evaluation criteria for universities (IPEs). A key component of receiving acknowledgment for higher education is self-evaluation. HEC strives towards ongoing efficiency and development.

2.9.1 Various Performance Evaluation for Higher Education Institutions at a Glance.

i. **Mission Statement and Goals:** The institutional goals and mission describe its purpose within the higher education context. Institution goals are fitted with the wider aims of higher education and implementation in conformism with HEC set standards. Mission drive activities of institutions convey the quality standards important to meet its continuous improvement and effectiveness.

ii. **Planning and evaluation:** Planning and evaluation of the institutions practices, planning, and evaluation help accomplish its objective and mission. Institutional planning is related to discipline, systematic, sustained efforts, and coordination to institutional goals and mission through action and decisions that guide and shape what institution does, why it does and what it is with a fear of the future. Institution frequently evaluates their activities and actions to provide a fair and systematic set of information that focuses on the improvement of an academic program. Results of the evaluation are helpful for the institutions planning effectiveness in resource allocation, program, future development as well as a learning outcome. The result of the evaluation is effective for further enhancement of the process of implementing its goals and mission.

iii. **Organization and governess:** The institution has a governess system that is helpful in fulfillment of the goals and mission and strength institutional effectiveness. The institution maintains and creates an environment that enables scholarships for

creating research allocated to enable teaching-learning services. It assures the provision of resources for all programs across the governance system. The governance system describes policy development and decision-making and the role of the different institutions. The structure of governance includes inefficient governed bodies with the desire for autonomy for policy consistency and resource development that align with the mission of the institution.

iv. **Integrity:** Management conduct program deals with governing bodies, faculty, external agencies, student involvement, the general public, and high standards of ethics providing help for academic freedom. The integrity of an institution is demonstrated through its sets, objectives, goals, selection of its' faculty, service and research goals, development programs, curriculum, students' interests, diverse issues, and society services. The institution keeps the community's promises and respects them truthfully. Institution integrity strengths through periodic assessment of processes, policies, and ethical standards observance.

v. **Faculty:** The institution retains, develops, hires, and sustains a faculty that is passionate to complete the mission. For an institutions mission and objectives, faculty qualification, and quality-based programs are important. Faculty competencies and their responsibilities are important for academic offered programs. Moreover, the faculty is also responsible for research, scholarship, teaching, academic research, service, and professional program related to the institutional mission its' goals, and overall learning of students. The institution evaluates the support of faculty and its effectiveness in institutional mission and goals, scholarship, research, and teaching. The evaluation result has used the improvement of the quality of faculty for the accomplishment of the mission of the institution.

vi. **Students:** The best measure of the institution's success is related to the success of its students' institutions mostly pursue students whose educational goals, academic interests, and abilities are computable to its mission best exploration and provisions for the completion of their goals. Institution integrates with their students. Furthermore, the institution ensures practices of admission for all types of students such as transfer, self-financed, part-time, graduate, and non-degree, etc., and provides additional support for the completion of their educational goals and objectives. Criteria of admission, academic success, recruitment, retain are mentioned based on the student's objectives, mission, structure, and needs of the institution. The most significant criteria for admission are students' success. Institution evaluates their service and effectiveness through achieving institutional objectives.

vii. **Institutional resources:** The financial, human, technological, and physical resources are very important for the institutional mission for its effective, efficient, and continuous development. Intuitional management plays a vital role in the utilization of resources, mission fulfillment, and planning integrity. In the performance, the institutions internal and external resources play a vital role. Instructional resources such as equipment, financial, technological, safety, research, and all types of physical resources are important for planning, allocation, and assessment. Systematically evaluate institutional resources and their impact for further important results are used.

viii. **Academic, program, and curricula:** The academic program of the institution is consistent with its goals and mission. The institution works effectively for improvement, evaluation, assurance, and planning of the quality of academic programs, curricula, credits, and a degree awarded. The primary goals of education

institutions are learning and teaching, whether at the graduate or undergraduate level. Technological competency, academic program, and literacy depend on learning resources available such as the library, and services of learning resources include supporting services and libraries provided with educational training that facilitate the teaching and learning process. The institution offers recognized curricula that are consistent with academic programs and its mission of getting learning goals such as degrees, skills, diplomas, and certificates. These academic quality standards are evaluated for continuous improvement and quality enhancement.

ix. **Public disclosure and transparency:** decisions made at an educational institution that give its students, prospective students, and other stakeholders access to, accurate, sufficient, and comprehensive information. The institution also offers details about its goals and objectives, intended student results, requirements, practices, and policies about payments, admission, student fees, refunds, credit transfers, the academic program, courses, degrees, and other forms of associated recognition.

x. **Assessment and quality assurance:** The institution developed and implemented the self-assessment and internal process of quality assurance for the evaluation of its mission, goals, and effective accomplishment of quality assurance standards and external assessment both at the level of national and international. The standard of quality assurance and institutional assessment rest on IPEs' collective results. The process of evaluation is systematic for using, gathering, and reviewing data and information from different sources for improving and evaluating the learning of students where the standards of academics and learning are met. Assessment of results needs to use for improving teaching, student learning, governance, and research. Quality means the institution can guarantee with constancy and confidence

high standards of education. Quality assurance and self-assessment standards control the whole process of evolution, which believes that each institution is committed to quality improvement and its mission fulfillment. Quality is a professional responsibility achieved through individual quality assurance and improvement.

xi. **Student support service:** The institution proves adequate and efficient student support services that allow students to achieve the institutions' mission and educational goals. An institution is organized and requires a cohesive system of student support services for achieving the goals of education. The important factor for achieving the service are institutional competence, staff, and leadership. These services are an essential part of the whole educational activity for getting learning outcomes. The appropriate service includes health center facilities, the outlook of classrooms, and campus, sports, extracurricular activities, cafeteria, general cleanliness, and a conducive learning environment with great efficiency of education delivery system.

2.10 Quality of University Education on Global Perceptive

In the last decades, public concern toward higher education institutions, quality leading to quality management, program evaluation, performance indicators, and assessment of institutions and import model from the private sector to a system of higher education. This led to applying quality management methodology, tools, and principles to the sector of higher education. For all conditions except electronic and electric. Over sectors, international standards enable high quality. These standards also provide good property services, systems, and products for quality efficiency, and reliability. Also effective for easing international trade. ISO publishes and prepares documents for safe food, technology, and the health sector.

ISO standards can be defined as:

1. Country vice standard
2. Approved by institution common standards or basis for new standards, forming in different county collaborations between institutions.
3. In the production committee information was shared.
4. Contribution to global products, and services.

ISO 9001 sets all conditions and rules for quality standards for making the system. When all conditions and rules are firm, ready and brands are audited by the auditory institution for certification all institutions must be audited. If the results are pipeline then quality certification (ISO) 9001 is given. This proves that the services and products of that institution are reliable (Celik & Olcer, 2018). Dobrzanki & Roszak (2007) define that a system of education needs to focus on high-level assurance problems and the necessary adoption of quality assurance for increasing the quality of university education. In higher education, a European network of quality assurance made the first step in the implementation of wieldy expectations, shared values, and best practices related to quality by institutions across the European higher education system (Kandie, 2019). ENQA developed guidelines and standards regarding external and internal quality assurance agencies' work in EHEA repeated with standards and quality.

El Abbadi et al. (2013) define ISO 9001 as quality standards that are used by universities for implementing quality assurance and customer satisfaction practices. TQM perceptive seems consistent to describe common objectives in learning and teaching in general. Higher education seems to be similar to characteristics that formerly were common in industry and trade mass production in isolated subunits rather than in monitoring non-conformances and evaluation. This mode of operations has

increasingly been abandoned in industry and trade a similar development could be useful in higher education for teaching and learning. Higher education role in which possible changes dependent on the development in other parts of society between society and higher education at large. Many factors that influence future developments are changes in the demographic structure of the student population, continued monetary resources, changes in demands on the competencies of the workforce, and lasting means of unemployment (Tricker, 2016).

Becket & Brookes (2006) conducted a study in the university department for the evaluation of quality management. Results show that for quality enhancement it is necessary to implement some changes and evaluations. The quantitative type of data is currently more emphasizes. For quality assurance and enhancement, results show that external stakeholders' voices need to use more effectively. In the process of quality assurance involvement of employers and recent graduates in tourism and hospital program, is very common but needs to implement in the program of the industry. Moreover, it was suggested that the quality transformative view is less emphasis on quality assessment overall methods. This was good practice for quality management in hospital and tourism education. The approach of total quality management needs to implement within higher education.

2.11 What is ISO?

The abbreviation of ISO is an international organization for standardization. As, ISO is not an international organization for standardization, as it is thought. Because in different languages this standard has different abbreviations. For this reason, a word for all languages this common abbreviation was invented from the Greek word isos (equal) (Ataman, 1992). ISO in Geneva 1947 was established in Switzerland. The ISO

organization is known for quality certification in all sectors. ISO certification indicates that different sectors are offering their services under certain standards within their sectors. The purpose of ISO standards was to create an acceptable complete set of standards in all sectors- ISO standards are accepted by 165 countries. ISO organization and sectors are in a strong relationship that indicates to meet different sectors' global standards.

2.11.1 ISO and it's standards

The international organization for standardization (ISO) found in February 1947. It is a non-government organization. Its headquarters are in Geneva, Switzerland. Originally an acronym of the international organization for standardization, its global recognition name is short as “ISO” which derives from the Greek word “isos” meaning is equally related to ISO. In 2014-2015 national 165 national standards bodies whose expertise enabled the organization to share knowledge and develop a market-based international standard. These standards answer the global challenges (ISO, 2016a). In categories, its associate’s bodies are divided into different tasks. They are directly related to the development of standards. Member bodies were responsible to sell standards in their country. Corresponding members were responsible for observers related to developing and strategy meetings. They sell standards in their home subscriber members responsible for strategies and progress. They have no active role in standard development or selling. The technical committee was responsible for the development of standards (ISO, 2016F, 15).

2.11.2 What is the purpose of ISO?

The key purpose of the ISO organization was to create a globally accepted standard. After creating these standards published to the world for service and products

circulated between countries (Acardag, 2008). “ISO 9001 is listed as scope, information reference, terms and definitions, quality management system, product realization, management responsibilities, resources management, measurement, analysis and improvement” (Karakas, 2015).

Performance, efficiency, effectiveness, and quality are indispensable for educational institutions. The school is constantly working to achieve better results. This led to the development of various models. Now-a-day competition between institutions is very high. Each educational institution works hard to differentiate itself from the remaining institutions. In this competitive environment following properties must have in educational institutions.

1. High morale
2. Programmed and planned working system
3. A dynamic structure
4. Customer focus works
5. Unity in advising and setting goals
6. Reliable and quality workforce
7. Implementation of participation
8. The computer-based system of study
9. Awareness of responsibility
10. ISO 9001 certification develops quality in an educational institution.

Certification provides the following advantages to an institution of education.

1. Customer satisfaction increases.
2. Cost is reduced
3. Increase market share

4. Productivity and profit increase
5. Providing effective management increase internal communication
6. Educate students more effectively
7. Achievement is better controlled and monitored
8. Employees are happy

Now-a- day's institutions of education aim for a good internal organization. This helps realize these objectives. Certification is a document that is taken from the owner of the institution to enhance productivity and quality of service in educational institutions and also enhance the much better image in the sector for the customer.

The educational institution used certification for:

1. Controlling works
2. Determine of authorities
3. Responsibilities and duties
4. Planning about work and education
5. Internal audits

Principle, that focuses on doing what you write, and writing what you do to enhance the quality of an educational institution. Moreover, this principle is an essential requirement for ISO standards. Now a days some institutions of education show a lack of writing documents and reporting. Especially when talking about educational institution this lead to unsuccessful practices. In educational institutions, missing documents are a common problem in an information system. Students mean responsibility an educational institution has thousands of students. These responsibilities should be carried with trust and quality. This is the key component of success. If an institution wants to provide a quality service that institution needs a

quality infrastructure. This infrastructure can be provided by the standards of ISO. The advantages of ISO 9001; 2015 are as follows.

1. A management system is institutionalized
2. Suitable physical spaces for students are made in the institution.
3. Academic achievement is achieved
4. Living habits in education are in line with quality standards
5. Improved the system of documentation.
6. The system operates on its own without common to other people from outside the institution.
7. Improve internal communication, positive cultural change develops quality understanding, and observation as well as enhances productivity (Celik & Olcer, 2018).

What is the process of ISO 9001:2015? The answer to these questions leads towards the following steps: Prepare your organization/ institution after that gap analysis then project plan after that training is necessary then documentation after that improve and used the QMS, internal audits and finally registration of ISO (ISO, 2015).

2.11.3 ISO 9000

ISO 9000 is a well-known certification of quality management in the world. ISO provides a baseline in which institutions/ organization judge their quality. At three-level ISO standards explain quality assurance. Level 1 that enables firms to service product, install, and design are ISO 9000. For engagement of institutional production applies to level 2 of ISO 9002 and level 3 applies to finding tests and inspection (Maguad & Krone, 2012). Certification is the procedure in which an organization issues certificates and documents after fulfilling the needs and requirements of

technical, other regulations, and relevant standards (Aized, 2012). Moreover, certification of ISO means an organization has an equal quality to their peer (Maguad & Krone, 2012).

ISO 9000 is a mixture of 9000 and ISO. 9000 is the related series of quality management systems. So simply it is related to standards family that is important in an organization for maintaining the standards. ISO is defined as an international organization for standardization. Hoyle (2003) describes that certification of ISO is mostly used by third parties through an independent checking agency. This audit of the organizations or institutions against the standards of ISO 9001 requirements that are valid for three years. Initial certification based on half-year or year inspection audits. As ISO certification 9001 is not based on product-oriented standards and good quality products. They do not hold any specific requirement of product they only focus on process and management.

In educational institutions worldwide ISO 9001 becomes a famous choice for quality management systems. In the last two decades, in mid-1995 in the whole world, just four schools were accredited by ISO. The most present movement of quality management systems was adopted by educational institutions around the late 1990s. A lot of educational institutions in the United States, Canada, Austria, Singapore, and Switzerland implemented ISO 9000. In the United Kingdom, then later other countries like Europe finally Asia, and the USA followed it. (Thonhauser & Passmore, 2006). ISO 9001 standard determines the quality management system in an organization that meets the customer requirement. It is a strategic, managerial decision that implements standard that focuses on quality, which led to higher satisfaction of the customer but also improves the effectiveness and efficiency of the process for continuous improvement. In many countries, the public sector has adopted ISO certification to raise

focus on results and enhance public sector performance (Macharia, 2010). The public sector is given instructions via certification to increase performance (Calvo-Mora et al., 2006).

2.11.4 Basic conception

The core of ISO is a process-oriented approach connected to the PDCA principle. Plan-Do-Check-Act, sometimes known as PDCA, is a cycle. ISO 9001:2015 implementation of all types of organization to plan, conduct resources guide business institutions improve and how to tackle the possible opportunity and risks.

2.11.4.1 Plan-Do-Check-Act (PDCA): The cycle of PDCA is one of the methods used for improving the quality management system successfully. It's famous with the name of plan does check act cycle. It became popular by US American certification, a pioneer in QM, and physicist Edward demining the middle of last century. It's already become part of ISO 9001, 2000.

The cycle is divided into four steps:

i. **Plan:** For transformational, the starting point is to plan it.
ii. **DO:** Expected and implemented planned activities.
iii. **Check:** Every activity needs monitoring and control to assuring correct application.
iv. **Act:** For satisfying on-track actions are conducted if adjustments or change is needed.

Hussain, Eskildsen & Edgeman (2018) added that multidisciplinary fields such as social sciences, engineering, behavioral sciences, and management sciences contribute to research addressing the certification of a quality management system. Fonseca et al. (2017) added that 101 scientific articles were published between 2012

and 2017 on this topic (Karapetrovic, Casadesus-Fa & Heras-Saizarbitoria, 2010). Added 30 empirical research studies researching ISO 9001 standards impact. Furthermore (Jain, & Ahuja 2012) added that ISO 9001 studies and investigations focus on barriers, management issues, and customer orientation implementation certification advantages. According to ISO 9001 (ISO, 2018), 1,059 thousand organizations have certificated and implemented QMS. Thonhauser (2008) added that ISO 9001 QMS provides a HEIs quality framework without changing operates of the institutions process.

As institutions adopted ISO 9001 QMS, it is mainly expected that employees fed well satisfied with their performance and jobs as well as do their best for the institution. Employee satisfaction describes how individuals are perceptive about benefits and rewards they get or it is an attitude of employee individual perceptive about benefits and rewards they get (Tan et al., 2011). Moreover, employee satisfaction is job satisfaction, individual performance or employee performance is related to job performance or employee performance (Carlos et al., 2014). Hamid & Nordin (2001) added that employee performance is the contribution of physical and mental activity of individuals to complete the task. Osakwe (2014) defines that satisfied and motivated staff will do their best to achieve higher education objectives and goals. Othman et al. (2017) explore the effectiveness of a quality management system based on employee satisfaction employee motivation and employee performance.

2.11.5 Definition of ISO 9000

The international standard ISO 9000 is a non-specific quality management system and set of written guidelines that can be implemented for the product and services of any organization (Kantner, 2000). For getting registration to these standards documentation is essential for four levels including quality manual documentation,

documenting instruction related to procedure and forms, and finally supporting information for documentation. When the institution implemented all quality standards, a third-party audit performance of the institution. Check and compare with the standards of ISO 9000. Institution success depends upon audits **(**Harding et al., 2000). After successfully certification of standards of ISO 9000 it ensures the customer that its product and service are the same as ISO 9001 mentioned (ISO, 2000).

Table 2.1

Historical Background of ISO

No	Version	Structure	Detail	Elements
1	9000:1987 The initial 1987 version (ISO)	Same as BS5750 standards	The language of this version was influenced by existing US defense military standards.	Twenty elements conform with the overall procedure of management, which was the original intent.
2	9000:1994 (ISO)	Version break practices had somewhat concluded the use of 1987 standards.	Emphasized quality assurance preventive and continuous actions of compliance with documented procedures.	By self-load procedure implement the requirements of ISO. The improvement process is difficult, especially for all environments.
3	9001:2000 (ISO)	It places the concept of process management	Emphasize the documented procedure if clear provided that the process was working well. Customer satisfaction and continuous improvement are explicit in this version.	Eight core quality principles, designed for a common foundation related quality management was also introduced.
4	9001:2008 (ISO)	This version of minor amendments only	Clarifying prevailing requirements and improvement of approach.	Five main clauses with 3 key clauses
5	9001:2015 (ISO)	Launched form standard up to date, reflecting the good practices of quality	Common-level structure integration with ISO	Seven clauses

	management while some requirement is tightened.	management standards.

Note. (Khan, 2010; ISO, 2015)

2.11.6 What are standards?

Standards are defined as procedures and approaches to institutions/organizations for meeting customer expectations. Standards are fundamental and influence everyone's life. Standards endure common vision and understanding as well as terminology between the institution and customers to corporate mutual trust (ISO, 2016f). The standard has different intentions and purposes like processes or services, a specific degree of quality interchangeability, and capability (ASQ, 2016a).

2.11.7 Who uses the standard?

Institution, organization profit-oriented or not, non-governmental, governmental can get benefit from appropriate standard implementation. Furthermore, standards provide clear direction and procedure for managing toward main purposes. Standard has a broad scope as its meets the customer requirement. Another benefit of the standard is the document in case of any lost case of an employee who holds specific knowledge (ASQ, 2016b).

2.12 ISO in the Field of Education

In college for the development of the education system, an essential element is QMS. Because of competition in universities, the need for ISO 9001 certification is enhanced. ISO QMS defines quality policy, objectives, and achievements (Van den Berghe, 1998; Pokorni, 2004; Roszak, 2009; Sarbu et al., 2009; Gamboa & Melao, 2012). Recently, all over the world higher education institutions progressed in a quality

management system but improvement takes time for the best result, there is ISO 9001 QMS. There is an IWA-2 guideline for the implementation of ISO 9001 in educational institutions ISO 9001 (ISO, 2009; Roszak, 2009). There is an IWA-2 (international workshop agreement) (ISO, 2007). The main purpose was to confirm the effectiveness of the quality of education institution QM for service and information for students and continuous improvement.

2.13 Benefits of Implementing ISO 9001

The benefit of using standards for government, business, and society. Society in case of involvement of the customer and other stakeholders in the process of development of standards by the committee of ISO on customer policy. Government expertise and especially public policies for specific regulation. Integrated standards in national law and global requirements incorporate a more global attitude. It also proves the production of business. Furthermore, it also provides a guideline for increasing productivity for assessing a new market (ISO, 2016e).

Balague (2007) defines the rating out of 5 as fellows for the reason of the implementation of ISO 9001. Improve the quality of services of a library (4.1), strategy, related to a quality issue in university (4), improve library system of work (3.8), and improve library organization (3.7), ISO 9001 prestige (3.6), user expectation and requirement (3.4), requirements of ministry educational bodies (2.5), implementation of ISO 9001 in other libraries (2,0). Africano et al. (2019) added the ISO 9001 implementation quality management benefits in higher education institutions. Results show that benefits include improvement in student assessment, improvement of satisfaction of students, implementation of leader competencies, improvement of quality of teaching, improvement of confidence of stakeholders and other students.

Carlos et al. (2014) describe that employee satisfaction improves through the implementation of a quality management system.

Table 2.2

Benefits of Applying the Quality Management Model in Higher Education

Model	Definition	Benefits	Limitations
ISO 9001 Series	Generic international quality management standards related to continuous improvement. Its elements are a regulatory requirement and customer quality achieves continuous improvement and increases customer satisfaction. (Brookes & Becket, 2007).	Student enrollment working conditions improve within interdepartmental and staff satisfaction can achieve. (Shutler & Crawford, 1998; Singapore, Sohail et al., 2003; Malaysia).	In universities, scientific control is less achievable than manufacturing. (Shutler & Crawford, 1998; Singapore, Sohail et al, 2003; Malaysia).

ISO model is related to faculty morale, customer satisfaction, resource allocation, budgeting improvement, student enrollment improvement of interdepartmental working conditions, and reward system (Brookes & Becket, 2007). Ciampa (1992) describes that both approaches are important for the implementation of QM. The system approach focuses on inspection and monitoring procedures, and the process that is a process-oriented approach. Moreover, ensure conformance to documented standards and specifications. The humanistic approach, emphasizes leadership, management, planning, teamwork, customer focus, conformance to specifications, standards, training, and education. Standards of ISO 9001 can be both internal and external benefits. Internal benefits include improvement in the definition of the work process:

1. Enhance engagement of people

2. Higher confidence in the institution
3. Better guidance
4. External benefits
5. Better response to customer requirements
6. Improved customer relationship
7. Reduction in complaints
8. New market assesses (Fonseca & Domingues, 2017).

Zaramdini (2007) describes the following benefits of ISO 9001 certification. Internal benefits include quality and product improvement, improve efficacy and productivity, better awareness about quality, improvement of the work environment, and better customer service. External benefits include fewer customer audits, enhanced audits that enhance customer satisfaction, competitive advantages of improvement, expansion of the international market, and quality enhancement.

2.14 Critical Success Factors

Several research studies focus on the QMS implementation of critical factors, some studies are as follows. The critical success factor determines that QMS successfully implemented in universities. These critical success factors determine quality management system efforts during implementation. A meta-analysis, conducted by (Sila & Ebrahimpour, 2003; Abdi et al., 2008; Sila, 2007; Sila, 2002; Seetharaman et al; 2006) and describe that quality management, critical factor such as employee satisfaction, customer focus, top management, leadership commitment, process control, social responsibility, information and analysis, process management, employee empowerment, human resources management, continuous improvement, training, supplier management, quality assurance, employee involvement, service design and

product, strategic planning, benchmarking and teamwork in all studies these factors were common. Anderson et al. (1994) describe that seven factors were reduced based on the Delphi method which was learning, process management, continuous improvement, customer satisfaction, visionary leadership, and external cooperation. Asif et al. (2013) finding showed that process evaluation and control, stakeholder focus, vision, analysis, measurement, resource allocation, leadership, and program design was the key critical success factor in the application of quality management at universities. The finding has implications at the micro, macro, and meso level of universities. With globalization and competitive area flow of information have changed radically. Many institutions focus on customer needs, satisfaction, sustain quality, and competitive advantages of products and services.

2.15 Certification to ISO Standards

Certification is the process that fulfills the requirement. Certification is time-bound and given through independent bodies. It serves credibility for specific requirements and expectations. ISO develops many standards which prescribe a certification process. In the 2014 distribution of certification particularly of ISO 9001, more than 10,000 organizations are certified to ISO 9001.

2.16 ISO 9000 in Education

Education institutions now-a-days need a market-based standard like ISO 9000. There is a procedure from ISO for changing the global environment and dimensional in minimizing resources (Welch, 1998). Moreover, universities face a lot of pressure from institutions and the state (Peters & Wills, 1998; Moreland & Clark, 1998). ISO is being implemented in Thailand private schools (Ayudhya, 2001). United Kingdom private schools (Garbutt, 1996). Primary schools, colleges, and universities (Moreland &

Clark, 1998) vocational in Hong Kong (Kin-Keung Chan & Lai, 2002). Nowadays, many educational institutions aim to receive ISO quality management system certification. Certification provides many educational advantages in the market. Special efforts have been made to receive quality certification ISO 9001. We can say that ISO 9001 has an essential place in all sectors. When services and products of an institution are appropriate for the customers, these standards increase satisfaction and quality (Celik & Olcer, 2018).

The application of ISO standards has the following benefits for educational institutions.

1. Strengthen the image of a brand or corporates.
2. Enhance the image of a brand or corporation
3. Enhance the number of customers and target audience
4. In all sector completive advantage
5. Better relationship with suppliers
6. Positive steps for culture change
7. For management more effective
8. Raising awareness among all employees
9. Development of the system of documents
10. Being consistent
11. Being systematic
12. Enhance productivity
13. Minimization of costs
14. Providing loyalty and customer satisfaction
15. Successful control
16. Minimizing error rates
17. Successful final controls

18. Adequate record-keeping
19. Institution positively influence
20. Produce senior management
21. Determination of responsibilities
22. On the customers and staff positive image leave
23. Time effectively used
24. Elimination of deficiencies (Celik & Olcer, 2018).

Papadimitriou & Westerheijden (2010) found that the quality management system ISO oriented fruitfully adopted in all units only in three types of pressure are present (mimetic, coercive and normative) high level of response rate and these results show that in Greek higher education quality movement at a micro-level. Oduor (2014) added that ISO certification positively affects the financial performance of public sector institutions. Moreover, it was found that the financial performance of public sector institutions increased after the ISO certification period. There was a significant reference (p-value=.029) between ISO certification and the period after the certification of ISO (p-value = .004) and public sector institutions financial performance. ISO 9001:2008 has a positive influence on teaching through staff service delivery such as internship, course allocation, lecture notes, course outlines, attendance, timetable, and staff lesson attendance (Andiva, 2018). Total 1,036,321 certification issue for ISO 9001 (2015 including 4190) a slight decrease of 0.2% on last year. This modest decline can be the result of obstacles regarding ISO 9001 requirements. Worldwide total 1,519,952 certification issue, in 2015 compared to previous year 1,476,504 and 3% increase (ISO, 2015; Gopal, 2017). In education 955 certification issues (ISO, 2020). The study revealed that the benefits of QMS in higher education institutions in Angola included improvement in teacher competencies, quality of teaching, student

assessment, student satisfaction, improvement in stakeholders, and confidence of students (Africano, Rodrigues & Santos, 2019).

2.17 Role of Educational Institution

Numerous institutions started higher education programs on ISO quality management awareness its implementation, inspection, and auditioning Punjab University, Lahore launched a program on quality management and established a separate institution on quality management named an institute of quality and technology management (www.pu.edu.pk). The institution also offers different courses and degree programs up to Ph.D. in quality. In the private sector under the excellence of Dr. Kamran Moosa PIQC was the pioneer in Pakistan. It started courses on ISO quality later in the collaboration with the superior university of Pakistan and offered courses on quality and related subjects. This provides help in the success factor for ISO implementation in their institution. Ansari, Fiss & Zajac (2010) concluded that government should focus on strengthening the supervision and improving ISO 9001 standards, audits which are based on enforcement schemes and establishing a proper legal framework. As well as concluded that the ISO certification option for an academic institution is an optional choice, because of ISO global reputation. So, (AACSB) choose ISO to management certify its system of quality.

i. **Role of certification bodies:** Five accreditation bodies work under Pakistan national accreditation council across Pakistan **(**a) Certification Services Pakistan Pvt Ltd, (b) SGS- Pakistan, (c) TUV Austria, (d) Bureau Veritas Pakistan, (e) ACS Registrar Pakistan, (www.pnac.org.pk).

In Pakistan, 37 other certification bodies operate independently. Under Pakistan such as TUV Austria international accreditation. All these play important roles in the growth of ISO in Pakistan.

ii. **Role of ISO itself:** ISO played a vital role in providing awareness and associated benefits across the globe during the last decade. Its different programs provide a guideline regarding implementation. It also published books, magazines, facts, videos, sheets, and success stories on related topics. All these create interest, awareness, and better help for implementation.

2.18 Why Quality for Universities?

A world in which universities are changing dramatically. The cultural, social, political, economic, and technological systems change consequently. For community development, quality of life is responding compelled these changes. One is fasting growth in information and knowledge in which data and communication storage. Another growing change is based on service industries which require problem-solving, thinking, and communication skills. Moreover, another growing change is related to the transitional economy global. Lastly, there are continuous demands for accountability and transparency in education. Today many universities face common challenges like spiraling tuition fees, skyrocketing, operating costs, student and public demand for responsibility and accountability. The reformation of universities needs a quality management model for the unique needs of academia. There are many studies on the application of model and quality management theory application for research in universities.

Quality management in universities is the warmest area for the activity of research. Moreover, it is a significant field for research. Quality management is the

paradigm that is based on different higher education inputs approaches, accreditation, and assessment approach. In this way, these reforms play an optimal contribution role. In short, quality improvement is prescribed as a process of continuous improvement (Maguad & Krone, 2012).

2.19 Accreditation

An institution's or program's status is confirmed or approved by accreditation (Proitz, Stensaker & Harvey, 2004). Mostly, two levels of accreditation are carried out at the program and institution levels. In USA professional degrees, certifications and licenses are required for employment. In South Africa, academic and program audit at institutional level accreditation is required in exceptional cases certification needed for practice. Lawrence & Dangerfield (2001) define general and institution accreditation as the first type of accreditation and the second is professional and program accreditation. General accreditation is related to general standards of quality in which the institution is accredited. In professional or program accreditation specific colleges or disciplines like architecture, education, business, pharmacy, and engineering within the university are accredited. Accreditation checks the academic program of institutions. Standards and criteria are developed by accreditation bodies that are supposed for the institution to meet them. By passing the time accredited bodies visit the institutions and give evaluate the standards that accredited bodies made. A deficiency that an accredited team points out or no accreditation, sometimes giving them time to institution to overcome the deficiency. After a fruitful accredited institution is acceptable nationally to deliver the degrees, and fund operates the institution successfully (PEC, 2007; Lenn, 2003).

Accreditation at the level of instruction has been recently introduced in Netherland with a clear framework and emphasis on quality (Schwarz & Westerheijden, 2004). The importance of accreditation was also realized by the Singapore government to higher education maintaining the quality and launching (SHEAC) for faculty members, teaching facilities, qualification, curriculum, and monitoring (Davie, 2006). External stakeholders used accreditation for quality control funding agencies, government and quality assurance took higher education institutions for the fulfillment of minimum standards for IT facilities, libraries, curriculum, etc. (Eaton, 2000). Accreditation needs to meet higher education minimum standards (Harvey, 1999). Institution and program accreditation start from self-evaluation. Self-evaluation report based on stakeholders such as faculty, funding agencies, government, students, alumni, administration, and staff. This report is very helpful for accreditation bodies for peer review (Schwarz & Westerheijden, 2004).

2.19.1 Malcolm Baldrige National Quality Awards

Malcolm Baldrige National Award is related to the United States of America and is the highest performance excellence award that gives accomplished by (NIST) national institute of standards and technology giving the president the best organization for fulling the criteria. Intended as the best performance performing by an organization, it was initiated in 1987. In 1999, health care and education categories were included in it. In six categories maximum of eight awards can be given annually. In Healthcare, small business, nonprofit services, education, and manufacturing till 2008 seventy-nine awards have been forward to eight educational institutions. According to the Baldrige quality award, many educational organizations have started to evaluate their performance against it (Lau et al., 2004). The key focus of this award is customer satisfaction (Doerfel & Bruben, 2002). In 2001, the Baldrige awards were got by the

University of Wisconsin-shout for the first time in education. Iredell-Statesville school also gets an award in 2008 (NIST, 2010). A bridge is considered the most powerful catalyst for total quality. The following categories are included in the award criteria. Strategic quality planning, leadership, customer focus, human resource development, management, and analysis. In the management process quality and operational results are managed. For education, the Baldrige criteria 2005 have seven key categories and also included many subcategories, these were summarized. The weightage given by all categories was 1000 (NIST, 2009).

Ruben (2004) described that the main program goals are to:

1. Excellence identification of the practice of the organization
2. Recognize the organization that displays these practices
3. By exemplary organization promote sharing of information
4. For practice and principles encourage other organizations which lead to organizational excellence.

2.19.2 EFQM Model

Non-perspective framework EFQM excellence model that is based on people, customers, society, and performance are achieved through strategic people, leadership, resources, partnership, and process (Lau, Zhao & Xiao, 2004). From 1991 twenty-eight countries adopted the EFQM excellence model for diagnostic evaluation and improvement of the organization. Recently in 2003, this award suffered many notifications and changes. Many awards of quality were designed for business organizations only. Public sector organizations were adopted as a tool, not for quality diagnosis. There was also a new revised version available and a separate award. Category of awards including education and health care (Saraiva et al., 2003).

Model of EFQM excellence based on nine criteria, the total weight was caring 50% of the scoring scheme and framework divided into enablers and results. Enablers' criteria that more divided into twenty-four sub-criteria. Then criteria are divided into eight sub-criteria. In addition, enablers based on encompass results and university achievements (Sheffield Hallam University, 2003). In addition, (Calvo-Mora et al., 2006) added that in the EFQM model enablers' role is significant for achieving desired results and organization effectiveness.

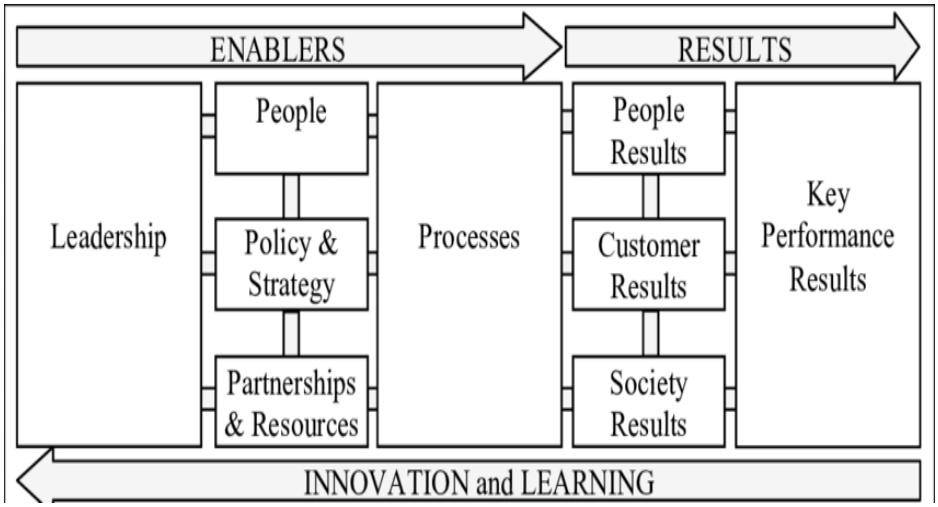
In 111 institutions of Spanish, this empirical study was carried out.

EFQM model has the following principles:

1. Results orientation
2. Partnership development
3. Customer focus
4. Corporate social responsibility
5. The constancy of purpose and leadership
6. Innovation and improvement, continuous learning
7. Fast-based process management and process.

Figure 2

Business Excellence Model EFQM



Note. (EFQM; Evans & Lindsay, 2005)

Innovation and learning are emphasized at the bottom, i.e. for achieving excellence by revising the process of enablers. For getting excellent results for society, performance, customers, and people are attained through the process of driving policies of leadership, partnership, resources, and strategy that are delivered through people (EFQM, 2003). This model doesn't very much popular among academicians and did not receive support from higher education because of business-like terms and is closely associated with the business. Challenges like globalization in higher education and many other institutions adopted models like the EFQM excellence model. Higher education institutions in the Netherlands also adopted the EFQM model. Seven higher

education institutions in the Netherland develop a version that is related to EFQM developed by HBO- An expert group that translated into seven languages and is very popular (Van Kemenade, 2004). Numerous authors investigated EFQM for successful implementation in a higher education institution for the drive of teaching, service, and research (Van Kemenade, 2004 & Khan, 2010).

2.19.3 Prime Minister Quality Award and Business Excellence Model of Pakistan

Prime Minister Quality awards are launched by national productivity organizations. Services and manufacturing organizations encourage to improve their management system, and productivity, enhance competitiveness and achieve business excellence. Moreover, NPO launching different session that provides awareness regarding PMQA in the country. The PMQA criteria focus on the total system of performance management and continuous improvement. The model is a generic and non-perspective framework for performance improvement. In addition, it is an outstanding tool for self-assessment.

Framework implementation improves the result of effective, strategic goals, improves communication and productivity as well as presents the best organization annually. Four levels recognize under the award. First, recognize level based on scoring 301-400 out of 1000 total commitment of business excellence through quality management achievement in business excellence includes a score of organization 401-500. Third level based on 501-600 scoring of organization Pakistan excellence prize winner. The fourth level is based on organization scoring 601-1000 related with the top winner group getting the best organization award that is awarded by PMQA award. The PMQA framework is based on seven criteria, strategies planning, workforce, leadership, process management, customer focus, knowledge management results measurement, and analysis. It is adapted according to the environment and local needs.

Moreover, PMQA criteria emphasize categories like process management, strategic planning, workforce, and customer focus. Results improve automatically what organizations are supposed to be improved and strengthened (Khan, 2010).

2.20 ISO 9001 Quality Management Standard

It provides a framework in which nothing is missing out, like who is responsible for where, why, and what everyone is very much clear (ISO). In October 2002 the ISO approved the guideline for implementation in the education sector ISO 9001:2000 which facilitate education institution to provide education conformance and service with ISO 9001:2000 (Rasool, 2010). All the above model are internationally reputed but doesn't tell about the implementation of QMS. They are generic. ISO 9000 standards give proper guidelines about implementation in the form of ISO 9001 model requirement adopted for the study.

Table 2.3

Quality Management Model in Higher Education Institution

Mode	Definition
TQM	An approach that is comprehended in nature that needed all participants' contributions for long-term benefits for the whole society.
EFQM Excellence Model	Nine criteria non-perspective framework suitable for all organizations to assess programs toward excellence.
Malcolm Bridge Award	Performance excellence framework which used by the organization for performance improvement criteria based on seven categories.
	Market focus and customer; strategic planning, knowledge management, process management, human resource focus, result, leadership, measurement analysis, and knowledge management.
ISO 9000 series	The international standard for quality management systems is related to continuous improvement with the help of preventive action. Elements are achieving customer quality, continuous improvement, and regulatory requirement efforts made to enhance the satisfaction of customers (Becket, & Brookes, 2008).

2.21 Seven Quality Management Practices

Quality is defined as the "degree to which inherent characteristics of objects fulfill the requirement" (ISO 9001:2015, 23). The object defines as examples, services, products, processes, and other products, of an organization without any transactions taking place between customer and organization (ISO 9001:2015, 26), interested party means a person or organization that can affect by perceiving itself as affected by activity or decision (ISO 9000:2015, 16). Interested parties describe only as groups or persons

who have an interest in the success or performance of the organization. ISO 9001 standards are based on seven quality management practices, which provide a guideline for creating sustainable value for the customer.

Quality management principles provide direction for the people making documents for ISO 9001 standards for all stakeholders that are interested (Nyuk, 2015). These practices are reviewed continuously by the technical committee, and international experts of ISO/TC/76, responsible for ISO 9001. Its scope is the standardization of QM (ISO, 2016d; Sickinger-Nagorni & Schwanke, 2016). The quality management principle establishes the direction for the people for documenting and establishing the ISO 9001 standards for all stakeholders that are interested (Nyuke & Gasva, 2015). Stakeholders include HODs, teachers, students, and the director of QEC (Khan, 2010).

2.21.1 Customer focus: It deals with customer expectations and the need to maintain and improve the relationship with the customer, which leads to improving the long-term success of the institution. In an institution, the customer is not responsible for success. All interested parties are directly or indirectly affected (Sickinger-Nagorni & Schwanke, 2016). In the educational setting, customers could be parents, students, future employees, or other educational establishments. Customer focus extended to risk and opportunities that affect the conformity of services and projects (Abuhav, 2017). The educators and those being educated, those teaching within universities, and those studying there. Faculty and the students are the internal participants. External customers include students, government, industry, and parents (Pereira & Terra Da Silva, 2003). Robinson & Long (1987) classify the customers in primary, secondary, and tertiary, in accordance with what they understand to be an order of relevance. To them, the primary customers are the students, the secondary customers are the education

authorities and employers and the tertiary customers are the validating bodies, ex-students, families, employers, etc. An external customer is also essential for the final product and services of the institution. Both internal and external customer is important (Besterfield et al., 2004). The student's role in the educational process is multi-faceted which makes them a unique customer. Education is a transformation process where values addition takes place to the student's knowledge and skills. Students, unlike normal customers, are very much a part of this transformation process where values addition takes place to their knowledge and skills and at the same time, he is a customer too. Normally a customer is not a part of the service process (Evans & Lindsay, 2005). Secondly, a customer, who can pay, avail of the services or the product but in the case of the student, despite their ability to pay the fee, they are only admitted when they qualify. Admission is open to all but qualified ones are admitted. Thirdly the student does not pay for their education. Other stakeholders like parents and the government pay partially or wholly for their education (Sirvanci, 1996; Galloway, 1998). Lastly, students are continuously examined for their learning but in the case of normal customers, it is unthinkable to examine whether they deserve the product or services they purchase (Sirvanci, 1996). Some authors see the metaphor 'customer' misfit for the students as the word sounds too commercial in tone and recommend 'client' instead. The scanning of the literature shows several customers like students, parents, employers, society, and the government. Kanji & Tambi (1999) have divided them into internal and external customers and then again divide the two categories into primary and secondary customers' students, as educational partners are secondary internal customers while employees are the primary internal customer. At the same time, students are external primary customers, and employers, parents, government, and society as secondary external customers.

The requirement of customers is fulfilled through providing services. Staff is the essential party for the success of any organization/institution for its success or failure. Some author has taken the concept of customer satisfaction parallel to the quality measure (Besterfield et al., 2004). An institution needs to identify customer requirements, expectations, and characteristics and must identify their quality path for satisfying their needs and assess their level of satisfaction (Sakthivel & Raju, 2006). Customer-related measures and communication are important measures for customer focus in the institution (Adebanjo & Kehoe, 2001). The need for quality improvement is important for every educational output (Arcaro, 2006). Identification of students' needs is important to enhance quality education (Farrar & Crabtree, 1999).

Madan (2007) identifies four ways of getting feedback that includes getting feedback through informal conversation and discussion with students' formal qualitative session such as the focus on the group, discussion, suggestion, committees, and questionnaire (2007, p.214). It was also very essential to build a good relationship with students and respond to their complaints (Baldrige National Quality Program, 2008). The voice of customers is very important for the educational institution must need to profit for society. Following are the key requirements of the stakeholders of higher education (Williams, 2004, p. 130) students, qualified faculty inside and outside, classroom, physical safety, good advising, small classes, extraordinary student services, excellent planning opportunities, cutting-edge technology for learning, practical learning experience, and opportunities to give feedback.

i. **Product:** The most important two terms are customer and product, according to (BSI, Quality Assurance, 1995) added product of education and training is the enhancement of knowledge, personal development competencies of the students

learning is the result of a learning experience. All these definitions train audiences' notes on the application of BS EN ISO 9001 QMS.

ii. **Customer:** A customer is defined as a student, industrial body, or public organization purchasing the service from the institution. To distinguish students' raw material to satisfy customers, the label school leaver later labels as graduates. The process that enters into the process of teaching is carried out by the lecturers. According to the planned or designed syllabus. When teaching is complete quality control in the form of examination is carried out to know that students have learned what the course was designed for. Students who leave the institution or fail the examination are to be re-examined. This whole process is watched by the principal and dean. According to the BSI definition, stakeholders include local education authorities, government, funding bodies, parents, and employers. All physical material for running the institution such as building textbooks should also include in raw material.

iii. **Faculty:** Competitive, academic freedom, faculty development, resources, classroom, offices, equipped resources, reasonable workload, and designed for multiple uses. Alumni interaction with other alumni, consistent, information on current activities, institutional reputation, and inclusion in the important occasion.

iv. **Employers:** a student who has both personal and professional behaviors that ethical, opportunities to present business to a student, and workshop skills.

v. **Parents:** hirable skill, attractive level of graduates, safe environment for students, strong academic reputation, encouraging staff and faculty.

vi. **Community**: well-educated workers, community service, leadership, service, and involvement. Balance the needs of stakeholders and learners is an important challenge for educational institutions (Baldrige National Quality Program, 2008).

2.21.2 Leadership: Leadership is related to a mutual understanding that spreads in an organization. How single members can contribute to organizational/ institutional objects that are related to quality through hierarchies within an institution/organization. Top management includes the vice chancellor, deans, and director of QEC (Khan, 2010). The main aim of leadership is to fulfill the customer's needs and expectations. After that, determine a strategy that provides a direction for the development of a management system that will enable satisfying customer and market value. This process is ongoing. This process can be achieved through different means like market surveys, questionnaires, customer minutes of a meeting, and other areas of research (Abuhav, 2017). Leadership is the ability that motivates employees to work for achieving common goals. Executive management is responsible for demonstrating commitment and leadership to achieving a quality management system (9001:2015). Top management implements QMS for continuous improvement which involves responsibilities for implementing the following activities:

1. Update and define quality policy and quality objectives
2. Implement QMS in business process
3. Clearly define the roles and responsibilities
4. Provision of essential resources
5. Quality-oriented environment
6. Responsibilities and leadership toward employees
    1. Process-oriented approach
    2. Continuous improvement system
    3. Customer-oriented environment (Sickinger-Nagorni, & Schwanke, 2016).

Top management must need to show leadership rather than demonstrate just commitment (Abuhav, 2017). Furthermore, top management also ensures that resources

for quality management systems are available (ISO: 2015). It also includes management and personal resources. Top management is the decision-maker in the case of universities. It includes the president, dean, rector, board of directors, director, and other personnel of top management. The key challenge in universities is top management commitment (Trivelias et al., 2012). A quality management system without the commitment of top management could not be implemented (Mehfooz & Saeed Lodhi, 2015). In addition, in the adoption of ISO 9001 commitment of top management comes first as a challenge at the top of the list shown in numerous empirical structures (Al-Najjar & Jawad, 2011). Motwani (2001) describes that top management support for QMS providing through resources, planning, visibility, control, and monitoring. Sirvanci (2004) mentions that quality culture change through top management commitment, leadership, and knowledge is strengthened through the commitment of everyone, customer focus, continuous improvement, process focus, and factual decision-making.

Khan (2010) defines that leadership needs to be made QMS attractive through good communication, lesson learn through QM philosophies, and sufficient training. Top management should not focus only on mission, vision, quality objectives, and quality policies, but also focus on financial and human resources for achieving continuous improvement. As well as must have a very clear vision for the future. Kanji & Tambi (1999) describe that international quality standards and awards like ISO 9000 EFQM, and MBNQA have clear stress on the top management role for continuous improvement and creating a goal system for the performance of the organization. University top management must be aware of QMS and the involvement of employees and its stability (Bayraktar et al., 2008). Top management performance may include:

1. Conducing review of management

2. For communication of the QMS plan, a proper channel is essential
3. Development, implementation commitment, and continuous improvement of the quality management system with the help of a customer-centered approach
4. Proper check and balance delegating authority and responsibility
5. Developing mission and vision for quality objective
6. Review the plan of quality and follow up throughout the institution /organization.

Making proper arrangements for measurement and monitoring of the process of the institution or organization for attaining well-known policies for improvement and objectives of the quality management system (IWA, 2003; ISO, 9001; Hoyle, 2003; Khan, 2010). Gregory (1996) mentioned four dimensions for instructional leadership. First is true leadership that achieves the organizational objective with employee commitment, presents a cooperative and good image to the external world, for resource and process that is the role model. The second leader is related to those who are political and tactful in gaining support using resources in the institution for solving conflict to achieve objectives. Thirdly, leaders have good management skills for representing structuring, controlling, staffing, setting goals, handling costs of communication bodies, employee relations, budgets, information flow, external funding, and relation with validating and awarding bodies and employees. In the end, a higher education leader leads others in an academic style. Many recent kinds of research show that leaders play an essential role in the performance of the organization (Valmohammadi, 2011).

Kennerfalk (1995) found six main elements that are as follows:

1. Focus on the process,
2. Customer satisfaction focus,
3. Continuous quality improvement,

4. Management commitment,
5. Employee involvement,
6. Fact-based management.

2.21.3 Engagement of people: Engagement of people is related to the engagement and contribution of people within an organization/institution. All people must be empowered, competent, and involved in providing value. Using collaboration with other institution enhance total values that can be enjoyed by all parties. Using this way parties involved and collaborate in enjoying and sharing total values as a result of the creation process (Hum Sin Hoon et al., 2012). Moreover, the quality-oriented institution needs to engage resources for enhancing organizational performance. People engagement is related to the aim of creating the same vision and expectation in developing institutions.

The implementation of people engaged in the processes of ISO 9001:2015 all the persons in the department to perform their assigned responsibilities. The department needs its members to provide innovative ideas to give benefit the department. The functions of departments cannot perform without qualified administrations, lecturers, students, and heads taking responsibility for achieving goals. When people of all levels of the institution are involved in it. This enables them to use their abilities for institutional benefits people communicate with each other they understand and know the importance of activities. People's involvement enables to motivate people in internal communication, defining objectives, monitoring environment, responsibilities, and defining complete needs (Hoyle, 2001).

Engagement of people is important for creativity and innovation for support of the academic staff of the university. Without staff, the university cannot function properly. Planning and using staff talent are the main keys to success. Continuous

training and sharing a conducive environment. International Organization of Standardization (2011f) define people at all levels, their full involvement enables them to use the organization's benefits. The human resources of people contribute greatly to quality (Evans & Lindsay, 2008). Encourage them to change the work environment (Kim et al., 2011). The involvement of people is related to people commitment, quality culture, and also related to performance at the individual and organizational levels (Fang et al., 2008).

2.21.4. Process approach: "Education is the process of sharing knowledge to meet the need of society". Here some questions remain: what efforts of the public need to procedure them?

1. Emphasize impact
2. Develop individuals
3. Developed culture shift
4. Holistic embed sustainability
5. Focus on transformative education
6. Allow for inclusion and responsibility
7. Function across responsibility
8. Influence change
9. Foster innovation
10. Fit the needs and wants of the future.

Here need a process approach to make it happen. Predictable and consistent results can be accomplished more efficiently and effectively. The expected result can be achieved through interrelated activities and resource systems. A process is defined as an integration of material, people, tools, and resources in an environment for activities and valuable output for the customer (Storey, Killian, & O'Regan, 2017).

People engagement is essential for students' enrollment in an institutions. Educational institutions must need to improve and enhance good relationships with the public. The university can be managed relationships with either staff, work positions, or the public. It is closely related to management with activities that are linked with certain goals, and how staff and team members are engaged in processes to improve efficiency. There must be an appropriate provision of infrastructures like IT systems, buildings, transport, equipment, etc. the work environment of an institution/organization has many physical factors that directly influence the quality, efficiency, and effectiveness. These factors include heat, projective equipment, light, noise, ergonomics, hygiene, humidity, etc. there are no specific documentary criteria, but it's found inside practices, procedures, specifications, and contracts (Abuhav, 2017). Resources may be staff, human power, faculty member, financial resources like money, machines, and all supplies material that included organizing, scheduling, and controlling the tasks. For adequate ISO 9001 implementation in universities, the core requirement is resource management (Hussein et al., 2017). For effective and efficient development of all resources when needed. In practice, resource management is elated with collection processes that are directly related to developments. To define the customer requirement, students are essential to meet the quality criteria. The whole process, the people, product, and process are mobilized towards service delivery. The establishment identifies key activities that are essential in the process approach. Systematic management identifies what the requirement is essential to the process principle, it involves activities that use resources for achieving inputs into outputs (Balague & Saarti, 2008). Activities and resources are managed as processes for achieving desirable results (ISO, 2011f).

Hoyle (2009) added that the process approach is related to activities, objectives, and resources. In this way, the process approach can be measured in terms of results, costs, and opportunities (International Organization of Standardization, 2011). Kaynak (2003) describes that process management is positively related to performance.

2.21.5 Improvement: Successful organizations/institutions focus on continuous improvement. A successful institution must improve the process through a systematic process. It is a core attitude related to changing globalized world. If reactions are continuously monitored internally or externally for appropriate adjustment and successful processing. One of the key aims of the institution/organization is improvement. There are several ways to drive and identify improvement. All measured results need to analyze for identifying in which areas improvement is necessary or desired. Objectives and policies need to be set for improving the program.

The focus should be on relevant benefits and risks. Improvement can be small changes or new technology (Abuhav, 2017). It is important to plan, analyze, and monitor the whole process for customer satisfaction. Monitory processes and measures are important for customer satisfaction. One's feedback obtains and then analyzes and checks, whether to take corrective action. If need for corrective action for ensuring continuous improvement for achieving a high standard. Measurement of students and quality in the university is a very complex issue. Measure service quality of university uses a lot of measurement techniques. The most important thing is the use of measures (Kandie, 2019) met service quality the most frequently used model is the SERVQUA model. Improvement is the key objective of all systems of quality. It includes training and the skill of making more improvements. One of the main factors is staff training and their development (Kumar & Balakrishnan, 2011). Balague & Saarti (2008) added that ongoing improvement involves everyone like top management it also involves

workers and everything like process, tools, method, system, and data. Kaynak's (2003) PDCA cycle developed by Walter Shewhart contributes to the changing culture of an organization.

2.21.6 Evidence-based decision-making: The decision is based on the analysis of data and information. The effective decision is based on information and data to resolve the problem of quality education effectively and efficiently. Every decision is based on relevant, current, and accurate information and data. Every decision is based on data not feeling. Clear data and facts can help achieve goals effectively (Muryadi, 2018). It provides a high degree of certainty related to decision-making that leads to improving results. Analysis and collection of relevant data are very important for measuring the effectiveness and sustainability of the quality management system to identify opportunities for improvement. The analysis should perform with processes, customer, product conformance, and supplier performance. The institution/organization must measure and monitor the project characteristics that meet evidence conformity with acceptance of criteria that must be maintained (Abuhav, 2017). The quality evaluation is related to a systematic examination of the extent to which an entity is capable of fulfilling specific requirements (ISO, 1994b).

Decision making based on data and information. It also ensures that decisions are based on available data and information. Data on students and their performance, such as thing educational process depends on good and right decision making in education. An analysis is concerned with the availability of the timeline and usage of the data (Kandie, 2019). The effective decision is related to the analysis of data and information (ISO, 2011f). Accurate data collection is essential for analyzing data and information because results create a link between key measures and business performances (Evans & Lindsay, 2008).

2.21.7 Relationship management: To maintain the success of the institution manage the relationship with other parties. The educational institution maintains harmonious relationships and communication with the people to enhance the quality of education. The function of relationship in the implementation of quality education management is like a bridge that connects the public, and other institutions in a good way. The institution needs people as its agents to keep the institution's credibility and enhance human resources such as lecturers, students, staff, and other human resources (Iskarim, 2018). It is related to all external and internal links to improve understanding, communication, consideration of opinions, the trust which leads to better essential exchange (ISO, 2015b, pp.4-5). It is about expertise, open and clear communication, and joint project. Universities should have a relationship with their feeder. Universities and schools have a relationship with their stakeholders. Relationship with a community group is also undertaken. A good relationship with supplier organization. Supplier selection criteria supplier development and exchange of information (Kandie, 2019). Kaynak (2003) added that long-term relationships improve the relationship by minimizing the number of suppliers.

Quality management principles are the requirements. The knowledge of policies and procedures is what determines how successfully ISO will be implemented (Russo, 1995). Decision-making and problem-solving skills are used to examine the performance of human resources, which is related to procedural knowledge (Nair, 2002). If the educational institution wants to improve its quality even the quality management principle is very effective. These principles are essential because of their suitability and improvement for the quality management system.

2.21.8 Challenges According to statistics from the World Bank 2009-10 ministry of education, Pakistan spends 2.10% on education while the rate of literacy is 57%

(Economic Survey, 2009-10). Higher education in any country is like the blood and brain of a nation. Development and growth play a very important role. So higher education must be accessible for country individuals who could be professional leaders, scientists, or a scholar (MoHE_Strategic_plan, 2005).

2.21.8.1 Lack of awareness: Kothar & Lal Pradhan (2011) highlighted the challenge of lack of awareness. As it is mentioned by many parties that quality is not a theory or science it is a culture that should be lived. Moreover, awareness about quality, enhance confidence regarding QMS in organizations. Mehfooz & Saeed Lodhi (2015) added that it is starting and most important point for the implementation of quality standards. For further process cooperation and involvement of staff and faculty members is important for implementation.

2.21.8.2 Lack of funding: For training, resources, payment of certification, and external constants payment funding is needed (Arora, 1996). Because of financial problems, many certifications were discontinued (Zgodavova et al., 2017).

2.21.8.3 Lack of planning: Suleman & Gul (2015); Mobegi, Ondigi & Oburu (2010) highlighted the challenge of lack of planning. It is a starting point for any accreditation process.

2.21.8.4 Resistance to change: Any new implementation resistance to change is related to the level of opposition in university faculty members taking a change guarantee, especially when dealing with Ph.D. holders (Ahmed et al., 2006). Universities by academic different reviewers who weary about additional documentation about the development of quality assurance and quality system. Thus with several benefits and the establishment of a quality management system has focus, rather than seldom-used records, and each requirement documenting for a register's

visit (Stanislav & Walter, 1998). Resistance to change is stronger in the institution of education rather than in organizations because in education people themselves may not accept any type of criticism easily in their work and they consider themselves for the other. This may not lead to creating a new organizational culture and ineffective management for the implementation of quality management (Hussein et al., 2014).

2.21.8.5 Existence of accreditation: It is confusing for some universities to the implementation of a quality management system of ISO 9001 that will replace the present university quality management system. Accreditation will help track ISO 9001 in departments or universities that are thinking do not start accreditation and spend this endeavor thousands of dollars (Thandapani et al., 2011). Furthermore, universities can get competitive advantages with ISO certification in a continuing evaluating and fast-changing world that admires ISO certification. Hussein et al. (2017) mentioned that universities' QMS helpful for ISO 9001:2015 certification

2.21.8.6 Commitment of top management: Decision-making in universities is top management being a president, dean, rector, board of directors, director, and other top management personnel in higher education. A commitment of top management is one of the biggest challenges (Trivelias et al., 2012). Mohamed et al. (2015) added that without the support of top management universities cannot implement a quality management system. For the adoption of ISO 9001, many studies show that commitment of top management comes at the top barrier (Al-Najjar & Jawad 2011).

2.21.8.7 Time management: Dean, instructor, university staff, and professors are always busy and overloaded with administrative and academic work. Management is a real change, although multi-tasking is a part of their routine. The best way to tackle this challenge is by assessing the job to newly decided team members who are well prepared

and well trained for this mission. Universities must arrange proper training for staff and faculty (Hussein et al., 2014).

2.21.8.8 Resources availability: Human resources (faculty members, human power, and staff) as well as financial resources (like, material, money, and machines) which may include scheduling, organizing, and controlling a task, for ISO 9001 core requirement is resources management in higher education which contribute to greater implementation of ISO 9001.

2.21.8.9 Lack of proper professional training: Al-Najjar & Jawad (2011) added that staff performance training is very essential. Based on the training needs training is given to staff. Malik (2007) added that quality improvement is higher. Higher education is related to the quality of its teachers. The most challenging issue is the pre-service and in-service training of faculty members. For the implementation of ISO 9001 QMS lack of training is considered a challenge.

2.21.8.10 inappropriate university culture for implementation of quality management: Organization culture is a very essential and key challenge for quality management implementation (Corbett & Rastrick, 2000). Quality management employs cultural change through several strategies in universities. Usually, these strategies focus on internal audits, measurement, and information (Alalfy & Abo-Hegazy, 2015).

Figure 3

ISO 9001

Note. (ISO 9001:2015)

Table 2.4

Challenges to Implementation of ISO 9001

From the opinion of experts and various survey research studies, it can be concluded that in the implementation of ISO 9001 the key challenges were:

Key Challenges in the implementation of ISO 9001	References
Lack of commitment and involvement of top management	(Masters, 1996; Whalen & Rahim, 1994; Smith et al., 1994; Bohan, 1998; Baillie, 1986; Magd, 2008; Goetsch & Davis, 2010; Al-Najjar & Jawad, 2011; Trivelias, Ipsilantis, Papadopoulos, & Kantas, 2012; Mehfooz & Saeed Lodhi, 2015; Hesham & Magd, 2007; Horine & Hailey, 1995; Suleman & Gul, 2015; Kosgei, 2014; Salaheldin & Mukhalalati , 2009 & Ater & No 2013; Pratasavitskaya, & Stensaker, 2010; Hesham & Magd, 2007; Rosa & Amaral, 2007; Ali & Ali, 2012; Bounabri et al., 2018).
Lack of funding	(Arora, 1996; Suleman & Gul, 2015; Mishra, 2013).
Insufficient training	(Burril & Ledolter, 1999; Masters, 1996; Bohan, 1998; Whalen & Rahim, 1994; Horine & Hailey, 1995; Kosgei, 2014; Sahney, Banwet & Karunes, 2004; Bounabri et al; 2018).
Lack of resources	(Masters, 1996; Whalen & Rahim, 1994; Ariff, Zaidin & Sulong, 2007; Al-Najjar & Jawad, 2011; Mobegi, Ondigi & Oburu, 2010; Suleman & Gul, 2015; Mishra, 2013).
Poor and lack of planning	(Whalen & Rahim, 1994; Masters, 1996; Suleman & Gul, 2015; Mobegi, Ondigi & Oburu, 2010).
Lack of awareness	(Mehfooz & Saeed Lodhi, 2015; Smith et al., 1994; Bohan, 1998; Masters, 1996; Goetsch & Davis, 2010).
Resistance to change	(Hussein, Hammoud, Bazzi & Haj-Ali, 2014; Harris, 1995; Whalen & Rahim,

	1994; Masters, 1996; Bohan, 1998; Goetsch & Davis, 2010; Koch, 2003; Massy, 2003; Al-Najjar & Jawad, 2011; Goetsch & Davis, 2010; Smith et al., 1994; Koch 2003; Massy, 2003; Bounabri et al; 2018).
Existence of accreditation	(Thandapani et al., 2011).
Time management	(Hussein et al., 2014; Horine & Hailey, 1995).
Inappropriate culture for implementation	(Corbett & Rastrick, 2000; Alalfy & Abo Hegazy, 2015; Whalen et al., 1994; Masters, 1996; Mcabe et al., 1998; Burril & Ledolter, 1999; Smith et al., 1994; Bohan, 1998; Masters, 1996; Goetsch & Davis, 2010; Horine & Hailey, 1995; Kosgei, 2014; Corbett & Rastrick, 2000).

Hesham & Magd (2007) describe that the key challenge is the lack of top management understanding and involvement in ISO requirements for a quality management system. Another challenge is QMS effective implementation in organizational culture (Corbett & Rastrick, 2000). Moreover, quality management implementation utilizes several strategies to bring cultural change to universities. The strategies focus on measurement, information, and internal audits (Alalfy & Abo-Hegazy, 2015).

Rosa et al. (2012) emphasize that quality management is the first tool capable of providing a serious discussion about its demerits, merits its social and educational implications. Moreover, the commitment of the top management is the critical success factor within institutions for the implementation of ISO 9000 that directly influences the success. Additionally, from various opinions of experts and studies top-level management commitment is the key factor in the implementation of ISO 9001. Universities can apply quality management in teaching, learning, and research activities

(Voss et al., 2005). For overcoming the problems in teaching and learning in the implementation of quality management (Harvey & Willies, 2010). (Koch, 2003; Srikanthan & Dalrymple, 2007; Cruickshank, 2003; Meirovich & Romar, 2006) define other challenges in the context of universities:

1. Lack of staff, managerial responsibility, and quality management,
2. Absence of standards that reflect customer needs,
3. Conflict with academic freedom and research responsibilities and,
4. Difficulty in controlling teaching in universities due to different programs, delivery modes, sites of delivery, process, and control with personnel.

Overall in business journals and education journals quality management implementation in the service department of universities is similar to any other service sector. Voss et al. (2005) indicate that quality management can be beneficial for curriculum, teaching, and research. Its adaptation is required for an effective education system and process as many scholars have advocated. Pratasavitskaya & Stensaker (2010) describe the challenges for the implementation of QM in universities as lack of administration commitment, personal training high-level investment, resistance to change the little experience of team workers, and team leaders, and universities have results that are not sufficient enough. Rosa & Amaral (2007) mentioned that difficulty in monitoring the result of universities, absence of channel of communication, in the universities absence of several objectives and purposes, lack of internal competition, lack of committed leadership, and lack of participation of all universities member.

In educational institutions worldwide ISO 9001 becomes a famous choice for quality management systems. In the last two decades, in mid-1995 in the whole world, just four schools were accredited by ISO. The most present movement of quality management systems was adopted by educational institutions around the late 1990s. A

lot of educational institutions in the United States, Canada, Austria, Singapore, and Switzerland implemented ISO 9000. ISO 9000 movement first in the united kingdom after that followed by Europe and then Asia and USA (Thonhauser & Passmore, 2006). Thabet (2012) defines ISO 9001 in Egyptian universities as the most important reason that prevails among universities is the incompatibility with the ISO requirements. A bureaucracy that prevails among universities was a lack of courage, university leadership and their direction to create a culture, and a lack of awareness about different levels. Lack of training held by universities that how to apply quality management system ISO 9001. Ali & Ali (2012) confirmed that university leadership does not listen to the suggestions and opinions of employees, insufficient time for application, and different team members that apply QM ISO 9001. Ariff et al. (2007) define difficulties to measure performance indicators like process performance, program specification, service standard, process outputs and quality of graduates, misfit of focus of quality assurance, and university concern. The tradeoff between rigidity and creativity in student and teacher assessment. The intricacy between student enrollment, external decision and facility of resources, limited involvement of resources, research, and human resources development. Furthermore, (Edris, 2012 & Saeed, 2012) confirmed that lack of moral and financial incentives to participate in ISO, and poor communication between departments. Lack of continuous assessment of the university in ISO 9001. Wahid (2019); Ackerman-Anderson & Anderson (2010) added that the lack of people involved in the challenge for the implementation of ISO 9001 in universities. Siddiqui et al. (2011) conducted studies on the challenges and issues of professional development of faculty members. This is a comparative study of public and private universities in Punjab. Findings show that public university respondents

were not satisfied with activities of professional development. While private-sector respondents were happy with training and rewards.

2.22 Case Studies of Quality Management

Around the world, many universities implemented quality management systems. In this section, the implementation of a quality management system in the national and international level universities is discussed. Moreover, local research studies related to issues and the quality of higher education are also discussed. Highlighting the previous experience for their successful implementation of quality management because it's always good to learn from other experiences.

2.22.1 International Studies: International studies of education in which ISO 9000 is implemented.

2.22.1.1 The University of Wolver Hampton

Khan (2010) defines that many universities got ISO 9000 registration. The University of Wolver Hampton got whole university registration in 1994 which was the first university BS EN ISO 9000. After the same year university got a charter mark award. Staff 2000, ten schools, 2300 students, four faculties, six major service departments, and five campuses were registered at that time. University try to implement the philosophy of quality management of Crosby's error prevention, in 1989 for the right things. Because of the different nature of universities, the model of Crosby's zero defects was not completely achievable and applicable because it's an unclear process and product approach. For achieving quality important thing is to improve the process. An approach that is process-oriented ISO 9000 university decided to focus on it in 1991-1992.

It was planned by the university that the quality management system ISO 9000 with clear documentation procedure will improve the institution's market value and also provide fundamental for continuous improvement. Another important thing that encourages the universities to reach ISO 9000 is its competitor. In the UK FE college was the first who achieve registration. To develop the consensus and create awareness in 1989-1990 university start a discussion, debate, and orientation sessions on quality and related topics. A university preferred its people for improving the quality, writing instruction, and work instruction internal team added rather than fully depending on the consultant. A sense of ownership is created through this approach. For certification of third-party ISO quality management practices used. Many institutions in the USA, Europe, and India are ISO certified.

Van den Berghe (1997) defines the quality management implementation gap analysis as the first step toward existing management and ISO 9001:2015 requirement. Universities are allocating vigorous process, qualified personnel, resources, and committed leadership for the fulfillment of requirements that are implemented easily through ISO 9001. Customer needs and requirements must identify with the institution. It means customer satisfaction. Student motivation increase when they have set aims and goals (Armstrong, 2006). But this was time-consuming. Quality management documented system takes three years.

Quality management system implementation is as follows:

1. A clear view of roles, authorities, and responsibilities
2. About quality improvement good sense about initiatives
3. A clear perception of university objectives, and mission
4. Staff and academics have a good understanding
5. Continuous improvement of documents, design, and delivery

6. Staff responsibilities and a good understanding of rights
7. Procedure for improvement of complaint and scheme
8. Market profit for all personnel
9. Enhancing opportunities for training for all personnel (Khan, 2010).

2.22.1.2 The Oregon State University: Around the world pioneer university that implemented successful quality management was Oregon State University. They work in 1989 for five years on the project on quality management for implementation of recovering its procedures and services. In administrative and finance top management is fully obliged in the form of a team for quality management. Later, the scope extended to other academic and administrative areas such as curriculum development, teaching improvement, and the development of a research proposal was brought in the next four years. After implementation of three years, tangible results were noted. Quality management implementation at Oregon state university revealed that the team was essential for the application of quality management. At reporting time 85 process improvement teams were working (Coate, 1993; Khan, 2010).

2.22.1.3 Griffith University: Australia, Griffith University establishes a quality development system throughout the university (Meade, 1995). The quality management plan according to (Tang & Zairi, 1998) includes the following things.

1. For university quality plan leadership is the responsibility of the vice-chancellor and senior executive.
2. Quality commitment to all elements of the university everyone responsible for continuous improvement.
3. For support of quality management development of resources
4. At the operational level responsibility for quality management
5. Development of staff

6. Encouragement of quality management forms

For the mission statement quality principles and critical factors were important that including research, teaching and learning, institutional management, community service, information support, technology, and resource provision. These factors helped form the framework for a quality plan. In an implementation of each faculty form their community and leadership for quality improvement at the faculty level, the dean was responsible to charge the targets achieved within the time. Brainstorming was used for staff development for identifying strengths and weaknesses. Furthermore, stakeholder involvement is essential.

Celik (2018), Iraq

Conduct studies on the topic of the ISO 9001 effect of quality management on the institution of education. Results indicate that ISO 9001:2015 contributes positively in many ways for educational institutions like a clear understanding of regular operation performance. Helpful in achieving customer satisfaction through ISO 9001 practices. Moreover, focus on institutional goals and an effective work system.

Prskalo (2016), Central Europe in Vienna

Central Europe, south of Vienna, University of Zagreb, faculty of the teacher education complimented procedure of certification on March 24, 2016, for institutional certification according to the ISO 9001:2015. Certification was conducted through the prestigious certification board, Bureau verities. The faculty of teacher education was the first faculty of Zagreb University to have the ISO 9001:2015. It reinforces for further continuous development of all employees, further improvements, and enables all study programs and services of faculty to meet high-quality standards. Certification

facilities for infrastructure project finance through EU funds that increase the standards of work and study of faculty for the advantage of all staff and students.

Iskarim (2018), Indonesia

The study assesses the quality management system ISO 9001:2015 during Arabic language education. Results assist that ISO 9001; 2015 in education institutions produce graduates who are competitive, capable and productive at the national and international levels.

Kiarie (2020), Kenya

Conducted study on prospects and challenges of ISO implementation 9001:2015 in TVET institutions. Results reveal the key challenges of the high consult, massive requirements of documents, lack of clear understanding of ISO requirements, and the complexity of the process.

Indiya Mise & Obura (2018), Kenya

Conducted a study on the relationship between the performance of Kenyan public university organizations and the adoption of quality management systems. The outcome demonstrates that there is a positive relationship between the organizational performance of the public university and the use of an adaptation of a quality management system.

Njeru & Omondi (2016), Kenya

Evaluate the relationship between employee performance and the total quality management system in a public university in Kenya. Results show that there was a strong relationship between employee performance independent variable and the dependent variable (leadership, training, employee involvement, quality management system).

Donald et al. (2015), Kenya

The study focuses on the implementation of quality management systems' effects on the performance of public universities. The result shows that QMS implementation has a positive impact on infrastructure growth and student enrollment. The study focuses on public universities.

Vusa (2016), Kenyan

The result shows that there was a positive relationship between service quality and the quality management system of ISO 9001:2008 certification. Finding reveals that Kenyan public universities need to adopt ISO 9001:2008 certification.

Aamer, Al-Awlaqi & Alkibsi (2017), Yemen

Findings show that principles of TQM were practiced in the organization of Yemen to some extent. The low practice was an improvement and the high was customer focus.

Bsme,& Mte (2018), Philippines

Studies reveal that the external level of practices of the quality management system and level of awareness was at a moderate level.

Kigozi (2019), Uganda

The study highlighted the challenges such as misconception about implementation, lack of training, ambiguity about the implementation of TQM, lack of cooperation, resistance to change, lack of a model of TQM, ineffective leadership, lack of funding and resources, poor morale of teachers, lack of commitment of leadership, no difference in the public and private PTTCs found about the implementation of TQM implementation.

Waszink & Wijngaard (2000), China)

Establish a study on outcome performance as a necessary dimension in the HEI. Assessment of the organizational performance of an individual university has centralized characteristics and its results have been implemented in the policy of the funding bodies based on different systems for organizational effectiveness.

Celik (2018), Duhok

An example of quality management system implementation is a Ronaki Duhok Education Company. Moreover, the college of the Duhok Boys has applied ISO standards successfully. The satisfaction rate of Duhok Boys College was 93.2 percent. ISO 9001 standards increase levels of customer satisfaction and focus on organizational business goals.

Chumba, Sang, Kibett & Kirui (2019), Kenya

The study focus on the relationship between organizational performance and ISO certification with non-conformities identities during system audits in selected public universities. During ISO certification and system audits, there was a significant positive relationship between the number of non-conformities identities. The study recommended that there is a need for a public universities management system to raise awareness on the improvement of standardization and raise the culture of quality and address the non-conformities during system audits and promote practice and usage of standards and raise the quality of curriculum in public universities in Kenya.

Aamer, Al-Awlaqi & Alkibsi (2017), Yemen

An exploratory study was conducted in the least developed countries for TQM implementation. The result shows that varying levels of some of the TQM principles were applied in the Yunmi organization. Continuous improvement was the least

practice principle and customer focus was the most practiced principle. Moreover, 58.93 was the readiness level of Yunmi organization for TQM. The level of readiness is related to the successful adoption of the potential of the quality management standard/model in the Yunmi organization.

Martin & Thawabieh (2018), Oman

The study is related to the ISO 9001 effect on the operational performance of higher education in Oman. This is a case study of Buraimi University College. Results show that market focus, leadership, staff focus, and stakeholder have a significant positive influence on the operational performance of higher education. The result has also agreed that the success of TQM appears to be most relevant with soft practices rather than hard practices.

Chumba, Sang, Kibett & Kirui (2019)

Conducted a study on the relationship between service delivery and ISO certification in selected universities in Kenya. Between ISO 9001 and service delivery was found a positive relationship. ISO certification is embraced positively by employees of the university. Moreover, certification brings changes to the activities of the university and increases service delivery ISO certification increase service delivery, brings uniformity to university operations, and better use of resources.

Leontyuk, Vinogradova & Silivanov (2019), Russia

Conducted study of fundamentals of ISO 9001:2015. Results show that ISO 9001:2015 has a great impact on workflow and benefits.

Gamboa & Melao (2012), Portugal

Conducted study of success and impact factors of ISO 9001 in education. Results reveal that the under-research area, includes two external benefits, two internal

benefits, four success factors, and three disadvantages. Bureaucracy is depicted positive light. Management support and commitment is not seen as the most important success factor.

Fonseca (2015), Portugal

Conducted study on quality guru and TQM to ISO 9001:2015. Result reveals that major benefits include a new approach, less emphasis on documentation, focus on organizational culture, knowledge management, stakeholder, and risk-based thinking.

Hutyra (2010), *Czech Republic*

Conducted a study on the implementation of QMS ISO 9001 standards at the university. The technical university of OSTRAVA was the first that practical experience it. Results show that the quality of the final product of the university was not evaluated to date but significant improvement was recognized in university culture.

Papadimitriou & Westerheijden (2010), Greek

Conducted a study on the adoption of ISO QMS in Greek universities. Results show that ISO QMS is fruitfully adopted by all if three types of neo-institutional pressure (mimetic, coercive, and normative) are present. Moreover, the high response rate depicts that there is a quality improvement at the micro-level in Greek higher education.

Fernandez-Cruz, Rodriguez-Mantilla & Diaz (2020), Spain

Conducted study on the impact of the application of ISO 9001 standards on satisfaction and climate of the school members. Results show that standards of ISO have a significant impact on dimensions of school culture like the participation of teachers, family relationship with the school, management team, methodological

training, and educational community. Quality coordination and management team were more positive.

Rodriguez-Mantilla, Carrascosa & Martinez-Zarzuelo (2021)

Conducted study on ISO 9001 standards impact on the management system and school planning. This study was a comparative study of the perception of teachers and heads. The result of the study shows that the impact of ISO implementation on planning and management systems was medium-high. Furthermore, recognition and support were medium-low with heads evaluating the impact of ISO 9001 implementation was a significantly higher level of improvement of timetables, staff recognition and expectation, staff recognition and achievement, meetings, and preparation of classroom.

Anh, Linh, Nguyen & Duan (2021)

Reviewed the quality assurance systems. FPT University is evaluated because of the accreditation report 2019 in ACBSP. In methodology, ISO standards are evaluated. The application of `the ISO system in management has contributed to the management of quality of teaching and learning, promoting major educational growth, mechanical facilities, and environment as well as academic development. Moreover, improved work efficiency contributions of the departments within the university furthermore apply for multi campuses and locations of educational institutions.

2.22.2 National Studies: Initiatives that were taken for the improvement of standards of quality and problems faced by institutions of higher education and studies conducted at the national level discuss in this session.

Ahmed, & Ali (2016), Pakistan

Conducted a study on the implementation of TQM practices in Pakistani higher education institutions. Results show that 13 factors were determined in TQM implementation through factor analysis, such as leadership, stakeholders focus, rewards and recognition, empowerment, improvement, process control, evaluation, and measurement. Resources are some key factors. Each factor is explaining more than 5% of the variation in the data.

Akhtar (2007), Pakistan

There should be high-quality teachers in college. Better employment opportunities may be created. Moreover, the pay scale is revised and more attractive salary packages may be given. For overcoming the problems of improvement of B.Ed. the program needs to focus on examination and infrastructure.

Iqbal (2004), Pakistan

A research study in universities explains the problems and efforts that were taken in this matter. The study explains that in universities there were low-quality standards and limited access to the standards in the area of administration, academic research, and equipment. The teacher needs training for enhancing knowledge, skills, and professional development. The study also explores the lack of effective governance, institutions, lack of linkage between industry and universities, financial mismanagement, character-building opportunities for students being limited, and unchecked standards for the private sector.

Malik (2002), Pakistan

The study explains that many of the parents, teachers and students didn't happy with higher education standards related to teaching because of less focus on research,

inadequate laboratories, inadequate physical facilities, funding, and inadequate equipment in libraries.

Hameedullah (2005), Pakistan

Conducted the study of ten universities. The results of the study show that in the private sector teachers were competent and confident, infrastructure, cafeteria, common rooms, hostels, playground, dispensaries, transport facilities, and the student quality was better, as compared to public sector universities.

Mian (2006), Pakistan

Describe that in the Pakistani context culture of entrepreneurship in the higher education sector develop if key stakeholder involved in the private-public partnership is encouraged for reducing the financial burden of the government.

Raza, Hashmi & Ullah (2006), Pakistan

Conducted another qualitative research on 275 university students' in private higher education institutions problems in Pakistan were highlighted as teaching method, non-availability of teachers, non-availability of the course outline, and outdated knowledge as the main problem. Moreover, a biased attitude of faculty toward learners, is a shortcoming in the system of faculty members in the private institution most of the teachers are visiting faculty or part-time. At the end of the semester, part-time teachers give inflated grades for getting an outstanding evaluation from students.

Khan (2008), Pakistan

Conducting studies on assessing higher education, especially the quality of curriculum and management in a private education institution in Pakistan. The findings of the study show that there was a difference because of faculty members, administrators, and students. Moreover, stakeholder was not included in the

implementation and development of quality assurance and quality management system. Most universities are commercial organizations for getting earn profit related to quality management and quality education.

Woodhouse (2008), Islamabad

Conducted an in-depth literature review and cost-benefit analysis of quality assurance. The researcher explained that the role of a quality assurance agency is very important. The researcher predicts that in the future all countries need one or more quality assurance agencies. All universities need accreditation for the collaboration of quality assurance agencies because transformation is the need of time.

Bhatti & Tauqir (2006), Pakistan

Investigate the total quality management implementation at the University of Punjab. The study explains existing quality management practices and recommended that the university of Punjab may provide sustain culture, provide an environment, sustainable resources, and suitable resources for total quality management implementation.

Anjum & Ullah (2016), Pakistan

Conducted a study on ISO certification trends and scope. Results reveal that the number of certificates awarded from 2004 to 2014 represents a continuous improvement in the business and industrial sector in Pakistan. It is strong potential for positive trends of ISO certification in Pakistan in the coming year in different areas.

Shah, Uqaili & Qureshi (2017), Pakistan

Conducted a case study of Mehran University for the adoption of quality culture. MUET is a public institution that has a better reputation for offering top-notch instruction in the fields of technology and engineering. The primary factor is the quality

culture, which is a result of working with QECs and participating in ISO activities. Due to the implementation of quality assurance practices and low fee structure students get admission into it. Graduates get to perform better at international levels like Gulf countries famous organizations such as Apple and Google etc. but hold an exceptional chance in proving mental capabilities in the local market. Results show that quality culture procedure commitments. But the quality culture has a higher impact on large populations. A student with poor background has no other suitable option to acquire a quality education except MUET.

There is very little information available about quality management in universities and academic organizations, even though many researchers and authors have written articles about theories and models of quality management in many industries, including service and manufacturing. The ISO 9001 model's impact on Pakistani service quality, business performance, and education has been studied empirically. A comparison of quality management practices in both public and private universities is required to address this gap. The existing literature has shown the status of the ISO 9001 that prevails now-a-days in the educational sector. From the literature review, the most prominent issues included a lack of governance, no market access strategy, a lack of training opportunities, a lack of commitment from top management, a lack of money, reluctance to change, resource wastage, and insufficient resources. Through a good check-and-balance system and quality management system, performance must be improved for efficient and effective resource use.

2.23 Summary

The chapter provides information about quality management in higher education and the different aspects related to them. Moreover, provide information about ISO 9001 history, its principles, its implications, and its challenges.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter includes information about the design of the research, its methodology, and the development of research instruments. Moreover, the pilot study, validity, and reliability of the research instruments. This chapter also provides information and detail about the population, sample, and procedure of data collection. Furthermore, it also provides information about data analysis. The research methodology is related to systematic and theoretical analysis of procedures that are applied to the field of study.

Moreover, the quantitative method is related to a set of a small number of structures that is administered to respondents (Cresswell, 2003). A qualitative method, on the other side, is small cases or several respondents. The data helps in understanding the problem, but bread is lacking. So finding has a low generalization (Aaker et a1., 1995). Numerical research methodologies are used in social sciences research such as experimental surveys, case studies, and historical. Several factors affect the right methodology such as research question type, history, and phenomena. The research question of the study is essential. Based on the research questions and their subsequent research objectives, an interview, and questionnaire survey was adopted in the research study.

A research design that is related to the logical sequence of the study related to research questions of empirical data to answer them. It is a blueprint for empirical research that included tools, methods, procedures, and methods for the collection of information and analysis (Gay, 1996). Research ensures that the study was related to a

problem and use appropriate economic tools and procedure. In social sciences studies, the research design is divided into groups such as experimental and non-experimental. Both of them were divided into several categories. Keeping in view the population, lack of control on variables, and respondents' perception of getting the required information related to current phenomena. For the present study, a non-experimental descriptive design was chosen. This descriptive research study was based on the mixed-method approach. Self-constructed questionnaires involve quantitative data and interviews involve qualitative data.

3.2 Research Design

Mixed methods study in which the researcher combines both quantitative and qualitative research techniques, concepts, approaches, and languages into a single study (Johnson, 2004 p.17). A mixed approach is an approach to research that utilizes both qualitative and quantitative data (Zina, 2021). The present study adopted Quan + qual simultaneous design (Morse, 1991). Teddlie & Tashakkori (2009) says that call this design a parallel mixed design. It is also called convergent design (Creswell, 2014).

3.2.1 Convergent parallel design

The convergent parallel study provides a comprehensive understanding of the problem. Quantitative results provide general associations and inclinations while qualitative results provide in-depth individual points (Creswell & Creswell, 2014). This research design is used where qualitative and quantitative strands are implemented at the same time. This design is based on two stages first, Quan and the second Qual, and can be Qual and Quan phases. Sometimes Quan and Qual are done simultaneously at little intervals in every phase. In the first stage Quan (quantitative) in which data is collected and analyzed separately and in the second stage Qual (qualitative) in which

data is collected and analyzed separately. Researchers test hypotheses for the Quan phase and answer research questions for the Qual phase (Morse, 1991). Using the Morse notion system parallel mixed is representative as Qual+Quan or Quan+Qual. Both Quan and Qual answer basic research questions and conclude after that conclusions are integrated from Quan+ Qual. If in the design quantitative aspects dominate it is denoted as Quan+qual (Graff, 2016).

Different simultaneous designs are explained by (Morse, 1991).

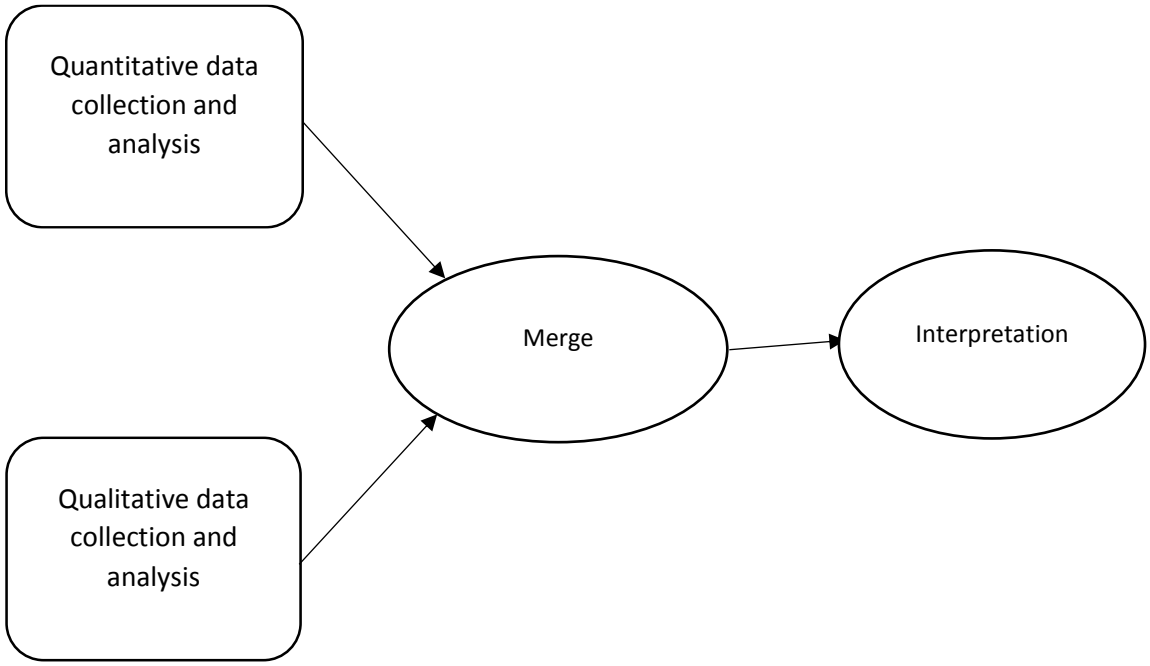
1. Quan+quan represents quantitatively focused quantitative simultaneous design.
2. Qual+qual denotes qualitatively focused qualitative simultaneous design.
3. Qual+quan represents qualitatively focused in addition to qualitative and quantitative simultaneous design.
4. Quan+qual signifies quantitatively focus, design as quantitative, and qualitative simultaneous.

The present study adopted Quan+qual simultaneous design:

Quan (questionnaire) + qual (interview) was used.

Figure 4

Convergent Parallel Mixed Design



Note. (Creswell, 2014)

3.2.2 Research philosophy

Pragmatism philosophy was adopted for mixed-method research. It provides a practical solution for the problem under the study. Pragmatic knowledge is constructed on the reality of the world we are surrounded by. Theories are referred to base on appropriateness and probability. Here for quantitative research scientific approach was adopted to find out the objective reality because of teachers and HODs. Researchers and phenomena do not interact with each other and objectively try to find the truth. Qualitative research (interview) believes that the fact that there can be more than one truth grounded in the subjective standard. Here intervention between the phenomenon and the researcher. Both are always together with the advantage of quantitative and

qualitative research as qualitative data give in-depth analysis while quantitative data also provide objective and immediate data (Johnson & Onwuegbuzie, 2004).

3.3 Population of the Study

All the directors of quality enhancement cells, HODs, and teachers were considered population from public and private universities. Individual university websites were visited to identify the faculty in which teachers and HODs. Purposive sampling was applied to select the sample of universities. The research study sample comprised 14 universities (7 public and 7 private) with due representation of Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory (ICT).

Sekaran & Bougie (2016) define a single number of the population is called an element. The population is defined as all the elements that reach the study for the conclusion (Best & Kahn, 1999; Levin & Rubin, 2000). The population of the study consisted of all the universities of Punjab, Khyber-Pakhtunkhwa, and Islamabad in the public and private sectors. So teachers, HODs, and the director of QEC constituted the population of the study.

Table 3.1

Population of the Study

Universities	Directors of Quality Enhancement Cells	HODs	Teachers
54	54	255	10491

Note. (Higher Education Commission, 2019). (Data on the number of Directors of Quality Enhancement Cells, HODs, and Teachers was collected from an online university website)

3.4 Sample and Sampling Techniques

The study obtains the list of IPEs universities as the sample frame that complied with public and private universities with non-ISO 9001 certifications by getting the status from each university website. Sekaran & Bougie (2016) describe that a sample is the collection of all elements of the population that are used to describe the population. Furthermore, it is the segment of the subset population. When a population is large than researcher takes a sample from the population and this approach is called sampling. The procedure of selecting a sufficient number of elements from a population so that sample and its characteristics enable for generalization of such properties of the population elements. Additionally, a research sample is an essay rather than studying the population, thus it is less expensive and time-consuming (Levin & Rubin, 2000).

Gay (1996) describes that the sample size should be large and manageable within time and budget. Sampling may base on random (probability) and nonrandom (probability). Purposive sampling was applied to select the sample of universities. Non-ISO 9001 certifications universities and those who have completed or in process of IPEs were selected. Purposive sampling is a nonrandom technique that does not need underlying theories or a set of information. Simply, put researcher decides what needs to know and sets out to find people who are willing to provide information by experience and knowledge (Tongco, 2007). The research study sample comprised 14 universities (seven public and seven private) with due representation of Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory (ICT). The researcher paid due attention to all mentioned factors and opted for random stratified purposive sampling for the sample of the study. In a stratified sample, the population is divided into a homogeneous group that is known as strata, after a specific number of elements from each stratum according to the population of that stratum the population as a whole is

selected at random or an equal number of elements from each stratum are drawn randomly. In both cases, every element in the population has a chance of being selected and the strata have due representation (Khan, 2010). These methods were employed for the selection of stakeholders from the universities i.e. HODs, directors of QEC, and teachers. In the case of the director of quality enhancement cells, purposive sampling was used. Teachers and HODs were selected through simple random sampling.

Table 3.2

Sample Distribution Based on Region-Wise

Region	Region-wise	Percentage (%)	Total
Khyber-Pakhtunkhwa	3	21.43	
(ICT) Islamabad Capital Territory	4	28.57	
Punjab	7	50	14

Table 3.3

Sample of the Study

Universities	Directors of Quality Enhancement Cells	HODs	Teachers
14	14	28	476

Note. Higher Education Commission, 2019. Data on the number of Directors of Quality Enhancement Cells, HODs, and Teachers were collected from an online university website

3.5 Section 1 Quantitative Approach

3.5.1 Research instrument The method of the questionnaire used to elicit data from respondents as a research instrument. The questionnaire include structured items on the Likert scale was used to collect the data. Sekaran & Bougie (2010) questionnaire can be distributed personally or e-mailed. Furthermore, the advantage of covering a wide area as geographical in a survey in addition complete the questionnaire at their home and workplace. Furthermore, a disadvantage that is associated with e-mail questionnaires such as the ill-represented responses of a sample, a low response rate of respondents. Overcoming disadvantages follow effective techniques such as sending follow-up letters, providing self-address, keeping the questionnaire as short as possible, send soft reminders and stamped return envelopes. Sekaran & Bougie (2016) describe that the low response rate related to mail questionnaires, a 30% response rate is acceptable.

3.5.2 Questionnaire construction: A new research instrument was developed for getting empirical data from university respondents to test the hypotheses. Items related to seven variables. The variable was under the heading of seven practices of ISO 9001 such as customer satisfaction, leadership, continuous improvement, process approach, people involvement, relationship management, and decision making based on evidence. An item bank was created for items. Shivany (2013) Likert scale was suitable when the survey method of self-administered ordinal data being collected is adopted. Likert scale was suitable for respondents for asking perceptive. The Likert scale is an ordinal level of measurement for agreement/disagreement (Mcleod, 2008). Getting a reliable answer from the respondent's questionnaire is the set of items. Hussey & Hussey (1997) describe that the most frequent tool uses for information collection on the subjects is the questionnaire. Gay (1996) defines the questionnaire used for collecting data for the

participants who cannot be personally interviewed because of distance and time contains.

Table 3.4

Sources of Variables Included in Quality Management Practices Scale

Categories of quality management Practices (ISO 9001:2015)	Sources of the questionnaire items
Customer focus	(Sadikoglu & Olcay, 2014; Rahman & Bullock, 2002; Khan, 2010; Borahan & Ziaratis, 2002).
Leadership	(Ahmed & Ali, 2016; Khan, 2010, Pandi et. al., 2009, Borahan & Ziarati's, 2002, Rosa et. al., 2007; Bayraktar et. al., 2008).
Engagement of people	(Bayraktar et al., 2008; Rahman & Bullock, 2002; Gozacan Borahan & Ziaratis, 2002; Khan, 2010).
Process approach	(Borahan & Ziaratis, 2002; Khan, 2010; Rosa et al., 2007).
Improvement	(Bayraktar et. al., 2008; Khan, 2010; Borahan & Ziaratis, 2002; Pandi et. al., 2009; Rosa et. al., 2007; Kuncoro, 2013).
Evidence-based decision making	(Borahan & Ziaratis, 2002; Khan, 2010; Tseros, 2015).
Relationship management	(Borahan & Ziaratis, 2002; Hesham & Magd, 2007; Al-Najjar, 2011; Sousa-Poza et al., 2009; Arora, 1996; Al-Najjar, 2011; Khan, 2010; Kiarie, 2020; Khan, 2010).
Challenges	(Kothar & Lal Pradhan, 2011; Mehfooz & Saeed Lodhi, 2015; Zgodavova et al., 2017; Psychogios & Priporas, 2007; Moturi & Mbithi, 2015; Corbett & Rastrick, 2000; Wahid, 2019; Ahmed et al., 2006; Stanislav & Walter, 1998; Hussein et al., 2014; Thandapani et al., 2011; Hussein et al., 2017; Trivelias et al., 2012; Mohamed et al., 2015; Al-Najjar & Jawad, 2011; Hussein et al., 2014; Al-Najjar & Jawad, 2011; Corbett & Rastrick, 2000; Alalfy & Abo-Hegazy, 2015).

Essential themes and issues that are linked with quality management system principles were underlined. The quality management stem scale consisted of five points

Likert scale. A scale based on (1-5 from strongly disagree to strongly agree). In addition, (Dilshad, 2009 & Akhtar et al., 2010) used the same (SDA to SA) Likert scale for measuring the perception of students, employees, and teachers. Initial questionnaire based on hundred items after validity pilot study and reliability 58 items included in the questionnaire details were as follows:

Table 3.5

Distribution of Items According to Seven Dimensions of ISO 9001:2015

Variables	Number of items
CF	8
L	9
EP	6
PA	8
I	7
EBDM	5
RM	5
C	10
Entire items	58

3.5.3 Design of the questionnaire Following were parts included in the questionnaire.

i. **Title.** Description of the study related to the study title and what was the study all about.

ii. **Demographic information.** included university identification and respondents' following information. Experience, institution sector, and gender.

iii. **Response rubric.** Instruction about completing the questionnaire. Instruction was as follows:

Please respond to each item by encircling the most appropriate number as per the scale key.

iv. **Body of the questionnaire.** this part is based on items of seven practices and ten challenges.

v. End of the questionnaire. each questionnaire ends based on graduate expressions such as Thank you very much for the completion of the questionnaire.

vi. The cover letter. on the response rate, a cover letter has a great impact. A mailed questionnaire must be a cover letter to explain what and why is being asked (Gay, 1996).

The following tips are important for a cover letter;

1. The letter must be brief, and neatly explain the purpose of the study and good cooperation from the respondents.
2. Letter promise confidentiality
3. The letter should explain information about the questionnaire return
4. For return post-return envelops should be included
5. The letter was written clearly.

3.5.4 Validity

McDaniel & Gates (1996) describe that it is important to ensure some points before administering the instruments. Firstly, describe what is to be measured. Secondly, pre-tested the items and thirdly experts checked them.

3.5.4.1 Face validity

The first step generally in the validity of the questionnaire was to establish face validity. Expert (educationist, scholar, researcher, and QMS supervisors) understands the topic through questionnaires. They evaluated whether effective items capture the

topic under study. Face validity establishes through scholars, researchers, and QM supervisors. These people had sufficient knowledge two of them held a Ph.D. degree in management studies with five-year teaching experience, two of them taught management subjects at the BBA and MBA level with five years of teaching experience, and two were scholars in management, quality management, and ISO 9001. The feedback from the QM supervisors, scholars, and researchers was used to make necessary adjustments to the questionnaire items and semi structured interview questions like the researcher adding items that matched the given conceptual domain of the concept.

3.5.4.2 Content validity

Best & Kahn (1999) defines that by showing to a panel of experts the content validity of the questionnaire and interview established. Content validity was checked by experts. To have a psychometric expert on items construction check common errors on the survey instrument like confusing, leading, and double-barrel items. Content validity was measured through expert judgment in the items of the questionnaire and interview questions. In this research study questionnaire and interview questions were validated by five experts. The supervisor counter-checked and confirmed the accuracy of the concepts being measured.

The validity of the instrument was established by experts' opinions in the field of the study supervisor, quality experts, and Ph.D. teachers.

Criteria for validation of experts were as follows:

1. Questionnaire and interview questions were validated by Ph.D. experts or the director of QEC.
2. Ph.D. criteria were not essential for QEC Director.

These people had sufficient knowledge two of them held a Ph.D. degree in management studies with five-year teaching experience, two of them held a Ph.D. degree in social sciences with seventeen years and eighteen years of teaching experience one of them was a QEC director having ten-year experience of a quality management.

In the questionnaire, two boxes were created on the left side of each item that was related to accepted (A) and rejected (R). In this way, 80% of approved items were added to the questionnaire. Moreover, two extra pages were also attached for comments and suggestions. The necessary revision and modification of the research instrument increase validity. The researcher personally met with experts to discussion of the questionnaire and interview questions. According to experts' suggestions, researcher remove confusing items, double-barrel items, and improve common errors in the survey instruments.

3.5.4.3 Construct validity

Nachmias & Nachmias (2008) added that construct validity establishes through measuring the instrument that is tied with the concept and theoretical assumptions are emphasized. Construct validity was checked through factor analysis. Hair et al. (2005) added that the factor principal component analysis was used with varimax rotation to maximize factor loading and reach a simple structure in SPSS. Moreover, for the suitability of factor analysis, two additional statistical tests were conducted. Kaiser-Mayer Olkin KMO results show that values greater than 0.5. which shows the suitability of factor analysis. The result of Bartlett's test of sphericity presents a low p-value of less than 0.05 which indicates the usefulness of user data for factor analysis. Item under each construct/principle was tested and items with very low loading (less than 0.4) were

eliminated from the assessment. The eigenvalue of less than one was eliminated from the construct of the assessment. (Appendix-G)

3.5.5 Pilot Study of the Instrument

Uses a trial run or small-scale version in perception for a major study. Winter & Dodou (2012) added that for measuring the reliability of the research instrument pilot is used to pretest the research instrument. Mugenda & Mugenda (2008) agreed with 10-20% of the sample size. In a pilot study, 1% to 10% were on the lower limit. Connelly (2008) presents literature suggesting that a 10% pilot study sample should be appropriate for the sample project for the large study. Hertoze (2008) describes that there is not a straightforward or a sample issue to resolve because some strategies are influenced by many factors. Moreover, (Johanson & Brooks, 2010) describes that sample size depends on the specific purpose of the pilot study. In this way, 174 participants were selected for the pilot study. After modification of the questionnaire pilot study was conducted in the universities with HODs, and teachers. After the pilot testing questionnaire was refined.

3.5.6 Reliability

Questionnaire reliability was pretested on a pilot scale through respondents. Cronbach alpha is the most popular statistic for reliability Alpha (Cronbach Alpha, 1951). In the survey instrument, Cronbach's alpha measures average correlation or internal consistency (Kothari, 2008). Cronbach alpha normally ranges between 0 and 1. Geroge & Mallery (2003) provide the rules of thumb that the reliability coefficient of 0.7 is acceptable and the new questionnaire reliability coefficient of 0.6 is acceptable which agrees with the study of (Al-Rafaie, Ghnaimat & Li, 2012).

Gay (1996) describes that reliability is the degree to which an instrument measures whatever it measures. Test-retest is a common method, the equivalent-form method is used for stability measure, and the inter-item consistency spilt half method is used for measuring reliability. Internal consistency is defined as the item measuring the same construct collectively as well as individually moreover, shown under a construct homogeneity. Cronbach alpha is the technique for measuring inter-item consistency. But for the Kuder-richer son formula (KR-20) is used for dichotomous items. Sekaran (2003) defines that perfect reliability 1 shows higher reliability. 0-1 ranking the coefficient reliability. Gay (1996) expresses that normally acceptance criteria of 0.6 are considered in the social science for reliability scale. In the same way, the researcher had used the Cronach alpha for the questionnaire of HODs, and the teacher's initial questionnaire was based on hundred items after validity, pilot study, and reliability 58 items included in the questionnaire details were as follows: The internal consistency reliability strategy was used to assess the consistency across items within the items. The study adopted a Cronbach alpha to measure the reliability of the questionnaire.

3.5.6.1 Item internal consistency reliability (Cronbach alpha)

Table 3.6

Reliability Result, Internal Consistency of the Questionnaire

Variable	Cronbach Alpha	Number of the items
C	.891	8
L	.885	9
EP	.844	6
PA	.887	8
I	.874	7
EBDM	.807	5
RM	.817	5
C	.898	10
Overall	.727	58

Number of items =8

Alpha= 0.891

On the first test, results show that the alpha coefficient for the 8 items was .891 which implies that the item had internal consistency. The instrument was reliable 0.6-0.9 is acceptable.

Number of items = 9

Alpha= 0.885

On leadership, the Likert items alpha coefficient for the nine items was 0.885. Suggesting that the item had relatively high internal consistency.

Number of items = 6

Alpha= 0.844

On the engagement of people, the Likert items alpha coefficient for the six items was 0.844. Suggesting that the item had relatively high internal consistency.

Number of items = 8

Alpha= 0.887

On the process approach, the Likert items alpha coefficient for the eight items was 0.887. Suggesting that the item had relatively high internal consistency.

Number of items = 7

Alpha= 0.874

On the improvement, the Likert items alpha coefficient for the seven items was 0.874. Suggesting that the item had relatively high internal consistency.

Number of items = 5

Alpha= 0.807

On evidence-based decision making Likert items, alpha coefficient for the five items was 0.807. Suggesting that the item had relatively high internal consistency.

Number of items = 5

Alpha= 0.817

On relationship management, the Likert items alpha coefficient for the five items was 0.817. Suggesting that the item had relatively high internal consistency.

Number of items = 10

Alpha= 0.898

On challenges, the Likert items alpha coefficient for the ten items was 0.898. Suggesting that the item had relatively high internal consistency.

For teachers and HODs Likert items the alpha value of the 58 items was 0.727. This implies that the item had high internal consistency. As the alpha value was high that the items on this variable were strongly reliable.

3.6 Data Collection

The researchers adopted several methods for the collection of data. First, from the HOD of education data, a collection letter was taken. The survey questionnaire was taken personally and online, it was also sending a special message, using a google form, using email, and using different social media modes use to collect data. Respondents were requested to fill out the questionnaire some didn't reply and then send again soft reminder but still all respondents could not reach it. Some of them did not complete the questionnaire. Therefore, complete questionnaires were picked for the study. Analysis was done with the help of a t-test and mean. For data collection, questionnaires and interviews were used. Each questionnaire was a cover letter providing information that individual responses were kept confidential. A questionnaire was preferred because it was easy to administer, cheapened, efficient, easy to analyze, and simple and quick responses to complete data collection (Kothari, 2008). Mugenda & Mugenda (2008) response rate of 5% or above is adequate for analysis. The total response rate was 82%.

Table 3.7

Response Rate of the Respondents

Categories	Subjects	Questionnaires send	Questionnaires return	Questionnaires discarded	Questionnaires used	Response rate
			14 universities			
HODs	42	42	33	5	28	78%
Teachers	602	602	499	23	476	82%
Total	644	644	532	28	504	82%

3.6.1 Follow-up procedure

For increasing the response rate following procedure is necessary. For reminder personal visits may bring additional responses. A researcher contacted the participants where possible. Some participants completed the questionnaire on time while others asked for another questionnaire copy because they misplace the questionnaire. When the researcher contacted teachers for filling out the questionnaire by their colleagues most of them were complaining as they were delaying to return the questionnaire because they were busy with academic activities. Gay describes that if the percentage of response rate is not 70% so the conclusion validity will be weak. But a 100% response rate should not impact.

3.7 Data Analysis

A survey questionnaire was analyzed by using SPSS. It was done by using mean, SD, percentage and t-test. The present study did not generalize findings for rigorous comparison it has done only rich in-depth information from both sources of data. Respondents' names were kept confidential to avoid any type of conflict.

Moidunny (2009) mentioned the mean score interpretation that was as follows:

(1.00-1.80) considered very low; (1.81-2.60) considered low; (2.61-3.20) considered medium; (3.21-4.20) considered high; (4.21-5.00) considered very high.

3.8 Section 2 Qualitative Approach

This research is based on the process of investigating the quality management system practices ISO 9001:2015 in universities. Directors of QEC of both sector universities formed the population of the study. In sum, fourteen participants in which each from one participant were selected. Saunders et al. (2012, p. 372) describe an interview as a conversation between two or more people. All interviews are classified into three types. Semi-structured, structured, and unstructured. (Bjorklund & Paulsson, 2014, pp. 74-75) in structured interview questions are often asked in a special order and preformulated (Myers, 2013, p. 122). Saunders et al. (2012, p. 375) describe unstructured interviews in which the researcher talks freely about the topic. A semi-structured interview is the combination of an unstructured and structured interview and also involves some preformulated questions. Saunders et al. (2012, pp. 374-377) describe that a structured interview is suitable for the studies of quantities. While for qualitative studies unstructured and semi-structured interview is more suitable. The semi-structured interview was used in the present study. Purposive sampling was selected for the interview of the subjects. Based on participants associated with the university they were selected. The researcher decided that interview QEC directors because they have lots of information and awareness about the quality management system. Every interview took between 30/35 minutes to answer the questions.

In the absence of the QEC director, the assistant director and additional directors were interviewed because of the busy schedule of the QEC director researcher

add the additional director and assistant director in an interview. Data was collected with the help of a semi-structured interview. Moreover, in a personal visit, the interview was conducted at the office of the QEC director to address and communicate questions at their offices. An interview guide was prepared for the research questions.

i. **Pre-interview structure stage.** Before conducting the interview researcher decides the participants for the interview. Furthermore, the researcher arranged the detail of the interview session such as the venue, time, and date of the interview session.

ii. **During the interview stage.** After the opening of the interview included planning briefly about the interview session its process and the closing of the session. The researcher stated by having an informal conversation (greeting, interviewer and interviewee, self-introduction, nonverbal communication, like eye contact and smile before asking the questions. It is very essential to have a good rapport with the participants for a smooth process of freely and willingly communication (Jacob & Furgerson, 2012). The interviewer explained the study nature and its purpose to the interviewees. The researcher fellow the interview protocol sequent to get rich information from an interview by taking notes. The whole interview was based on 30/35 minutes. After that interviewer closes the session and offers the interviewees, like do you want to add something before and close the interview session. In the end, the interviewer expressed appreciation and pleasure to the interviewees. After that, data was entered into software according to the research questions.

iii. **Post-interview stag** keeping in view the research question of the study researcher prepares a semi-structured interview based on seven open-ended questions. For eligibility for inclusion in this study, participants must be directors of quality enhancement cells. In the absence of directors of quality enhancement cells, an interview was conducted with the assistant director or additional director. For this

purposive sampling technique was used. The validity establishes by five experts. A pilot interview was conducted with two participants. QDA Miner Lite software was used for data analysis.

3.8.1 Pilot Study

Pilot studies aim to give an idea about the problems like repeating questions, misunderstanding the questions, and the length of the questions which may appear during an interview. This remedy provides clear directions. Every interview required approximately 30/35 minutes. A pilot interview was conducted with two participants.

3.8.2 Data collection

Researcher visited universities for an interview with the QEC director. The director of QEC was supportive, some were busy so they give interviews online. Enough time was given to respondents to answer the questions. When data was collected, it was entered into the software for analysis (Sila, 2007; Babatunde, 2016; Yusof, 2000; Escanciano, 2001a, b; Aamer, Al-Awlaqi & Alkibsi, 2017). Data were collected through personal visits and online through google meet to the sample universities. Furthermore, participants were assured that collected information would be anonymous and that confidentiality was kept maintained.

3.8.3 Data analysis

Data were analyzed by QDA Miner Lite. The process of coding and theme development continued. Direct quotes can highly represent the views of participants so direct quotes were chosen. To select exemplar quotes the researcher looked for essential criteria like reputation, the number of respondents expressing the same ideas, and tone of voice, to examine their level of emphasis. Moreover, word clouds were used for the interpretation of the qualitative results.

3.9 Research Ethics

The study also provides information about ethical considerations. First research parametric allowed to make decisions on whether participants participate in the research or not. The study did not force the participants to participate in the research process. Secondly, participants' identities in the research process were considered anonymous. This study prevented any victimizations of any participant in the research study. Thirdly, the study sought permission from all stakeholders, including the universities before the data collection process.

3.10 Delimitations of the Study

Delimitations of the study was as follows:

Universities that were evaluated or in process of institutional performance evaluation standards (IPEs) in the province of, Punjab, Khyber-Pakhtunkhwa, and Islamabad Capital Territory were selected. Data were collected from the head of departments, teachers, and QEC directors. Educational institutions have many activities and aspects to study but the study focuses on management aspects at the institutional level.

3.11 Methodology Summary

The chapter provides information about research methodology, design, various concepts, and issues related to research. It also gives a rationale for a section of the design and methodology of the present study. It also provides information about research instrument data collection and analysis.

CHAPTER 4

ANALYSIS AND INTERPRETATION OF THE DATA

4.1 Results of the Quantitative Section

Table 4.1

Demographic Categories of the Teachers

Demographic categories (teachers)	Frequency	Percentage
University Sector		
Public	7	50%
Private	7	50%
Gender		
Male	276	58%
Female	200	42%
Education		
Postdoc	1	.2%
Ph.D.	85	17.9%
M.Ss./M.Phil.	125	26.1%
Master	265	55.9%
Academic Rank		
Professors	10	2.10
Associate professors	40	8.40
Assistant professors	100	21.00
Lecturers	326	68.48

In the above table 14 universities in which 7 (50%) were public and 7(50%) were private, 476 teachers completed a questionnaire in which the majority were male 276 (58%) and 200 (42%) were female. Among teachers 1(.2%) were postdoc, 85(17.9%) were Ph.D., and 125 (26.1%) were M.Sc. / M.Phil. and 265 (55.9%) were masters degree holders. The distribution of academic ranking of the teachers was: 10

(2.10%) professors, 40 (8.40%) associate professors, 100 (21%) assistant professors, and 326(68.48%) lecturers.

Table 4.2

Demographic Categories of the HODs

Demographic categories (HODs)	Frequency	Percentage
University Sector		
Public	7	50%
Private	7	50%
Gender		
Male	5	17.9%
Female	23	82.1%
Education		
Post doc	3	10.7%
PhD	25	89.3%
Academic Rank		
Associate professors	3	10.7%
Assistant Professors	25	89.3%

In table 4.2 fourteen universities in which 7 (50%) were public and 7(50%) were private, HODs included 5 (17.9%) were females and 23 (82.1%) were males. Qualification-wise distribution was: 3 (10.7%) were postdoc and 25 (89.3%) were Ph.D. The distribution of academic ranking of the HODs was: 3 (10.7%) were associate professors, and 25 (89.3%) were assistant professors.

Responses of Teachers

The following tables determine the survey results of seven public and seven private universities. Responses of participants were measured through a five-point Likert scale. The results of the analysis of the data were presented below.

Table 4.3

Teachers' Responses about Customer Focus

Statement	Sector	Mean	*SD*	t-value	Sig
University management assesses HODs/teachers' satisfaction regularly.	Public	3.19	1.24	2.995	.003
	Private	2.82	1.44		
University management resolves HODs/teachers' complaints.	Public	3.19	1.25	-0.73	.942
	Private	3.20	1.24		
University management arranges counselling support for HODs/teachers.	Public	2.58	1.39	.234	.815
	Private	2.55	1.34		
HODs/teachers are involved in decision-making.	Public	2.59	1.38	1.660	.097
	Private	2.39	1.26		
University officials' are easily available to the HODs/teachers.	Public	2.50	1.29	2.142	.033
	Private	2.26	1.18		
University management arranges services for HODs/teachers' career development.	Public	2.55	1.40	.098	.922
	Private	2.54	1.38		
University management has a system for taking HODs/teachers' views.	Public	2.55	1.31	.872	.383
	Private	2.44	1.31		
HODs/teachers are awarded for performing well.	Public	2.50	1.27	2.074	.039
	Private	2.26	1.19		
Overall teachers' responses about customer focus	Public	2.71	.53	3.322	.001
	Private	2.56	.43		

Note. df=474 N=476 (public=238; private=238)

In table 4.3, both sectors' mean score of the faculty member is compared through an independent sample t-test. The t-test result (t=2.995) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities

M=3.19, *SD*=1.24, and teachers from private sector universities *M*=2.82 *SD*=1.44) for "university management assesses teachers satisfaction regularly". In the second statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-0.73) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.19, *SD*=1.25 and teachers from private sector universities *M*=3.20, *SD*=1.24) for "university management resolves teachers complaints". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.234) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.58, *SD*=1.39, and teachers from private sector universities *M*=2.55, *SD*=1.34) for "university management arranges counselling support for teachers."

In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.660) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.59, *SD*=1.38, and teachers from private sector universities *M*=2.39, *SD*=1.26) for "teachers is involved in decision-making." On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=2.142) shows that there is a difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.50, *SD*=1.29 and teachers from private sector universities *M*=2.26, *SD*=1.18) for "university officials' are easily available to the teachers". The respondents' opinion was further sought on the statement that both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-.098) shows that there is no difference in the view of both sectors faculty members (teachers from public

sector universities *M*=2.55, *SD*=1.40 and teachers from private sector universities *M*=2.54, *SD*=1.38) for "university management arranges services for teachers career development". In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.872) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.55, *SD*=1.31 and teachers from private sector universities *M*=2.44, *SD*=1.31) for "university management has a system for taking teachers views".

The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=2.074) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.50, *SD*=1.27, and teachers from private sector universities *M*=2.26, *SD*=1.19) for "teachers are awarded for performing well". Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=3.322) shows that there is a difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.71 *SD*=.53 and teachers from private sector universities *M*=2.56, *SD*=.43). Public sector teachers' mean score was high.

Table 4.4

Teachers' Responses about Leadership

Statement	Sector	Mean	*SD*	t-value	Sig
The leadership has a clear vision.	Public	2.53	1.37	.503	.615
	Private	2.47	1.35		
The leadership has a clear mission.	Public	2.54	1.40	.399	.690
	Private	2.49	1.35		
The university leadership has clear objectives.	Public	2.53	1.36	.262	.793
	Private	2.50	1.43		
The university has the policy to improve quality and maintain standards.	Public	2.50	1.43	.261	.794
	Private	2.47	1.37		
University management is inclined to allocate adequate resources for quality improvement efforts.	Public	2.54	1.36	.978	.328
	Private	2.42	1.35		
Long-term planning is done at the departmental level.	Public	2.57	1.37	-.136	.892
	Private	2.59	1.30		
University senior management provides highly visible leadership in maintaining an environment that supports quality improvement.	Public	2.39	1.26	.397	.692
	Private	2.34	1.27		
University identifies the needs of job specifications very clearly.	Public	2.55	1.34	.033	.973
	Private	2.54	1.40		
Decision-making is based on factual information in the university.	Public	2.52	1.32	-.405	.686
	Private	2.57	1.39		
Overall teachers' responses about leadership	Public	2.52	.60	.628	.530
	Private	2.49	.49		

Note. df=474 N=476(public=238; private=238)

In table 4.4, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.503) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.53 *SD*=1.37 and teachers from private sector universities *M*=2.47, *SD*=1.35) for

“leadership has a clear vision”. In the second statement, both sectors' mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.399) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.54, *SD*=1.40, and teachers from private sector universities *M*=2.49, *SD*=1.35) for “leadership has a clear mission”. On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.262) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.53 *SD*=1.36 and teachers from private sector universities *M*=2.50, *SD*=1.43) for “university leadership has clear objectives.” The respondents’ opinion was further sought on the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.261) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.50, *SD*=1.43 and teachers from private sector universities *M*=2.47, *SD*=1.37) for “university has the policy to improve quality and maintain standards”. On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.978) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.54, *SD*=1.36 and teachers from private sector universities *M*=2.42, *SD*=1.35) for “university management is inclined to allocate adequate resources for quality improvement efforts”.

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=-.136) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.57, *SD*=1.37, and teachers from private sector universities *M*=2.59,

SD=1.30) for "long-term planning is done at departmental level". In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.397) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.39, *SD*=1.26 and teachers from private sector universities *M*=2.34, *SD*=1.27) for "university senior management provides highly visible leadership in maintaining an environment that supports quality improvement".

The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.033) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.55, *SD*=1.34 and teachers from private sector universities *M*=2.54, *SD*=1.40) for "university identifies needs of job specifications very clearly". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (t=-.405) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.52, *SD*=1.32, and teachers from private sector universities *M*=2.57, *SD*=1.39) for "decision-making is based on factual information in the university".

Lastly, the respondents' opinion was further sought that both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=-.628) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.52, *SD*=.60 and teachers from private sector universities *M*=2.49, *SD*=.49).

Table 4.5

Teachers' Responses about the Engagement of People

Statement	Sector	Mean	*SD*	t-value	Sig
University management forms various teams to solve HODs/teachers' problems.	Public	3.08	1.36	1.048	2.95
	Private	2.94	1.51		
HODs/teachers' are involved in course reviews.	Public	2.91	1.34	-.476	.634
	Private	2.97	1.53		
HODs/teachers' are involved in program reviews.	Public	3.03	1.48	-.308	.759
	Private	3.07	1.49		
Departments at the university collaborate with international universities.	Public	2.48	1.34	.420	.675
	Private	2.43	1.27		
Departmental meetings of the staff are regularly conducted to address the quality problems of an academic program.	Public	3.05	1.38	-1.115	.266
	Private	3.19	1.40		
Each course contents are developed after discussions with external staff with expertise in that particular area.	Public	2.55	1.35	1.520	.129
	Private	2.37	1.29		
Overall teachers' responses about the engagement of people	Public	2.85	.65	.338	.736
	Private	2.83	.70		

Note. df=474 N=476(public=238; private=238)

In table 4.5, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (t=1.048) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities M=3.08, SD=1.36, and teachers from private sector universities M=2.94, SD=1.51) for "university management forms, various teams, to solve teachers problems." On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (t=--.476) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities

M=2.91, *SD*=1.34, and teachers from private sector universities *M*=2.97, *SD*=1.53) for "teachers are involved in course review."

The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-.308) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.03, *SD*=1.48 and teachers from private sector universities *M*=3.07, *SD*=1.49) for "teachers are involved in program review." On the other statement, both sectors' mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.420) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.48, *SD*=1.34 and teachers from private sector universities *M*=2.43, *SD*=1.27) for "departments at the university has collaboration with international universities". In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-1.115) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.05, *SD*=1.38, and teachers from private sector universities *M*=3.19, *SD*=1.40) for "departmental meetings of the staff are regularly conducted to address quality problems of an academic program."

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.520) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities M=2.55, SD=1.35 and teachers from private sector universities *M*=2.37, *SD*=1.29) for "each course contents are developed after discussions with external staff with expertise in that particular area." Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared

through an independent sample t-test. The t-test result (*t*=.338) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.85, *SD*=.66 and teachers from private sector universities *M*=2.83, *SD*=.70) on the engagement of the people.

Table 4.6

Teachers' Responses about the Process Approach

Statement	Sector	Mean	*SD*	t-value	Sig
University has a transportation facility.	Public	2.75	1.42	1.953	.051
	Private	2.50	1.29		
University has central support for research.	Public	2.57	1.38	.997	.319
	Private	2.45	1.28		
University has a sufficient medical facilities	Public	2.23	1.24	.930	.353
	Private	2.13	1.12		
University has sufficient financial resources.	Public	2.59	1.41	2.062	.040
	Private	2.34	1.20		
University has a sufficient hostel facility.	Public	2.48	1.39	-.230	.818
	Private	2.51	1.39		
University has adequate internet access.	Public	2.45	1.37	2.084	.038
	Private	2.20	1.31		
University has a sufficient library facility.	Public	2.57	1.37	2.501	.013
	Private	2.25	1.41		
University has sufficient cafeteria services.	Public	2.59	1.49	.533	.594
	Private	2.52	1.24		
Overall teachers' responses about process approach	Public	2.50	.75	.372	.710
	Private	2.48	.64		

Note. df=474 N=476(public=238; private=238)

In table 4.6, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.953) shows that there is difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.75, *SD*=1.42, and teachers from private sector universities *M*=2.50, *SD*=1.29) for

"university has a transportation facility". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.997) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.57, *SD*=1.38 and teachers from private sector universities *M*=2.45, *SD*=1.28) for "university has a central support for research". The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.930) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.23, *SD*=1.24 and teachers from private sector universities *M*=2.13, *SD*=1.12) for "university has sufficient medical facilities".

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=2.062) shows that there is difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.59, *SD*=1.41, and teachers from private sector universities *M*=2.34, *SD*=1.20) for "university has sufficient financial resources". In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.230) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.48, *SD*=1.39 and teachers from private sector universities *M*=2.51, *SD*=1.39) for "university has a sufficient hostel facility". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=2.084) shows that there is difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.45, *SD*=1.37, and teachers from private sector universities *M*=2.20, *SD*=1.31) for "university has adequate internet

access". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=2.501) shows that there is difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.57, *SD*=1.37, and teachers from private sector universities *M*=2.25, *SD*=1.41) for "university has a sufficient library facility".

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.533) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.59, *SD*=1.49, and teachers from private sector universities *M*=2.52, *SD*=1.24) for "university has sufficient cafeteria services". Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=372) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities M=2.50, SD=.75 and teachers from private sector universities M=2.48, SD=.64).

Table 4.7

Teachers' Responses about Improvement

Statement	Sector	Mean	SD	t-value	Sig
University management develop training program for HODs/teachers.	Public	2.39	1.57	-1.056	.292
	Private	2.54	1.46		
HODs/teachers are provided with opportunities to improve their qualifications.	Public	2.49	1.64	.279	.781
	Private	2.55	1.65		
There is a support for continuous professional development for HODs/teachers.	Public	2.57	1.58	.292	.770
	Private	2.53	1.55		
Sufficient funds for research are allocated to the university.	Public	2.46	1.53	-.806	.421
	Private	2.57	1.54		
HODs/teachers are encouraged to conduct research studies.	Public	2.55	1.51	1.004	.316
	Private	2.41	1.40		
Market research is conducted for the proposed program by the university.	Public	2.43	1.46	1.569	.117
	Private	2.23	1.27		
University has an effective system for faculty to make suggestions to management on how to improve quality.	Public	2.53	1.50	.090	.929
	Private	2.52	1.56		
Overall teachers' responses about improvement	Public	2.54	.75	.889	.374
	Private	2.48	.65		

Note. df=474 N=476(public=238; private=238)

In table 4.7, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-1.056) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.39, *SD*=1.57, and teachers from private sector universities *M*=2.54, *SD*=1.46) for "university management develop a training program for teachers". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.279) shows that there is no difference in

the view of both sectors faculty members (teachers from public sector universities *M*=2.59, *SD*=1.64 and teachers from private sector universities *M*=2.55, *SD*=1.65) for "teachers are provided opportunities to improve their qualifications".

In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.292) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.57, *SD*=1.58, and teachers from private sector universities *M*=2.53, *SD*=1.55) for "there is a support for continuous professional development for teachers". The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=-.806) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.46, *SD*=1.53 and teachers from private sector universities *M*=2.57, *SD*=1.54) for "sufficient funds for research are allocated in the university".

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.004) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.55, *SD*=1.51 and teachers from private sector universities *M*=2.41, *SD*=1.40) for "teachers are encouraged to conduct research studies". The public sector mean score was high. In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.569) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.43, *SD*=1.46 and teachers from private sector universities *M*=2.23, *SD*=1.27) for "market research is conducted for the proposed program by the university".

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.090) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.53, *SD*=1.50 and teachers from private sector universities M=2.52, *SD*=1.56) for "university has an effective system for faculty to make suggestions to management on how to improve quality". Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.374) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.54, *SD*=.75 and teachers from private sector universities *M*=2.48, *SD*=.65).

Table 4.8

Teachers' Responses about Evidence-Based Decision Making

Statement	Sector	Mean	SD	t-value	Sig
A manual of the quality assurance system exists at the university.	Public	3.55	1.31	.532	.595
	Private	3.49	1.43		
Details of the staff involved in quality assurance and control arrangements are available	Public	3.57	1.28	1.160	.247
	Private	3.42	1.47		
Transfers in and out of programs or courses to facilitate teachers are clearly recorded.	Public	3.59	1.26	1.183	.238
	Private	3.44	1.44		
The records of all resources are up to date and available.	Public	3.58	1.28	1.016	.310
	Private	3.46	1.42		
Detail of learning activities is available to the teachers.	Public	3.43	1.35	1.017	.310
	Private	3.30	1.43		
Overall teachers' responses about Evidence based decision making	Public	3.54	.68	1.748	.081
	Private	3.42	.85		

Note. df=474 N=476(public=238; private=238)

In table 4.8, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.532) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.55, *SD*=1.31, and teachers from private sector universities *M*=3.49, *SD*=1.43) for "a manual of the quality assurance system exists at the university". On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.160) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.57, *SD*=1.28 and teachers from private sector universities *M*=3.42, *SD*=1.47) for "details of the staff involved in quality assurance and control arrangement is available".

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (t=1.183) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.59, *SD*=1.26 and teachers from private sector universities *M*=3.44, *SD*=1.44) for "transfers in and out of programs or courses to facilitate teachers are clearly recorded". In the next statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.1.016) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.58, *SD*=1.28, and teachers from private sector universities *M*=3.46, *SD*=1.42) for "the records of all resources are up to date and available."

On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.017) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.43, *SD*=1.35, and teachers from private sector universities *M*=3.30, *SD*=1.43) for "detail of learning activities is available to the teachers". The public sectors mean score was high. Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=1.748) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.54, *SD*=.68, and teachers from private sector universities *M*=3.42, *SD*=.85).

Table 4.9

Teachers' Responses about Relationship Management

Statement	Sector	Mean	SD	t-value	Sig
HODs/teachers have regard for each other's opinion.	Public	2.72	1.51	.586	.558
	Private	2.64	1.45		
The department has effective links with other institutions.	Public	2.75	1.45	.475	.635
	Private	2.68	1.43		
Detail regarding the availability of all learning resources is communicated to HODs/teachers.	Public	2.80	1.45	.606	.545
	Private	2.72	1.41		
University strives to establish long-term relationships with HODs/teachers.	Public	2.76	1.46	4.490	.000
	Private	2.18	1.34		
University has an effective communication flow of information between departments.	Public	3.10	1.45	3.089	.002
	Private	2.68	1.48		
Overall teachers' responses about relationship management	Public	2.82	.83	3.384	.001
	Private	2.58	.73		

Note. df=474 N=476(public=238; private=238)

In table 4.9, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=.586) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.72, *SD*=1.51, and teachers from private sector universities *M*=2.64, *SD*=1.45) for "teachers have regard for each other's opinion". On the other statement, both sectors' mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=.475) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.75, *SD*=1.45, and teachers from private sector universities *M*=2.68, *SD*=1.43) for "department has effective links with other institutions." On the next statement, both sectors mean score of the faculty

member is compared through an independent sample t-test. The t-test result (*t*=.606) shows that there is no difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.80, *SD*=1.45, and teachers from private sector universities *M*=2.72, *SD*=1.41) for "detail regarding the availability of all learning resources is communicated to teachers".

The respondents' opinion was further sought in the next statement that, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=4.490) shows that there is a difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.76, *SD*=1.46 and teachers from private sector universities *M*=2.18, *SD*=1.34) for "university strives to establish long-term relationships with teachers". The public sectors mean score was high. On the other statement, both sectors mean score of the faculty member is compared through an independent sample t-test. The t-test result (*t*=3.089) shows that there is a difference in the view of both sectors faculty members (teachers from public sector universities *M*=3.10, *SD*=1.45, and teachers from private sector universities *M*=2.68, *SD*=1.48) for "university has an effective communication flow of information between departments".

Lastly, the respondents' opinion was further sought that, both sectors mean score of the faculty member is compared through an independent sample t-test. t-test result (*t*=3.384) shows that there is a difference in the view of both sectors faculty members (teachers from public sector universities *M*=2.82, *SD*=.83, and teachers from private sector universities *M*=2.58, *SD*=.73). The public sector mean score was high. Its means that public sector faculty members' perception was better about quality management practices.

Table 4.10

Teachers' Responses about Quality Management Practices

Sector	Mean	*SD*	t-value	Sig
Public	2.78	.40	2.889	.004
Private	2.69	.29		

Note. df=474 N=476(public=238; private=238)

In table 4.10, the public and private sectors' mean score of the teachers was compared through an independent sample t-test. t-test result (*t*=2.889) shows that there is a difference in the view of both sectors' teachers (teachers from public sector universities *M*=2.78, *SD*=.40 and teachers from private sector universities *M*=2.69, *SD*=.29). Public and private sector teachers' mean score was medium.

Table 4.11

Teachers' Responses about Challenges

Challenges			SA	A	UD	DA	SDA
Lack of top management commitment	Public	Frequency	118	97	7	13	3
		Percentage	49.6	40.8%	2.9%	5.5%	1.3%
	Private	Frequency	91	111	10	21	6
		Percentage	38.2%	46.6%	4.2%	8.8%	2.5%
Time management	Public	Frequency	86	118	5	16	13
		Percentage	36.1%	49.6%	2.1%	6.7%	5.5%
	Private	Frequency	47	142	5	27	17
		Percentage	19.7%	59.7%	2.1%	11.3%	7.1%
Resistance to change	Public	Frequency	101	92	4	20	21
		Percentage	42.4%	38.7%	1.7%	8.4%	8.8%
	Private	Frequency	67	119	15	21	16

		Percentage	28.2%	50.0%	6.3%	8.8%	6.7%
Existence of accreditation	Public	Frequency	82	113	2	23	18
		Percentage	34.5%	47.5%	.8%	9.7%	7.6%
	Private	Frequency	47	148	15	6	22
		Percentage	19.7%	62.2%	6.3%	2.5%	9.2%
Lack of planning	Public	Frequency	83	112	5	22	16
		Percentage	34.9%	47.1%	2.1%	9.2%	6.7%
	Private	Frequency	55	105	0	70	8
		Percentage	23.1%	44.1%	0%	29.4%	3.4%
Lack of funding	Public	Frequency	115	69	3	32	19
		Percentage	48.3%	29.0%	1.3%	13.4%	8.0%
	Private	Frequency	103	86	1	23	25
		Percentage	43.3%	36.1%	.4%	9.7%	10.5%
Lack of proper professional training	Public	Frequency	75	123	8	19	13
		Percentage	31.5%	51.7%	3.4%	8.0%	5.5%
	Private	Frequency	89	109	8	16	16
		Percentage	37.0%	45.8%	3.8%	6.7%	6.7%
Lack of awareness	Public	Frequency	115	82	3	17	21
		Percentage	48.3%	34.5%	1.3%	7.1%	8.8%
	Private	Frequency	69	134	5	14	16
		Percentage	29.0%	56.3%	2.1%	5.9%	6.7%
Lack of resources	Public	Frequency	80	117	6	21	14
		Percentage	33.6%	49.2%	2.5%	8.8%	5.9%
	Private	Frequency	75	126	5	3	9
		Percentage	31.5%	52.9%	2.1%	9.7%	3.8%

Inappropriate university culture for implementation of quality management	Public	Frequency	73	109	5	28	23
		Percentage	30.7%	45.8%	2.1%	11.8%	9.7%
	Private	Frequency	68	83	25	32	30
		Percentage	28.6	34.9	10.5	13.4	12.6

In table 4.11 public sector faculty members considered lack of top management commitment as a challenge 49.6% strongly agree, 40.8% agree, 2.9% undecided, 5.5% disagree, and 1.3% strongly disagree. Private sector faculty members considered a lack of top management commitment as a challenge 38.2% strongly agree, 46.6% agree, 4.2% undecided, 8.8% disagree, and 2.5% strongly disagree. Time management as a challenge considered by public sector faculty members 36.1% strongly agree, 49.6% agree, 2.1% undecided, 6.7% disagree, and 5.5% strongly disagree. On the other side, private sector faculty members' responses regarding time management as a challenge shows that 19.7% strongly agree, 59.7% agree, 2.1% undecided, 11.3% disagree, and 7.1% strongly disagree.

Data about resistance to change as a challenge from public sector faculty members' responses show that 42.4% strongly agree, 38.7% agree, 1.7% undecided, 8.4% disagree, and 8.8% strongly disagree. As private-sector faculty members' responses show that 28.2% strongly agree, 50.0% agree, 6.3% undecided, 8.8% disagree, and 6.7% strongly disagree regarding resistance to change. As regards the existence of accreditation public-sector faculty members' responses show that 34.5% strongly agree, 47.5% agree, .8% undecided, 9.7% disagree, and 7.6% strongly disagree. Private sector faculty members' responses show that 19.7% strongly agree, 62.2% agree, 6.3% undecided, 2.5% disagree, and 9.2% strongly disagree. Lack of planning as a challenge considered by public sector faculty members 34.9% strongly

agree, 47.1% agree, 2.1% undecided, 9.2% disagree, and 6.7% strongly disagree. Private sector faculty members' responses show that 23.1% strongly agree, 44.1% agree, 0% undecided, 29.4% disagree, and 3.4% strongly disagree.

Data on lack of funding as a challenge from public sector faculty members' responses shows that 48.3% strongly agree, 29.0% agree, 1.3% undecided, 13.4% disagree, and 8.0% strongly disagree. Private sector faculty members' responses show that 43.3% strongly agree, 36.1% agree, .4% undecided, 9.7% disagree, and 10.5% strongly disagree regarding lack of funding. As regards lack of proper professional training public-sector faculty members' responses show that 31.5% strongly agree, 51.7% agree, 3.4% undecided, 8.0% disagree, and 5.5% strongly disagree. Private sector faculty members' responses show that 37.0% strongly agree, 45.8% agree, 3.8% undecided, 6.7% disagree, and 6.7% strongly disagree regarding the lack of proper professional training. Public sector faculty members considered lack of awareness as a challenge 48.3% strongly agree, 34.5% agree, 1.3% undecided, 7.1% disagree, and 8.8% strongly disagree. Private sector faculty members' responses show that 29.0% strongly agree, 56.3% agree, 2.1% undecided, 5.9% disagree, and 6.7% strongly disagree regarding lack of awareness. Public sector faculty members' responses regarding lack of resources as a challenge show that 33.6% strongly agree, 49.2% agree, 2.5% undecided, 8.8% disagree, and 5.9% strongly disagree. Private sector faculty members' responses show that 31.5% strongly agree, 52.9% agree, 2.1% undecided, 9.7% disagree, and 3.8% strongly disagree regarding the lack of resources. Public sector faculty members' responses regarding inappropriate university culture for implementation of quality management as a challenge show that 30.7% strongly agree, 45.8% agree, 2.1% undecided, 11.8% disagree, and 9.7% strongly disagree. Private sector faculty members' responses show that 28.6% strongly agree, 34.9% agree, 10.5%

undecided, 13.4% disagree, and 12.6% strongly disagree regarding inappropriate university culture for implementation of quality management.

Responses of HODs

Table 4.12

HODs Responses about Custom Focus

Statement	Sector	Mean	*SD*	t-value	Sig
University management assesses HODs/teachers satisfaction regularly.	Public	3.57	.85	1.472	.153
	Private	3.00	1.17		
University management resolves HODs/teachers complaints.	Public	3.35	1.49	.544	.591
	Private	3.07	1.26		
University management arranges counselling support for HODs/teachers.	Public	2.57	1.50	.634	.532
	Private	2.21	1.47		
HODs/teachers are involved in decision-making.	Public	2.57	1.22	.282	.781
	Private	2.42	1.45		
University officials' are easily available to the HODs/teachers.	Public	2.50	1.50	.784	.440
	Private	2.07	1.38		
University management arranges services for HODs/teachers career development.	Public	2.50	1.34	.687	.498
	Private	2.14	1.40		
University management has a system for taking HODs/teachers views.	Public	2.50	1.22	1.102	.281
	Private	2.00	1.17		
HODs/teachers are awarded for performing well.	Public	2.57	1.45	.970	.341
	Private	2.07	1.18		
Overall HODs responses about custom focus	Public	2.76	.52	2.187	.038
	Private	2.37	.41		

Note. df= 26 N=28(public=14; private=14)

In table 4.12, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (t=1.472) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities M=3.57, SD=.85, and HODs from private sector universities M=3.00, SD=1.17) related to "university management assesses HODs satisfaction regularly." On the other statement, both

sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.544) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.35, *SD*=1.49, and HODs from private sector universities *M*=3.07, *SD*=1.26) related to "university management resolves HODs complaints." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.634) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.50, and HODs from private sector universities *M*=2.21, *SD*=1.47) related to "university management arranges counselling support for HODs." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=-.282) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.22, and HODs from private sector universities *M*=2.42, *SD*=1.45) related to "HODs is involved in decision-making."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.784) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.50, and HODs from private sector universities *M*=2.07, *SD*=1.38) related to "university officials' are easily available to the HODs." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.687) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.34, and HODs from private sector universities *M*=2.14, *SD*=1.40) related to "university management arranges services for HODs career development." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test

result (*t*=1.102) shows that there is no difference in the view of both sectors HODs ((HODs from public sector universities *M*=2.50, *SD*=1.22, and HODs from private sector universities *M*=2.00, *SD*=1.17) related to "university management has a system for taking HODs views."

The respondents' opinion was further sought in the next statement that, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.970) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.45, and HODs from private sector universities *M*=2.07, *SD*=1.26) related to "HODs are awarded for performing well." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=2.187) shows that there was a difference in the view of both sectors HODs (HODs from public sector universities *M*=2.76, *SD*=.52, and HODs from private sector universities *M*=2.37, *SD*=.41). Public sector HODs' mean score was high.

Table 4.13

HODs Responses about Leadership

Statement	Sector	Mean	SD	t-value	Sig
The leadership has a clear vision.	Public	2.50	1.40	.302	.765
	Private	2.35	1.08		
The leadership has a clear mission.	Public	2.57	1.12	.144	.887
	Private	2.50	1.40		
The university has clear objectives.	Public	2.57	1.39	.141	.889
	Private	2.50	1.28		
The university has a policy to improve quality and maintain standards.	Public	2.50	1.09	.310	.759
	Private	2.35	1.33		
University management is inclined to allocate adequate resources for quality improvement efforts.	Public	2.57	1.15	.147	.884
	Private	2.50	1.40		
Long-term planning is done at the departmental level.	Public	2.50	1.40	.132	.896
	Private	2.42	1.45		
University senior management provides highly visible leadership in maintaining an environment that supports quality improvement.	Public	2.57	1.55	.657	.517
	Private	2.21	1.31		
University identifies needs of job specifications very clearly.	Public	2.50	1.23	.138	.891
	Private	2.42	1.45		
Decision-making is based on factual information in the university.	Public	2.57	1.39	.130	.898
	Private	2.50	1.50		
Overall teachers' responses about leadership	Public	2.53	.49	.604	.551
	Private	2.42	.54		

Note. df= 26 N=28(public=14; private=14)

In table 4.13, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (t=.302) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities M=2.50, SD=1.40

and HODs from private sector universities *M*=2.35, *SD*=1.08) related to "leadership has a clear vision." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.144) shows that there is no difference in the view of both sectors HODs ((HODs from public sector universities *M*=2.57, *SD*=1.22, and HODs from private sector universities *M*=2.50, *SD*=1.40) related to "leadership has a clear mission." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.141) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.39, and HODs from private sector universities *M*=2.50, *SD*=1.28) related to "university has clear objectives."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.310) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.09, and HODs from private sector universities *M*=2.35, *SD*=1.33) related to "university has the policy to improve quality and maintain standards." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.147) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.15, and HODs from private sector universities *M*=2.50, *SD*=1.40) related to "university management is inclined to allocate adequate resources for quality improvement efforts." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.132) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.40, and HODs from private sector universities *M*=2.42, *SD*=1.45) related to "long-term planning is done at departmental level."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.657) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.55 and HODs from private sector universities *M*=2.21, *SD*=1.31) related to "university senior management provides highly visible leadership in maintaining an environment that supports quality improvement." the respondents' opinion was further sought in the next statement that, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (t=.138) shows that there is no difference in the view of both sectors' HODs (HODs from public sector universities *M*=2.50, *SD*=1.28 HODs from private sector universities *M*=2.42, *SD*=1.45) related to "university identifies needs of job specifications very clearly."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.130) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.39, and HODs from private sector universities *M*=2.50, *SD*=1.50) related to "decision-making is based on factual information in the university." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.604) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.53, *SD*=.49, and HODs from private sector universities M=2.42, and SD=.54).

Table 4.14

HODs Responses about Engagement of People

Statement	Sector	Mean	*SD*	t-value	Sig
University management forms various teams to solve HODs/teachers problems.	Public	3.14	1.56	-.937	.357
	Private	3.07	1.38		
HODs/teachers are involved in course reviews.	Public	3.42	1.78	-.105	.918
	Private	3.21	1.31		
HODs/teachers are involved in program reviews.	Public	3.14	1.70	-.443	.669
	Private	3.00	1.66		
Departments at the university has collaboration with international universities.	Public	2.57	1.28	-.144	.886
	Private	2.50	1.09		
Departmental meetings of the staff are regularly conducted to address quality problems of academic program.	Public	2.50	1.22	-.106	.917
	Private	2.42	1.34		
Each course contents are developed after discussions with external staff with expertise in that particular area.	Public	2.57	1.22	.144	.887
	Private	2.50	1.40		
Overall HODs responses about engagement of people	Public	2.89	.58	.479	.636
	Private	2.78	.59		

Note. df= 26 N=28(public=14; private=14)

In table 4.14, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.128) shows that there is no difference in the view of both sectors' HODs (HODs from public sector universities *M*=3.14, *SD*=1.56, and HODs from private sector universities *M*=3.07, *SD*=1.38) related to "university management forms, various teams, to solve HODs problems." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.362) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.42, *SD*=1.78, HODs from

private sector universities *M*=3.21, *SD*=1.31) related to "HODs are involved in course review."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.224) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.14, *SD*=1.70, and HODs from private sector universities *M*=3.00, *SD*=1.66) related to "HODs are involved in program review." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.159) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.28, HODs from private sector universities *M*=2.50, *SD*=1.09) related to "departments at the university has collaboration with international universities." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.147) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.22, and HODs from private sector universities *M*=2.42, *SD*=1.34) related to "departmental meetings of the staff are regularly

conducted to address quality problems of academic program."

The respondents' opinion was further sought in the next statement that, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.144) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.22, and HODs from private sector universities *M*=2.50, *SD*=1.40) related to "each course contents are developed after discussions with external staff with expertise in that particular area." Overall, both sectors mean score of the HODs was compared through an

independent sample t-test. t-test result (*t*=.479) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.89, *SD*=.58, HODs from private sector universities *M*=2.78, *SD*=.59).

Table 4.15

HODs Responses about the Process Approach

Statement	Sector	Mean	SD	t-value	Sig
University has a transportation facility.	Public	3.28	1.13	1.387	.177
	Private	2.57	1.55		
University has central support for research.	Public	2.57	1.50	.270	.789
	Private	2.42	1.28		
University has a sufficient medical facilities	Public	2.57	.75	.179	.859
	Private	2.50	1.28		
University has a sufficient financial resources.	Public	2.28	.75	-.320	.752
	Private	2.42	1.28		
University has a sufficient hostel facility.	Public	2.28	1.13	-.467	.645
	Private	2.50	1.28		
University has adequate internet access.	Public	2.28	1.32	-.467	.645
	Private	2.50	1.09		
University has a sufficient library facility.	Public	2.50	.94	-.193	.848
	Private	2.57	1.01		
University has sufficient cafeteria services.	Public	2.50	1.01	.360	.722
	Private	2.35	1.08		
Overall HODs responses about process approach	Public	2.53	.31	.440	.663
	Private	2.48	.33		

Note. df= 26 N=28(public=14; private=14)

In table 4.15, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=1.387) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.28, *SD*=1.13, and HODs from private sector universities *M*=2.57, *SD*=1.55) related to "university has a transportation facility." On the other statement, both sectors mean

score of the HODs was compared through an independent sample t-test. t-test result (*t*=.270) shows that there is no difference in the view of both sectors HODs(HODs from public sector universities *M*=2.57, *SD*=1.50, HODs from private sector universities *M*=2.42, *SD*=1.28) related to "university has a central support for research." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.179) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=.75, HODs from private sector universities *M*=2.50, *SD*=1.28) related to "university has sufficient medical facilities."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.320) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities M=2.28, SD=.75, and HODs from private sector universities *M*=2.42, *SD*=1.28) related to "university has a sufficient financial resources." In the next statement, both sectors' mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.467) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.28, *SD*=.75 HODs from private sector universities *M*=2.42, *SD*=1.28) related to "university has a sufficient hostel facility." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=-.467) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.28, *SD*=1.32, and HODs from private sector universities *M*=2.50, *SD*=1.09) related to "university has adequate internet access."

In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.193) shows that there is no

difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=.94, and HODs from private sector universities *M*=2.57, *SD*=1.01) related to "university has a sufficient library facility." On the other statement, both sectors' mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.360) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.01, and HODs from private sector universities *M*=2.35, *SD*=1.08) related to "university has sufficient cafeteria services." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.440) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.53, *SD*=.31, HODs from private sector universities *M*=2.48, *SD*=.33).

Table 4.16

HODs Responses about Improvement

Statement	Sector	Mean	*SD*	t-value	Sig
University management develop training program for HODs/teachers.	Public	2.21	1.47	.149	.883
	Private	2.14	1.02		
HODs/teachers are provided with opportunities to improve their qualifications.	Public	2.50	1.69	.126	.901
	Private	2.42	1.28		
There is a support for continuous professional development for HODs/teachers.	Public	2.57	1.82	.577	.569
	Private	2.21	1.42		
Sufficient funds for research are allocated in the university.	Public	2.35	1.54	.263	.794
	Private	2.21	1.31		
HODs/teachers are encouraged to conduct research studies.	Public	2.21	1.25	-.299	.767
	Private	2.35	1.27		
Market research is conducted for the proposed program by the university.	Public	2.57	1.55	.603	.522
	Private	2.21	1.57		
University has an effective system for faculty to make suggestions to management on how to improve quality.	Public	2.57	1.22	1.333	.194
	Private	2.00	1.07		
Overall HODs responses about improvement	Public	2.42	.79	.802	.430
	Private	2.22	.52		

Note. df= 26 N=28(public=14; private=14)

In table 4.16, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.149) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.21, *SD*=1.47, and HODs from private sector universities *M*=2.14, *SD*=1.02) related to "university management develop a training program for HODs." In the second statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.126) shows that there is no difference in the view of both

sectors HODs (HODs from public sector universities *M*=2.50, *SD*=1.69 and HODs from private sector universities *M*=2.42, *SD*=1.28) related to "HODs are provided opportunities to improve their qualifications." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.577) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.82, HODs from private sector universities *M*=2.21, *SD*=1.42) related to "there is a support for continuous professional development for HODs." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.263) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.35, *SD*=1.54, and HODs from private sector universities *M*=2.21, *SD*=1.31) related to "sufficient funds for research are allocated in the university."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.299) shows that there is no difference in the view of both sectors' HODs (HODs from public sector universities *M*=2.21, *SD*=1.25, HODs from private sector universities *M*=2.35, *SD*=1.27) related to "HODs are encouraged to conduct research studies." In the next statement, both sectors' mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.603) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.55, HODs from private sector universities *M*=2.21, *SD*=1.57) related to "market research is conducted for the proposed program by the university." On the other statement, both sectors' mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=1.333) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.57, *SD*=1.22, HODs from private sector universities *M*=2.00,

SD=1.03) related to "university has an effective system for faculty to make suggestions to management on how to improve quality." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.802) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.42, SD=.79, HODs from private sector universities *M*=2.22, *SD*=.52).

Table 4.17

HODs Responses about Evidence-Based Decision Making

Statement	Sector	Mean	*SD*	t-value	Sig
A manual of the quality assurance system exists at the university.	Public	3.42	1.28	.587	.562
	Private	3.14	1.29		
Details of the staff involved in quality assurance and control arrangements are available	Public	3.64	1.00	.699	.491
	Private	3.35	1.15		
Transfers in and out of programs or courses to facilitate teachers are clearly recorded.	Public	3.50	1.40	-.434	.668
	Private	3.71	1.20		
The records of all resources are up to date and available.	Public	4.00	1.24	1.755	.091
	Private	3.07	1.54		
Detail of learning activities is available to the teachers.	Public	3.35	1.21	-1.254	.221
	Private	3.85	.86		
Overall HODs responses about evidence based decision making	Public	3.58	.45	.714	.482
	Private	3.42	.68		

Note. df= 26 N=28(public=14; private=14)

In table 4.17, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.587) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.42, *SD*=1.28, and HODs from private sector universities *M*=3.14, *SD*=1.29) related to "a manual of the quality assurance system exists at the university." In the second statement, both sectors mean score of the HODs was compared through an independent

sample t-test. The t-test result (*t*=.699) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.64, *SD*=1.00 HODs from private sector universities *M*=3.35, *SD*=1.15) related to "details of the staff involved in quality assurance and control arrangement is available." On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=-.434) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.50, *SD*=1.40, HODs from private sector universities *M*=3.71, *SD*=1.20) related to "transfers in and out of programs or courses to facilitate teachers are clearly recorded."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=1.755) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=4.00, *SD*=1.24, HODs from private sector universities *M*=3.07, *SD*=1.54) related to "the records of all resources are up to date and available." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-1.254) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.35, *SD*=1.21, HODs from private sector universities *M*=3.85, *SD*=.68) related to "detail of learning activities is available to the teachers." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=.714) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=3.58, *SD*=.46, HODs from private sector universities *M*=3.42, *SD*=.44).

Table 4.18

HODs Responses about Relationship Management

Statement	Sector	Mean	*SD*	t-value	Sig
HODs/teachers have regard for each other's opinion.	Public	3.00	1.56	.687	.498
	Private	2.64	1.15		
The department has effective links with other institutions.	Public	3.57	.85	2.575	.011
	Private	2.64	.92		
Detail regarding the availability of all learning resources is communicated to HODs/teachers.	Public	2.78	1.47	-.142	.888
	Private	2.85	1.16		
University strives to establish long-term relationships with HODs/teachers.	Public	2.78	1.25	1.486	.149
	Private	2.14	1.02		
University has an effective communication flow of information between departments.	Public	3.57	1.15	1.965	.060
	Private	2.64	1.33		
Overall HODs responses about relationship management	Public	3.14	.46	3.274	.003
	Private	2.58	.44		

Note. df= 26 N=28(public=14; private=14)

In table 4.18, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=.687) shows that there is no difference in the view of both sectors HODs ((HODs from public sector universities *M*=3.00, *SD*=1.56, HODs from private sector universities *M*=2.64, *SD*=1.15) related to "HODs have regard for each other's opinion." In the second statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=2.757) shows that there is a difference in the view of both sectors' HODs (HODs from public sector universities *M*=3.57, *SD*=.85, HODs from private sector universities *M*=2.64, *SD*=.92) related to "the department has effective links with other institutions." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=-.142) shows that there is no difference in the

view of both sectors HODs (HODs from public sector universities *M*=2.78, *SD*=1.47, HODs from private sector universities *M*=2.85, *SD*=1.16) related to "detail regarding the availability of all learning resources is communicated to HODs."

On the other statement, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=1.486) shows that there is no difference in the view of both sectors HODs (HODs from public sector universities *M*=2.78, *SD*=1.25 HODs from private sector universities *M*=2.14, *SD*=1.02) related to "university strives to establish long-term relationships with HODs." In the next statement, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=1.965) shows that there is no difference in the view of both sectors' HODs (HODs from public sector universities *M*=3.57, *SD*=1.15, and HODs from private sector universities *M*=2.64, *SD*=1.33) related to "university has an effective communication flow of information between departments." Overall, both sectors mean score of the HODs was compared through an independent sample t-test. t-test result (*t*=3.274) shows that there is a difference in the view of both sectors HODs (HODs from public sector universities *M*=3.14, *SD*=.46 HODs from private sector universities *M*=2.58, *SD*=.44). Public sector HODs' mean score was high.

Table 4.19

Overall HODs Responses about Quality Management Practices

Sector	Mean	*SD*	t-value	Sig
Public	2.84	.15	3.657	.001
Private	2.61	.17		

Note. df= 26 N=28(public=14; private=14)

In table 4.19, both sectors mean score of the HODs was compared through an independent sample t-test. The t-test result (*t*=3.657) shows that there is difference in the view of both sectors HODs (HODs from public sector universities *M*=2.84, *SD*=.15 HODs from private sector universities *M*=2.61, *SD*=.17). Public and private sector HODs' mean score was medium.

Table 4.20

HODs Responses about Challenges

Challenges			SA	A	UD	DA	SDA
Lack of top management commitment	Public	Frequency	6	**7**	1	0	0
		Percentage	42.6%	50.0%	7.1%	0%	0%
	Private	Frequency	8	6	0	0	0
		Percentage	57.1%	42.9%	0%	0%	0%
Time management	Public	Frequency	4	6	0	1	3
		Percentage	28.6%	42.9%	0%	7.1%	21.4%
	Private	Frequency	4	2	4	0	4
		Percentage	28.6%	14.3%	28.6%	0%	28.6%
Resistance to change	Public	Frequency	5	8	1	0	0
		Percentage	35.7%	57.1%	7.1%	0%	0%

	Private	Frequency	4	7	2	1	0
		Percentage	28.6%	50.0%	14.3%	7.1%	0%
Existence of accreditation	Public	Frequency	7	7	0	0	0
		Percentage	50.0%	50.0%	0%	0%	0%
	Private	Frequency	7	5	2	0	0
		Percentage	50.0	35.7	14.3	0	0
Lack of planning	Public	Frequency	4	9	1	0	0
		Percentage	28.6%	64.3%	7.1%	0%	0%
	Private	Frequency	4	7	0	0	3
		Percentage	28.6%	50.0%	0%	0%	21.4%
Lack of funding	Public	Frequency	5	9	0	0	0
		Percentage	35.7%	64.3%	0%	0%	0%
	Private	Frequency	9	4	0	0	1
		Percentage	64.3%	28.6%	0%	0%	7.1%
Lack of proper professional training	Public	Frequency	5	5	1	2	1
		Percentage	35.7%	35.7%	7.1%	14.3%	7.1%
	Private	Frequency	7	5	1	0	1
		Percentage	50.0%	35.7%	7.1%	0%	7.1%
Lack of awareness	Public	Frequency	5	6	1	0	2
		Percentage	35.7%	42.9%	7.1%	0%	14.3%
	Private	Frequency	4	6	0	1	3
		Percentage	28.6%	42.9%	0%	7.1%	21.4%
Lack of resources	Public	Frequency	4	7	3	0	0
		Percentage	28.6%	50.0%	21.4%	0%	0%

	Private	Frequency	4	7	1	0	2
		Percentage	28.6%	50.0%	7.1%	0%	14.3%
Inappropriate university culture for implementation of quality management	Public	Frequency	4	5	1	0	4
		Percentage	28.6%	35.7%	7.1%	0%	28.6%
	Private	Frequency	4	5	0	1	4
		Percentage	28.6%	35.7%	0%	7.1%	28.6%

In table 4.20 public sector HODs considered lack of top management commitment as a challenge 42.6% strongly agree, 50.0% agree, 7.1% undecided, 0% disagree, and 0% strongly disagree. Private sector HODs considered a lack of top management commitment as a challenge 57.1% strongly agree, 42.9% agree, 0% undecided, 0% disagree, and 0% strongly disagree. Time management as a challenge considered by public sector HODs 28.6% strongly agree, 42.9% agree, 0% undecided, 7.1% disagree, and 21.4% strongly disagree. On the other side, private sector HODs responses regarding time management as a challenge shows that 28.6% strongly agree, 14.3% agree, 28.6% undecided, 0% disagree, and 28.6% strongly disagree.

Data about resistance to change as a challenge from public sector HODs responses show that 35.7% strongly agree, 57.1% strongly agree, 7.1% agree, 0% undecided, 0% disagree, and % strongly disagree. As private-sector HODs responses show that 28.6% strongly agree, 50.0% agree, 14.3% undecided, 7.1% disagree, and 0% strongly disagree regarding resistance to change. As regards the existence of accreditation public-sector HODs responses show that 50.0% strongly agree, 50.0% agree, 0% undecided, 0% disagree, and 0% strongly disagree. Private sector HODs responses show that 50.0% strongly agree, 35.7% agree, 14.3% undecided, 0% disagree, and 0% strongly disagree regarding existence of accreditation. Lack of

planning as a challenge considered by public sector HODs 28.6% strongly agree, 64.3% agree, 7.1% undecided,0 % disagree, and 0% strongly disagree. Private sector HODs responses show that 28.6% strongly agree, 50.0% agree, 0% undecided, 0% disagree, and 21.4% strongly disagree regarding lack of planning. Data on lack of funding as a challenge from public sector HODs responses show that 35.7% strongly agree, 64.3% agree, 0% undecided, 0% disagree, and 0% strongly disagree. Private sector HODs responses show that 64.3% strongly agree, 28.6% agree, 0% undecided, 0% disagree, and 7.1% strongly disagree regarding lack of funding.

As regards lack of proper professional training public-sector HODs responses show that 35.7% strongly agree, 35.7% agree, 7.1% undecided, 14.3% disagree, and 7.1% strongly disagree. Private sector HODs responses show that 50.0% strongly agree, 35.7% agree, 7.1% undecided, 0% disagree, and 7.1% strongly disagree regarding the lack of proper professional training. Public sector HODs considered lack of awareness as a challenge 35.7% strongly agree, 42.9% agree, 7.1% undecided, 0% disagree, and 14.3% strongly disagree. Private sector HODs responses show that 28.6% strongly agree, 42.9% agree, 0% undecided, 7.1% disagree, and 21.4% strongly disagree regarding lack of awareness. Public sector HODs responses regarding lack of resources as a challenge show that 28.6% strongly agree, 50.0% agree, 21.4% undecided, 0% disagree, and 0% strongly disagree Private sector HODs responses show that 28.6% strongly agree, 50.0% agree, 7.1% undecided, 0% disagree, and 14.3% strongly disagree regarding the lack of resources. Public sector HODs responses regarding inappropriate university culture for implementation of QMS as a challenge show that 28.6% strongly agree, 35.7% agree, 7.1% undecided, 0% disagree, and 28.6% strongly disagree. Private sector HODs responses show that 28.6% strongly agree, 35.7% agree,

0% undecided, 7.1% disagree, and 28.6% strongly disagree regarding inappropriate university culture for implementation of quality management.

4.2 Section B: Qualitative Section (Semi-Structured Interview)

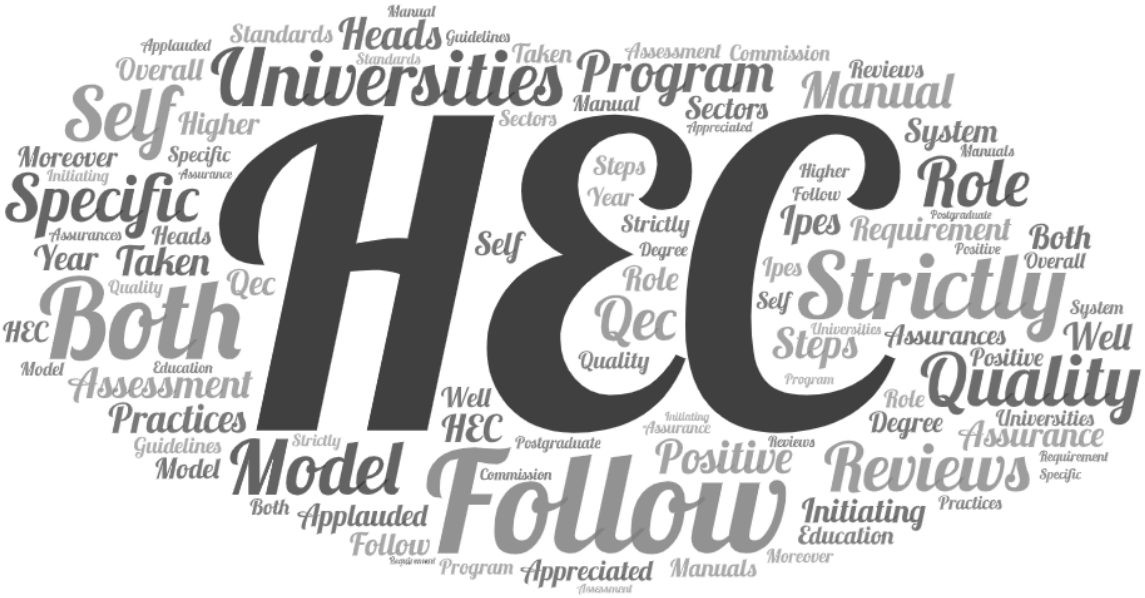
Analysis of demographic shows that fourteen QEC directors were interviewed with a 100% response rate. Twelve were males and two were females. Five were directors, six were deputy directors and three were assistant directors. One was postdoc qualification, three Ph.D., two M.Phil. and eight master's degrees. The majority of them have more than five years of management experience.

This research is based on the process of investigating the quality management system practices ISO 9001:2015 in universities. Directors of QEC of both sector universities formed the population of the study. In sum, fourteen participants one participant from one university were selected. Purposive sampling was selected for the interview of the participants. Based on participants associated with the university they were selected. In the absence of the QEC director, the assistant director or additional director was interviewed. Data was collected with the help of a semi-structured interview. Moreover, in a personal visit, the interview was conducted at the office of the QEC directors, assistant directors and deputy directors to address and communicate questions at their offices as well as online interview was conducted also. QEC is based on four persons as head, assistant, data analyst, and attendant.

1. What is the specific model of quality management that follows at your university?

Figure 5

Word Clouds for a Specific Model of the Quality Management



In the public sector university, one of the assistant director expressed that

"There is no specific model we strictly follow the HEC self-assessment manual and requirement."

In private sector universities directors of QEC also give credit to higher education commission requirements and manual.

All the directors of QEC appreciated the positive role of HEC and the steps that were taken for a quality management system. Moreover, both universities strictly follow the standards of the higher education commission. Overall universities of both sectors follow HEC guidelines and manuals as well as IPEs, degree program reviews, and postgraduate program reviews every year.

2. Are you aware of the international standard of quality management ISO 9001:2015?

Figure 6

Word Clouds for Principles

One of the director from the public sector university describe that

"Yes, this system is a requirement of a quality management system. When an organization needs to demonstrate the quality of this ability and constantly provision of products and services also focuses on customer satisfaction. Its focus on quality management."

One of the director from the private sector university said that

"As you know this ISO 9001:2015 has seven principles customer focus, leadership, people involvement, process approach, improvement, evidence-based decision making, and relationship management. So we are aware of these principles."

Almost all participants were aware of these seven principles of the ISO 9001:2015 quality management system some were aware of its name. Most essential principles was customer focus.

3. What is the system of awareness of quality management at your institution?

Figure 7

Word Clouds for System of Awareness of Quality Management

QEC conducted seminars at the university for students and faculty. The Director of the public sector university says that

"Meetings, conference, workshops, and seminar has been conducted for QM/QAS."

Another public sector university director mentioned that

"Yes, from time to time we conduct the seminar, invite speakers from different institutes, and also invite our faculty and staff to listen to how our university brings quality to the system. So normally through a seminar."

Whereas in director from a private sector university says that

"We follow the policies of regulators. Regulators mean HEC. HEC guides the universities on what to do and what not to do. Universities usually in Pakistan do not have a very good quality management system. Usually, universities arrange seminars."

Another private sector university assistant director mentioned that

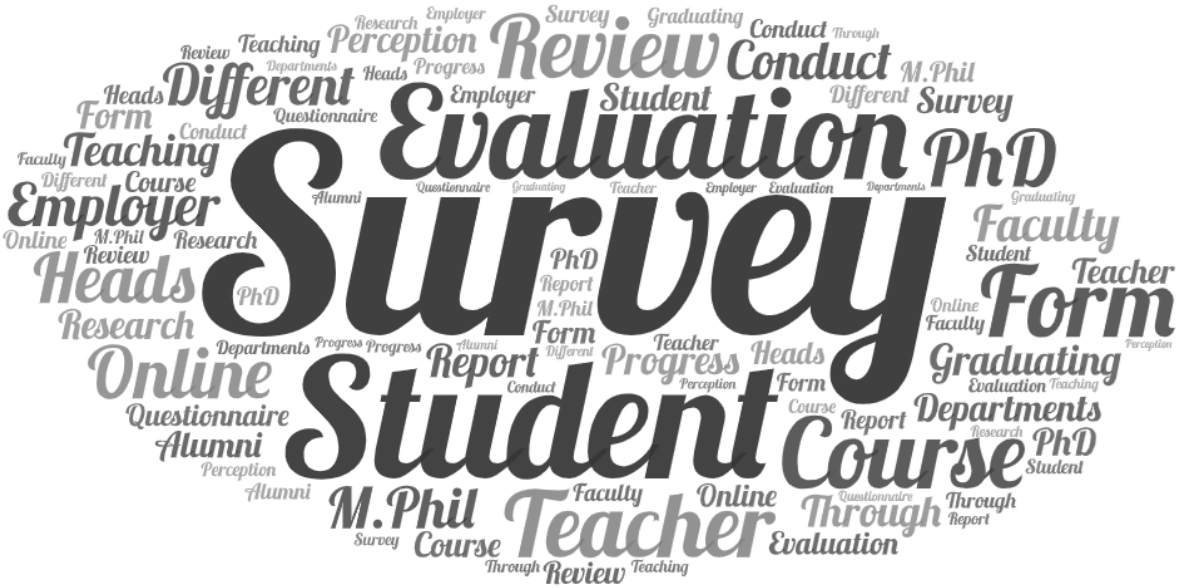
"Meetings, conferences, workshops, and seminars have been conducted."

Public sector universities conducted seminars, conferences, training, webinars, meeting, awareness session, and workshops. As well as invite speakers from other universities. Private sector universities also conduct seminars, awareness sessions, workshops, and invite speakers from other universities. Overall seminars, workshops, webinars, training, speakers, and different experts invited to universities, etc., for awareness of quality management.

4. What system to implement HEC criteria at the university?

Figure 8

Word Clouds for HEC Criteria Implementation



One of the director from the private sector university said that

"*Quality assurance manual, a resource guide, criteria of faculty appointment, self-assessment manual criteria of plagiarism checking of HEC/QEC and HEC Performa. QEC at the university establish for implementing HEC quality criteria maintenance. A self-assessment report from each department prepared regarding their program at each department."*

Participants from private sector university say that self-assessment regarding QEC compliance files these documents were collected through a survey on an institutional level for verifying the effectiveness and weak areas were highlighted during the process of assessment. Self-assessment reports provide a systematic guideline. HODs, administration and faculty members meet the criteria for increasing the quality of universities. It covers the vision, mission, objectives, and outcome of the

program at the department level. Moreover, strategic plans and goals, establish for meeting the vision and mission. Program team members are responsible for monitoring the results.

For the promotion of higher standards, QEC is responsible for education and research in the universities and sustaining quality evaluation and assurance standards. The process of (SAR) self-assessment report is written at institutional and program levels. University has developed (SARs) for meeting HEC criteria and policies laid down for students and faculty at the department level. Universities have all the records of students, academic and non-academic staff, and other related activities.

Another director from the public sector university says that

"*Rules and regulation essential policies, book compressing assessment teams formatted conducted a review for complying program in line with the guideline of HEC to enhance quality. QEC conducted reviews of self-assessment at the department level with a specialist and faculty members for taking corrective actions in the form of an executive summary result of self-assessment was presented to the vice-chancellor."*

In the private sector, the university director mentioned that

"Heads of different departments conduct different surveys like student teachers evaluation, course evaluation, employer survey, graduating student's survey."

One of the director from the public sector university mentioned that

"quality enhancement cell in the university strictly following the standards set by HEC 11 standards you may know that HEC normally checks the performance of any institute in Pakistan through 11 standards related to the vision and mission of the university its integrity, its students, its curriculum, its resources, and financial budget another thing. So we are the following system under that system we ask the section

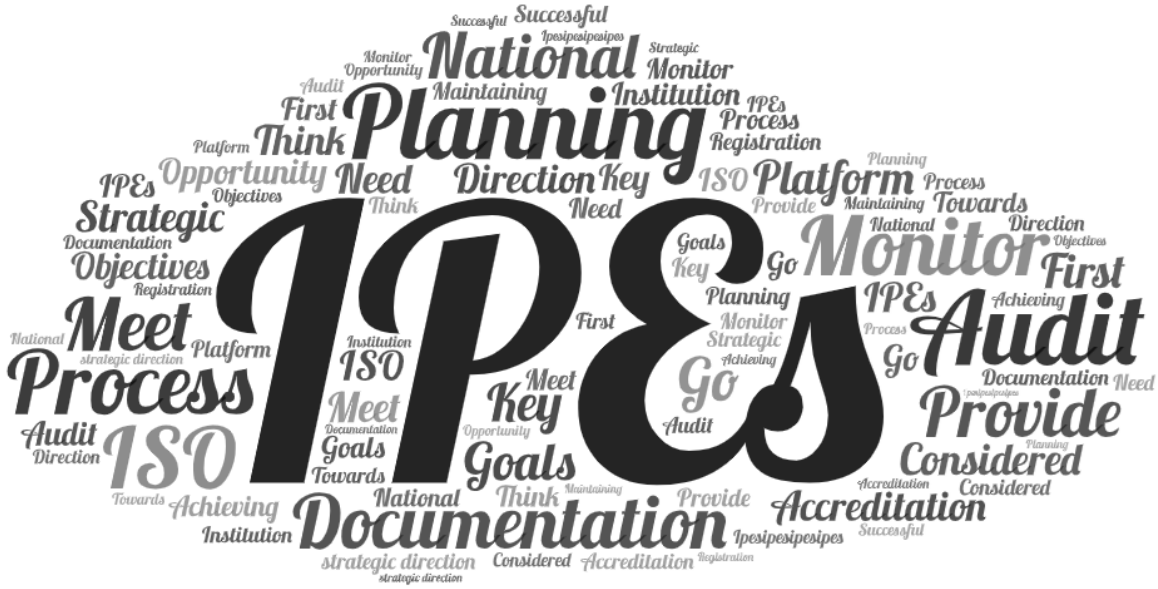
heads of different departments to conduct different surveys like student teachers evaluation, course evaluation, employer surveys, and graduating students' surveys through the perception of our customers because our consumers are our clients. After all, we considered our students our customers if they are satisfied it means that we are bringing quality into our system."

Moreover, public and private sector university participants say that they strictly follow the standards set by HEC. Eleven standards relate to the vision and mission of the university its integrity, its students, its curriculum, its resources, financial budget, etc. Heads of different departments conduct different surveys like student teachers evaluation, course evaluation, employer surveys, graduating student's surveys, M.Phil. Ph.D. reviews through the perception of the teacher evaluation form , faculty course review report, research student progress review form, faculty survey, alumni survey, faculty appointment criteria, research paper criteria.

5. How are you integrating quality management policies for ISO 9001:2015 into future planning?

Figure 9

Word Clouds for Integrating Quality Management Policies for ISO 9001:2015



In the public sector, the university director mentioned that

"*The documentation, monitoring, and audit processes meet the institution's goals and objectives. Establish quality standards particularly meet and exceed customer expectations. Customer means students."*

One of the director from the public sector university mentioned that

"*During the process of IPEs HEC community members recommended that to get ISO certification for more improvement of quality. I think IPEs provide a pathway to go towards ISO 9001:2015 certification."*

Another director from the private sector university describe that

"Documentation of different key performance areas provide a direction to go towards ISO 90012015."

One of the director from the public sector university says that

"When we do the future planning we considered our vision and mission first. Why this university was established. So when we look at the ISO certification because it is customer focus so whenever we start any program, any process anything we first look into how our client means our students will be satisfied with the particular initiatives with the university. So, we considered that to some extent after IPEs."

The private sector director and assistant mentioned that there is a lack of customer focus. For this, we need proper internationally recognized certification. For attracting students after IPEs we can go towards ISO 9001:2015 international certification.

Another private-sector assistant director said that

"Planning is a key for achieving and maintaining success. I think first we need planning and after successful national accreditation, we go towards ISO 9001:2015."

Moreover implementing and integrating IPEs will provide a platform. For university quality assurance policies provide strength for the quality of education. The key focus is on research, teaching, and administrative support. For making improvements in the system regular feedback is taken from faculty members and students. For attracting students improvement in the existing system and strategic planning is very essential for getting ISO certification in the future. As well as when doing future planning we considered our vision and mission but the universities vision and mission and its objectives are not attractive and do not provide a futuristic approach

based on quality management. All integration needs strong management commitment and HEC support essential for getting certification after IPEs.

It was found that from private sector universities documentation of different key performance areas provides a direction to go towards QM ISO 90012015. Moreover, planning, monitoring, strategic direction, IPEs, improvement in existing system as well as HEC initiatives are keys for achieving international accreditation. For public sector universities documentation, monitoring, planning, strategic direction, IPEs, improvement in existing system, awareness among top management and audit process, HEC initiatives are very essential. It was found that in public and private universities implementation and integration of IPEs will provide a platform for university quality management policies. As public and private sector universities have the potential to some extent for the promotion and enhancement of ISO 9001:2015 after IPEs. The key focus is on research, teaching, and administrative support. For improvement in the system regular feedback is taken from faculty members and students.

6. What are the main challenges of a low number of ISO 9001:2015 certifications in universities?

Figure 10

Word Cloud for Challenges

One of the public sector director says that:

"Shortage of funds and lack of improvement plans at the department level, which need immediate attention. Resistance to change in university is stronger than in other organizations. Another challenge is a lack of awareness. Lack of awareness about the process of implementation of quality, lack of continuous improvement and involvement of staff and faculty members and their level of cooperation."

One of the public sector assistant director says that:

"Lack of commitment of top management, resistance to change, the existence of accreditation, lack of incentives and rewards are big challenges."

Another public sector assistant director mentioned the challenges such as:

"Lack of planning and resources, time management, inappropriate university culture for the implementation of ISO 9001, as well as lack of training."

One of the public sector director mentioned the challenges such as:

"Lack of top management commitment, lack of technical knowledge and internal audits."

One of the private sector director mentioned that:

"Resources unavailability is another challenge it includes human and financial resources. Another challenge is the commitment of top management because without the support of top management quality management cannot be implemented."

Another director from the private sector says that:

"Time management, the existence of accreditation, lack of planning, lack of incentives and rewards, and resistance to change are other challenges."

One of the private sector assistant director mentioned the challenges such as:

"Lack of training, lack of awareness, workload."

Moreover, challenges of public and private sector universities QEC respondents highlighted as a lack of top management commitment and improvement policies for maintaining standards of quality, lack of basic resources such as internet, transportation, hostel, research facilities, library, medical facilities, funding and lack of training of staff members related to quality matters were another challenges. As universities are already accredited by HEC. So it is confusing for universities to replace QMS with ISO 9001. The existence of accreditation was a challenge. As university personnel is already overloaded with academic and administrated tasks. In this way going toward

international accreditation was also a challenge because of time management, inappropriate culture, and workload. Lack of awareness and resistance to change was a challenge that highlighted respondents of the study. Lack of planning and professional training for academic and nonacademic staff was also a challenge because university top management has a lack of focus on planning and internal audits to go towards international accreditation. Inappropriate system of reward. Rewards and incentives play an important role in moving the staff member to achieve their target on time. Lack of technical knowledge and lack of training was also a challenge. Lack of top management and staff involvement in ISO requirements was also highlighted. As well as respondents from public sector universities mentioned challenges such as lack of rewards and incentives, lack of people involvement, lack of internal audits, lack of technical knowledge from private sector universities workload, lack of people involvement, lack of rewards and incentives were challenges found additionally in the qualitative study.

7. How can universities get ISO 9001:2015 certification in the future?

Figure 11

Word Clouds for Initiatives

One of the assistant director of a public sector university says that:

"*It is strongly recommended that attractive salary packages with educational facilities should be provided. A proper service structure should be approved so that they feel satisfied."*

Director from the public sector university mentioned that:

"Involvement of HEC is essential for international accreditation. The leadership of the university needs to understand the importance of a quality management system. Training courses for the awareness of ISO 9001 QM must be designed for the application of skills and continuous improvement. Provide proper financial and material resources for ISO 9001 application."

Respondents of the public sector universities expressed that if HEC set criteria and orders notification for international accreditation then university becomes the part

of QMS practices at a global level. Moreover, giving rewards and incentives to universities for their best performance will increase healthy competition and motivation among university team members and they will perform excellently. Moreover, give proper training to staff for better results. The most essential step regarding QMS implementation is that assign jobs to the new dedicated staff who are trained for the required purpose for implementation of a quality management system. Give awareness to universities about ISO certification with its benefits because the existence of accreditation of universities through IPEs may provide help for getting world admires certification. HEC needs to focus on special funds for ISO 9001: 2015 certification.

Initiatives highlighted by private sector universities were attractive salary packages with educational facilities, leadership involvement, knowledge, rewards and incentives, special funds, involvement of HEC, mention selection criteria for staff, and a proper service structure. Initiatives highlighted by public sector universities were attractive salary packages with educational facilities, leadership involvement, training courses, proper planning, create awareness, knowledge, rewards and incentives, special funds, and involvement of HEC are essential for international accreditation. Both public and private universities respondents express that top management is the decision-makers. Proper planning, involvement, and commitment are very important allowing universities to become learning organization that is based on continuous improvement. As well as need to build a strong relationship with other departments and universities that are working at national and international levels. Moreover, attractive salary packages, rewards, incentives, give proper training courses, resources, and technical knowledge involvement of staff in different activities are essential for better results.

4.3 Integration of Results

Parallel quantitative and qualitative research was conducted for assessing the purpose of quality management practice in universities concerning ISO 9001:2015. Two methodological approaches: quantitative (questionnaire) and qualitative (interview) utilized. Analysis of the questionnaire and interview results are as under.

Regarding customer focus, some areas mean score was low such as counselling support for teachers, teachers involved in decision-making, officials' are easily available to the teachers, arranges career development services for teachers, management has a system for taking teachers views, teachers are awarded for performing well. Moreover, QEC directors also highlighted that involvement of people is essential for quality management system implementation. In addition, leadership, needs a clear vision, mission, and objectives. Policy for quality and maintenance standards, lack of resources for quality improvement efforts, lack of long-term planning at the departmental level, identifications of job specifications, and decisions based on factual information. QEC directors added that the top management is the decision making.

Lack of involvement of top management in creating a quality environment is the challenge. Top management commitment and resources available are very essential for the implementation of ISO 9001:2015. Regarding engagement of people, lack of the departmental collaboration with international universities, and lack of involvement of external experts in program review. QEC directors suggest that the involvement of people in different activities is essential. Regarding the process approach, medical, internet, cafeteria, financial resources, as well as lack of central support for research, was unavailable. QEC directors' highlighted the importance of resource allocation without resources work doesn't complete smoothly. Regarding improvement lack of research and development, lack of opportunities for improving qualification, lack of

opportunities for continuous professional development, insufficient funds for research, lack of opportunities for encouraging research system for improving quality, lack of market-based research, lack of an effective system for faculty to make suggestions to management on how to improve quality, as well as lack of training was highlighted. QEC director says that training courses are essential for better results. Leadership, improvement, and process approach practices results were not satisfactory while both sector teachers, HODs, and QEC directors were satisfied with evidence-based decision making. Regarding relationship management lack of opportunities to establish long-term relationships with HODs/teachers.

Challenges found by teachers and HODs from public and private universities were a lack of top management commitment, lack of awareness, lack of planning, time management, lack of funding, the existence of accreditation, lack of proper professional training, lack of resources, inappropriate university culture and resistance to change. As public and private QEC directors also highlighted challenges such as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, the commitment of top management, lack of training, the existence of accreditation, inappropriate culture, incentives and rewards, resources, workload, planning, and resistance to change.

The quantitative data results also suggested that both sectors need improvement in some areas for getting ISO 9001:2015 certification. If both sector universities overcome the challenges they can get ISO 9001:2015 certification. Additionally, in the interview, both sectors universities QEC directors say that they follow the HEC self-assessment manual and requirements some universities are in process but they follow HEC guidelines. Moreover, in both public and private sector universities all QEC

directors aware of ISO 9001:2015 expect some awareness of its name. ISO 9001:2015 has seven principles. Overall public and private sector universities conduct seminars, workshops, webinars, training, invite speakers, and different experts in universities, etc. for awareness of QMS.

Universities strictly follow the eleven standards set by HEC. Standards relate to the vision and mission of the university, its planning and evaluation, its integrity, its organization and governess, its faculty, its students, its curriculum, its resources, its financial budget, its assessment, it's public disclosure, and transparency, its support service, etc. Heads of different departments conduct different surveys like student teachers evaluation, course evaluation, employer surveys, graduating student's surveys, M.Phil. Ph.D. reviews through the perception of teacher evaluation form, teacher evaluation form (online teaching), student course evaluation questionnaire (online teaching), faculty course review report, research student progress review form, graduating student survey, faculty survey, alumni survey, and employer survey.

Implementing and integrating IPEs may provide a platform. For university quality assurance policies provide the quality of education. The key focus is on research, teaching, and administrative support. For improving in system regular feedback is taken from faculty members and students. Moreover, documentation of different key performance areas provides a direction to go towards ISO 90012015. Challenges highlighted by both public and private sectors were a shortage of funds, lack of awareness, lack of planning, unavailability of human and finical resources, a commitment of top management, lack of training of staff members existence of accreditation, time management, and workload, an inappropriate system of reward, lack of technical knowledge and lack of training were also the challenges.

If HEC set criteria and orders notification for international accreditation then the university becomes part of the QM practices at a global level. Give rewards and incentives to universities for their best performance this will increase healthy competition and motivation among university team members and they will perform excellently. Moreover, give proper training to staff for better results. Assign jobs to the new dedicated staff who are trained, special funds, and give awareness to universities about ISO certification with its benefits, top management is the decision-makers. Proper planning and their involvement and commitment are very important. The qualitative data results also suggested that HEC needs some initiatives for getting international certification. ISO 9001: 2015 study found some challenges for the implementation. The quantitative study confirms these results and found almost the same challenges. Lack of rewards and incentives, lack of staff involvement, lack of internal audits, workload, lack of technical knowledge, the resistance of employees, and lack of human resources were challenges found additionally in the qualitative study.

Table 4.21

Major Results

Quantitative	Qualitative
Customer focus public sector medium satisfied, (teachers and HODs) private sector low satisfied, (teachers and HODs)	*So when we look at the ISO certification because it is customer focus so whenever we start any program, any process anything we first look into how our client means our students will be satisfied with the particular initiatives with the university. (*public sector director *)* *Establish quality standards particular meet and exceed customer expectations. Customer means students. There is a lack of customer focus. (* private sector director*)* The private sector director and assistant director mentioned that there is a lack of customer focus. For this, we need proper internationally recognized certification for attracting students.
Leadership both sectors were low satisfied, (teachers and HODs)	Lack of top management commitment. Because without the support of top management, QM cannot be implemented. *(*private sector director*)* Lack of top management commitment (Assistant director, public sector director)
Engagement of people both sectors were medium satisfied, (teachers and HODs)	Different departments conduct different surveys like student teachers evaluation, course evaluation, employer surveys, graduating student's surveys, M.Phil. Ph.D. reviews through the perception of the teacher evaluation form, teacher evaluation form (online teaching), student course evaluation questionnaire (online teaching), faculty course review report, and research student progress review form, graduating student survey, faculty survey, alumni survey, employer survey.

Process approach both sectors were low satisfied, (teachers and HODs)	*Resources unavailability is another challenge it includes human and financial resources. (*Private sector director*).* *Proper financial and material resources should be provided.* *Educational facilities should be provided.* *(*Public sector director*).*
Improvement both sectors were low satisfied, (teachers and HODs)	Lack of technical knowledge and lack of training. Top management is the decision-makers. Proper planning, involvement, and commitment are very important allowing universities to become learning organization that is based on continuous improvement. (public and private sector director and assistant director)
Evidence-based decision making both sectors were highly satisfied, (teachers and HODs)	*Documentation of different key performance areas provides a direction to go towards ISO 9001:2015. (*director from the public sector*)* *Quality assurance manual, a resource guide, criteria of faculty appointment, self-assessment manual criteria of plagiarism checking of HEC/QEC and HEC Performa. (* private sector university director *)*
Relationship management Public medium satisfied while private were low satisfied, (teachers and HODs)	*Meetings, conference, workshops, and seminar has been conducted for QM/QAS. Invite speakers from different institutes, and also invite our faculty and staff to listen to how our university brings quality to the system.* (Public sector university director). *Universities usually in Pakistan do not have a very good quality management system.* (private sector universities director)
lack of top management commitment, Resistance to change, Lack of resources, Lack of funding, Time management, Existence of accreditation, Lack of planning, Lack of awareness,	Lack of commitment of top management Resistance to change Shortage of funds Time management Existence of accreditation Insufficient training Fewer people involvement Less awareness Culture less supportive

Inappropriate university culture for Implementation, Lack of proper professional training,	Insufficient resources less internal audits less supportive culture for rewards and incentive insufficient technical knowledge Workload Resistance of employees Lack of planning

Major Results (integration)

1. Quality management principles were being practiced in Pakistani universities to some extent. The most widely principle was evidence based decision making and the lowest principle practiced was leadership, process approach and improvement. Data show that there is a medium potential for adopting ISO 9001:2015 in both (public and private) sector universities. There is significance difference between public and private sector HODs and teachers' perception yet public sector was slightly high in term of adoption and promotion of ISO 9001:2015.
2. As public and private universities respondents highlighted challenges such as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, the commitment of top management, lack of training, the existence of accreditation, inappropriate culture, incentives and rewards, resources, workload, planning, and resistance to change. From public sector universities lack of rewards and incentives, lack of people involvement, lack of internal audits, lack of technical knowledge from private universities workload, lack of people involvement, lack of rewards and incentives were challenges found additionally in the qualitative study.
3. HEC set criteria and order notification for international accreditation after that the university becomes part of quality management practices at a global level. Give rewards and incentives to universities, proper training to staff, assign jobs to the new dedicated staff who are trained, special funds, give awareness to universities about ISO certification with its benefits, top management commitment, proper planning and provision of resources are very important.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSIONS, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

After data analysis, this chapter highlights the main finding of the study, the challenges, and a better understanding of quality management in universities. This chapter also provides information about conclusions based on finding and also provide recommendations for future researchers.

5.2 Summary

The main study objectives were to compare the quality management practices currently utilized in the private and public universities regarding ISO 9001:2015. Examine challenges in the process of quality management practices in public and private universities. For achieving these objectives present study was conducted. For the study mixed method research design was selected. The self-developed survey questionnaire was based on ISO 9001:2015 seven dimensions according to its standards and select challenges from a literature review. The first chapter of the study is based on the background information of the research problem, hypothesis, objectives, and introduction to the methodology. The second chapter is based on the ISO 9001:2015 model, quality management system, and various model challenges for the implementation of ISO 9001:2015 QM. The third chapter is based on methodology as well as the fourth chapter provides information about data analysis. Whereas the fifth chapter is based on study findings, discussion, conclusions, and recommendations.

Quality management principles were being practiced in Pakistani universities to some extent. The widest principle was evidence-based decision making and the lowest principle practiced was leadership, process approach, and improvement from both sector teachers and HODs. A difference was found between public and private sector HODs and teachers' perceptions yet the public sector score was slightly high in terms of adoption and promotion of ISO 9001:2015. This may be due to challenges. Data show that there was a potential for adopting ISO 9001:2015 in both sectors universities public and private was medium satisfaction was noted. Challenges found by teachers and HODs from public and private universities were a lack of top management commitment, lack of awareness, lack of planning, time management, lack of funding, the existence of accreditation, lack of proper professional training, lack of resources, inappropriate university culture, and resistance to change.

As public and private sector universities QEC directors also highlighted challenges such as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, the commitment of top management, lack of training, the existence of accreditation, inappropriate culture, incentives and rewards, resources, workload, planning, and resistance to change. Lack of rewards and incentives, lack of people involvement, lack of internal audits, workload, and lack of technical knowledge, were challenges found additionally in the qualitative study.

5.3 Findings

Findings from descriptive and inferential analysis including a percentage and t-test were performed to test the hypothesis and achieve the research objective and sub-objectives. Moidunny (2009) mentioned the mean score interpretation that was as

follows: (1.00-1.80) considered very low; (1.81-2.60) considered low; (2.61-3.20) considered medium; (3.21-4.20) considered high; (4.21-5.00) considered very high.

5.3.1 Findings Related to Perceptions of Teachers

Findings from the t-test address sub-objective 1 "To compare customer focus practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{01A}There is no statistical significant difference concerning customer focus practice in the public and private universities as perceived by teachers.

Faculty members from public and private universities recorded significant differences in opinions regarding university management assessing teachers' satisfaction regularly. The study finding revealed that the mean score (3.19) of public faculty members was high while the private sector means score (2.82) was medium (t=2.995) with the difference in the view. Study findings indicate that (t=-0.73) no difference was found regarding university management resolving teachers' complaints. The mean score of (public = 3.19; private = 3.20) faculty members was high. The study results further revealed that (t=.234) no difference found regarding management arranges counselling support for teachers (public mean score = 2.58; while private mean score = 2.55), teachers is involved in decision-making (public mean score = 2.59; private mean score= 2.39; t=1.660), university officials' are easily available to the teachers (public mean score = 2.50; private mean score = 2.26; t=2.142), university management arranges services for teachers career development (public mean score = 2.55 ; private mean score = 2.54; t=.098), university management has a system for taking teachers views (public mean score = 2.55 ; private mean score = 2.54; t=.872),

teachers are awarded for performing well (public mean score = 2.50 ; private mean score = 2.26; *t*=2.074). A difference was found between public and private sector faculty members (*t*=2.074), so the null hypothesis to be rejected. Overall public sector teachers' mean score (2.71) was medium while private sector teachers' mean score (2.56) was low.

The Following finding from the t-test address sub-objective 2 "To compare leadership practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{02A}There is no statistical significant difference concerning leadership practice in the public and private universities as perceived by teachers.

A faculty member from public and private universities found no difference regarding the leadership has a clear vision (public mean score = 2.53 ; private mean score = 2.47; *t*=503) mission (public mean score = 2.43 ; private mean score = 2.46; *t*=-.238), and objectives (public mean score = 2.54 ; private mean score = 2.49; *t*=.399), the university has the policy to improve quality and maintain standards (public mean score = 2.53 ; private mean score = 2.50; *t*=.262), the university management allocate adequate resources for quality improvement (public mean score = 2.54 ; private mean score = 2.42; *t*=.978), long-term planning is done in the departmental level (public mean score = 2.57 ; private mean score = 2.59; *t*=-.136), university senior management maintain an environment that supports quality improvement (public mean score = 2.39 ; private mean score = 2.34; *t*=.397), university identifies needs of job specifications very clearly (public mean score = 2.55 ; private mean score = 2.54; *t*=.033), decision-making is based on factual information in the university (public mean score = 2.52 ; private

mean score = 2.57; *t*=-.405). The study indicates that no difference was found between public and private sector faculty members (*t*=.628) so the null hypothesis failed to be rejected. The mean score of public = 2.52 and private = 2.49 sector faculty members were low.

The Following finding from the t-test address sub-objective 3 "To compare engagement of people practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{03A}There is no statistical significant difference concerning the engagement of people practice in the public and private universities as perceived by teachers.

A comparison of public and private teachers' views indicates no difference of opinion on university management forms various teams to solve teachers problems (public mean score = 3.08; private mean score = 2.94; *t*=1.048), teachers are involved in course review (public mean score = 2.91; private mean score = 2.97; *t*=-.476), teachers are involved in program review (public mean score = 3.03; private mean score = 3.07; *t*=-.308**),** departmental meetings of the staff are regularly conducted to address quality problems of academic program, (public mean score = 3.05; private mean score = 3.19; *t*=-1.115). The mean score of a public and private sector faculty members was medium. Results further indicate that the mean score of public and private sector faculty members was low for departments at the university that have collaborated with international universities (public mean score = 2.48; private mean score = 2.43; *t*=.420), and each course contents are developed after discussions with external staff with expertise in that particular area, (public mean score = 2.55; private mean score = 2.37;

t=1.520). The study revealed that no differences were found between public and private sector faculty members so the null hypothesis failed to be rejected. The mean score of (public mean score = 2.85; private mean score = 2.83; *t*=.338), faculty members was medium.

Findings from the t-test address sub-objective 4 "To compare process approach practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{04A}There is no statistical significant difference concerning the process approach practice in the public and private universities as perceived by teachers.

A faculty member from public and private universities found no difference of opinions regarding university has central support for research (public mean score = 2.57; private mean score = 2.45; *t*=.997), the university has sufficient medical facilities (public mean score = 2.23; private mean score = 2.13; *t*=.930), university has a sufficient financial resources (public mean score = 2.59; private mean score = 2.34; *t*=2.062), university has a sufficient hostel facility (public mean score = 2.48; private mean score = 2.51; *t*=-.230), the university has adequate internet access (public mean score = 2.45; private mean score = 2.20; *t*=2.084), the university has a sufficient library facility (public mean score = 2.57; private mean score = 2.25; *t*=2.501), and the university has sufficient cafeteria services (public mean score = 2.59; private mean score = 2.52; *t*=.533). Results further indicate that the mean score of public and private sector university teachers was low. For transportation facilities (public mean score = 2.75; private mean score = 2.50; *t*=1.953), public-sector faculty members' mean score was medium while private-sector faculty members' mean was low. The study revealed

that no difference was found between public and private sector faculty members (*t*=.372) so the null hypothesis failed to be rejected. The mean score (public = 2.50; private = 2.48) faculty members was low.

The Following finding from the t-test address sub-objective 5 "To compare improvement practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{05A}There is no statistical significant difference concerning improvement in the public and private universities as perceived by teachers.

A comparison of public and private universities teachers' views indicates no difference of opinion regarding university management develop training program for teachers (public mean score = 2.39; private mean score = 2.54; *t*=-1.056), teachers are provided with opportunities to improve their qualifications (public mean score = 2.59; private mean score = 2.55; *t*=-.279), support for continuous professional development for teachers (public mean score = 2.57; private mean score = 2.53; *t*=-.292), sufficient funds for research are allocated in the university (public mean score = 2.46; private mean score = 2.57; *t*=-.806), teachers are encouraged to conduct research studies (public mean score = 2.55; private mean score = 2.41; *t*=1.004), market research is conducted for the proposed program by the university (public mean score = 2.43; private mean score = 2.23; *t*=1.569), for faculty to make suggestions the university has an effective system how to improve quality (public mean score = 2.53; private mean score = 2.52; *t*=.090). The mean score of public and private sector university faculty members was low. The study revealed that no difference was found between public and private sector faculty members so the null hypothesis failed to be rejected. The

mean score of (public = 2.54; private = 2.48; *t*=-.889) sector universities faculty members was low.

Findings from the t-test address sub-objective 6 "To compare evidence-based decision-making practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{06A}There is no statistical significant difference concerning evidence-based decision-making practice in the public and private universities as perceived by teachers.

A faculty member from public and private universities found no difference in opinions regarding manual of the quality assurance system exists at the university (public mean score = 3.55; private mean score = 3.49; *t*=.532), and details of the staff involved in quality assurance and control arrangement are available (public mean score = 3.57; private mean score = 3.42; *t*=1.160), transfers in and out of programs or courses to facilitate teachers are clearly recorded (public mean score = 3.59; private mean score = 3.44; *t*=1.183), the records of all resources are up to date and available, (public mean score = 3.58; private mean score = 3.46; t=1.016), detail of learning activities is available to the teachers (public mean score = 3.43; private mean score = 3.30; t=1.017), the mean score of faculty members was high. The study revealed that no differences was found between public and private sector university faculty members so the null hypothesis failed to be rejected. The public sector means score =3.54; and private sector mean score was =3.42; t=1.748) was high.

Findings from the t-test address sub-objective 7 "To compare relationship management practice in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{07A}There is no statistical significant difference concerning relationship management practice in the public and private universities as perceived by teachers.

A comparison of public and private teachers' views indicates no difference of opinion regarding university teachers having regard for each other's opinion (public mean score = 2.72; private mean score = 2.64; *t*=.586), and the department has effective links with other institutions (public mean score = 2.75; private mean score = 2.68; *t*=.475), detail regarding the availability of all learning resources is communicated to teachers (public mean score = 2.80; private mean score = 2.72; *t*=.606). The mean score of both sector faculty members was medium. While the university strives to establish long-term relationships with teachers (public sector faculty members' mean score =2.76 was medium while the private sector means score = 2.18 was low; *t*=4.490). Findings further indicate that the university has an effective communication flow of information between departments' (public-sector faculty members' mean score = 3.10 was high while private-sector faculty members' mean score = 2.68 was medium; *t*= 3.089). The overall mean score of public = 2.82 was medium while private = 2.58 was low *t*=3.384 sector universities faculty members was low. Difference was found between both sector teachers so the null hypothesis to be rejected.

Findings from the t-test address sub-objective 8 "To compare quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by teachers."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{08A} There is no statistical significant difference regarding quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by teachers.

Findings indicate that difference was found in the view of both sectors teachers (teachers from public sector universities *M*=2.78, and teachers from private sector universities *M*=2.69; *t*=3.770)). So the null hypothesis to be rejected. Public sectors universities teachers' mean score was high as compared to private sectors universities teachers for the enhancement and promotion of ISO 9001:2015 quality management practices. Overall public and private sector teachers' mean score was medium.

To explore the challenges in the implementation of a quality management practices in private and public universities.

Faculty members of the public sector (49.6%) and private sector universities (46.6%) consider that lack of top management commitment is a challenge for ISO 9001:2015 implementation. Most of the public sector university faculty members (49.6%) agree with the challenge of time management whereas private sector university faculty members (59.7%) also agree. Faculty members of the public sector (42.4%) and private sector universities (50.0%) consider resistance to change as a challenge for ISO 9001:2015 implementation.

Mostly the public sector faculty members (47.5%) and private sector universities (62.2%) agreed with the challenge of the existence of accreditation. Most of the faculty members of the public sector (47.1%) and private sector universities (44.1%) agreed with the challenge of lack of planning. Many of the public sector faculty members (48.3%) and private sector universities (43.3%) agreed with the challenge of lack of funding. Mostly the public sector faculty members (51.7%) and private sector

universities (45.8%) agreed with the challenge of lack of proper professional training. Most of the public sector universities faculty members (48.3%) agree with the challenge of lack of awareness where as private sector universities faculty members (56.3%) also agree. Faculty members of the public sector (49.2%) and private sector universities (52.9%) consider a lack of resources as a challenge for ISO 9001:2015 implementation. Many of the public sector faculty members (45.8%) and private sector universities (34.9%) agreed with the challenge of inappropriate university culture for the implementation of quality management.

5.3.2 Findings Related to Perceptions of HODs

Findings from descriptive and inferential analysis including a t-test and percentage were performed to test the hypothesis and achieve the research objective and sub-objectives.

Findings from the t-test address sub-objective 1 "To compare customer focus practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{01B}There is no statistical significant difference concerning customer focus practice in the public and private universities as perceived by HODs.

HODs from public and private universities recorded no significant difference in opinions regarding university management assesses HODs satisfaction (public mean score = 3.57; private mean score = 3.00; t= 1.472), and university management resolves HODs complaints (public mean score = 3.35; private mean score = 3.07; t= .544). Public sector HODs mean score was at a high level while private sector HODs mean score was medium. The study results further revealed that the university arranges

counselling support for HODs (public mean score = 2.57; private mean score = 2.42; *t*= .634), and HODs is involved in decision-making (public mean score = 2.50; private mean score = 2.07; *t*= .282), university officials' are easily available to the HODs (public mean score = 2.50; private mean score = 2.07; *t*= .784), university management arranges services for HODs career development (public mean score = 2.50; private mean score = 2.14; *t*= .687), university management has a system for taking HODs views (public mean score = 2.50; private mean score = 2.00; *t*= 1.102), HODs are awarded for performing well (public mean score = 2.57; private mean score = 2.07; *t*= .970). The mean score of public and private sector HODs was low. A difference was found between public and private sector HODs' views (*t*= 2.187) so the null hypothesis is to be rejected and the study. Overall public sector HODs mean score (2.76) was medium while private sector HODs mean score (2.37) was low.

Findings from the t-test address sub-objective 2 "To compare leadership practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{02B}There is no statistical significant difference concerning leadership practice in the public and private universities as perceived by HODs.

Comparison of public and private HODs views indicates no difference of opinion regarding the leadership has a clear vision (public mean score = 2.50; private mean score = 2.35; *t*= .302), mission (public mean score = 2.57; private mean score = 2.50; *t*= .144), and objectives (public mean score = 2.57; private mean score = 2.50; *t*=.141), the university has the policy to improve quality and maintain standards (public mean score = 2.50; private mean score = 2.35; *t*= .310), the university management

allocate adequate resources for quality improvement efforts (public mean score = 2.57; private mean score = 2.50; *t*= .147), long-term planning is done in the departmental level (public mean score = 2.50; private mean score = 2.42; *t*= .132), university senior management maintain an environment that supports quality improvement (public mean score = 2.57; private mean score = 2.27; *t*= .657), university identifies needs of job specifications very clearly (public mean score = 2.50; private mean score = 2.42; *t*=.138), decision-making is based on factual information in the university (public mean score = 2.57 ; private mean score = 2.50; *t*= .130). The mean score of public and private sector HODs was low. Study indicate that no difference was found between public and private sector HODs so the null hypothesis failed to be rejected. Overall both sector HODs' (public mean score = 2.53; private mean score = 2.42; *t*=.604) were low.

Findings from the t-test address sub-objective 3 "To compare engagement of people practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{03B}There is no statistical significant difference concerning the engagement of people practice in the public and private universities as perceived by HODs.

A comparison of public and private HODs views indicates that the university management forms various teams to solve the problem (mean score of the public sector = 3.14 and the private sector means score= 3.07; *t*= .128 was medium). While departments at the university collaborate with international universities, (public mean score = 3.42 high; private mean score = 3.21 high; *t*=.362), HODs are involved in program reviews (public mean score = 3.14 high; private mean score = 3.00 medium; *t*= .224), and HODs are involved in course review (public mean score = 2.57 low;

private mean score = 2.50 low; *t*= .159). The finding further revealed that departments at the university have collaborated with international universities (public mean score = 2.50 low; private mean score = 2.42 low; *t*= .147), and each course contents are developed after discussions with external staff with expertise in that particular area, (public mean score = 2.57; private mean score = 2.50; *t*= -.144). The study reveals that no difference was found between public and private sector HODs so null hypothesis failed to be rejected. Overall mean score of (public = 2.89; private = 2.78; *t*= .479) sector universities HODs was medium.

Findings from the t-test address sub-objective 4 "To compare process approach practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{04B}There is no statistical significant difference concerning the process approach practice in the public and private universities as perceived by HODs.

Head of departments from public and private universities recorded significantly different opinions regarding the transport facility (HODs mean score of the public sector =3.28 was high while the private sector HODs mean score= 2.57 was low; *t*=1.387). Public sector HODs (mean score =2.28 was very low while private sector HODs mean score= 2.42 was low; *t*= -.320) regarding hostel facilities. While other services like university have sufficient medical facilities (public mean score = 2.57; private mean score = 2.50; *t*= .179), university has central support for research (public mean score = 2.57; private mean score = 2.42; *t*= .270), university has a sufficient financial resources (public mean score = 2.28; private mean score = 2.42; *t*= -.320), university has adequate internet access (public mean score = 2.28; private mean score

= 2.50; *t*= -.467), university has sufficient library services (public mean score = 2.50; private mean score = 2.57; *t*= -.193) and the university has sufficient cafeteria services (public mean score = 2.50; private mean score = 2.35; *t*= .360), The mean score of public and private sector HODs was low. Overall study indicates that no difference was found between public and private sector HODs (*t*=.440) so the null hypothesis failed to be rejected. But the public (2.53) and private (2.48) sectors mean score was low.

Findings from t-test address sub-objective 5 "To compare improvement practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{05B}There is no statistical significant difference concerning improvement practice in the public and private universities as perceived by HODs.

Head of departments from public and private universities recorded no significant difference in opinions regarding university management develop training program for HODs (public mean score = 2.21; private mean score = 2.14; *t*= .149), HODs are provided with opportunities to improve their qualifications (public mean score = 2.50; private mean score = 2.42; *t*= .126), support for continuing professional development of HODs (public mean score = 2.57; private mean score = 2.21; *t*= .577), sufficient funds for research are allocated in the university (public mean score = 2.35; private mean score = 2.21; *t*= .263), HODs are encouraged to conduct research studies (public mean score = 2.21; private mean score = 2.35; *t*= -.299), market research is conducted for the proposed program by the university (public mean score = 2.57; private mean score = 2.21; *t*= .603), for faculty members the university has an effective system for suggestion about how to improve quality (public mean score = 2.57; private

mean score = 2.00; *t*= 1.333). The mean score of public and private sector HODs was low. Study reveals that no difference was found between public and private sector HODs (*t*= .802) so the null hypothesis failed to be rejected. The overall (public mean score = 2.42; private mean score = 2.22) sector HODs was low.

Findings from the t-test address sub-objective 6 "To compare evidence-based decision-making practice in public and private universities as perceived by HODs."

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{06B}There is no statistical significant difference concerning evidence-based decision-making practice in the public and private universities as perceived by HODs.

HODs from public and private universities found no difference in opinions regarding manual of the quality assurance system exists at the university (public mean score = 3.42; private mean score = 3.14; *t*= .587), and details of the staff involved in quality assurance and control arrangement are available (public mean score = 3.64; private mean score = 3.35; *t*= .699), transfers in and out of programs or courses to facilitate teachers are clearly recorded (public mean score = 3.50; private mean score = 3.71; *t*= -.434), the records of all resources are up to date and available, (public mean score = 4.00; private mean score = 3.07; *t*= 1.755), detail of learning activities is available to the teachers (public mean score = 3.35; private mean score = 3.85; *t*= -1.254). The mean score of public and private sector faculty members was high. The study revealed that no differences were found between the mean of public (3.58) and private sector (3.42) HODs concerning evidence-based decision-making (*t*= .714) so the null hypothesis failed to be rejected. The mean score of public sector HODs was high.

Findings from the t-test address sub-objective 7 “To compare relationship management practice in public and private universities as perceived by HODs.”

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{07B}There is no statistical significant difference concerning relationship management practice in the public and private universities as perceived by HODs.

A comparison of public and private HODs' views indicates that no difference of opinion regarding HODs have regard for each other’s opinion (public mean score = 3.00; private mean score = 2.64; *t*= .687). The mean score of public and private sector HODs was medium. Moreover, the department has effective links with other institutions (public mean score = 3.57; private mean score = 2.64; *t*= 2.575), and the university has an effective communication flow of information between departments (public sector HODs' mean score = 3.57 was high while private sector HODs' mean score =2.64 was medium; *t*= 1.965), detail regarding the availability of all learning resources is communicated to HODs (public mean score = 2.78; private mean score = 2.85; *t*= -.142), and the score of public and private sector HODs was medium. University strives to establish long-term relationships with HODs, (public sector HODs' mean score = 2.78 was medium while private sector HODs' mean score = 2.14 was low; *t*= 1.486). The study reveals that a difference was found between public and private sectors' HODs so the null hypothesis to be rejected. Overall the mean score = 3.14 for public sector universities was medium while the mean score = 2.58 for private sector HODs was low; *t*= 3.274.

Findings from the t-test address sub-objective 8 “To compare quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by HODs.”

Given the nature of the data, sub-null hypotheses were developed that are given below:

H_{08} There is no statistical difference regarding quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by HODs.

Findings show that there is a difference in the view of both sectors HODs (HODs from public sector universities M=2.84 HODs from private sector universities M=2.61; t=3.913). So null hypothesis failed to be rejected. Overall public and private sector HODs' mean score was medium.

To explore the challenges in the implementation of a quality management practices in private and public universities.

The HODs of public sector (50.0%) and private sector universities (57.1%) consider that lack of top management commitment is a challenge for ISO 9001:2015 implementation. Most of the public sector universities HODs (42.9%) agree with the challenge of time management where as private sector universities HODs (28.6%) also agree. HODs of public sector (57.1%) and private sector universities (50.8%) consider resistance to change as a challenge for ISO 9001:2015 implementation. Mostly the public sector HODs (50.0%) and private sector universities (50.0%) agreed with the challenge of the existence of accreditation. Most of the HODs of the public sector (64.3%) and private sector universities (50.0%) agreed with the challenge of lack of

planning. Many of the public sector HODs (64.3%) and private sector universities (64.3%) agreed with the challenge of lack of funding. Mostly the public sector HODs (35.7%) and private sector universities (50.0%) agreed with the challenge of lack of proper professional training. Most of the public sector universities HODs (42.9%) agree with the challenge of lack of awareness where as private sector universities HODs (42.9%) also agree. HODs of the public sector (50.0%) and private sector universities (50.0%) consider a lack of resources as a challenge for ISO 9001:2015 implementation. Many of the public sector HODs (35.7%) and private sector universities (35.7%) agreed with the challenge of inappropriate university culture for the implementation of quality management.

5.3.3 Findings Related to QEC Directors' Semi-Structured Interview

Following findings from the semi-structured interview address research question 1. What are the quality management practices used effectively for the enhancement and promotion of ISO 9001:2015 in private and public sector universities? And research question 2 “What are the challenges in the implementation of quality management practices in private and public universities?

It was found that the HEC self-assessment manual and requirements were followed by public and private universities. Both public and private sector universities all QEC directors aware of QM ISO 9001:2015 expect some awareness of its name. QM ISO 9001:2015 has seven principles as customer focus, leadership, engagement of people, process approach, improvement, and evidence-based decision making and relationship management. In both sector universities customer focus principles are very essential. Public sector universities conducted seminars, conferences, training, webinars, meeting, awareness session, and workshops. As well as invite speakers from

other universities. Private sector universities also conduct seminars, awareness sessions, workshops, and invite speakers from other universities. Overall seminars, workshops, webinars, training, speakers, and different experts invited to universities, etc., for awareness of QM.

Public and private universities strictly follow the standards set by HEC 11 standards. Eleven standards relate to the vision and mission of the university its integrity, its students, its curriculum, its resources, and its financial budget other things. Heads of different departments in private sector universities conduct different surveys like student teacher's evaluations, course evaluations, employer surveys, and graduating student surveys. Moreover, maintain different performa, quality assurance manuals, resource guides, criteria of faculty appointment, self-assessment manual, and criteria of plagiarism checking of HEC and QEC. Self-assessment report from each department prepared. Heads of different departments in public sector universities conduct different surveys like student-teacher evaluations, course evaluations, employer surveys, and graduating student surveys. Self-assessments at the departmental level with specialists and faculty members were conducted. Overall in public and private universities heads of different departments conduct different surveys like student teachers evaluation, course evaluation, employer surveys, graduating student's surveys, M.Phil. Ph.D. reviews through the perception of our customer teacher evaluation form, teacher evaluation form (online teaching), student course evaluation questionnaire (online teaching), faculty course review report, student course evaluation questionnaire, research student progress review form, graduating student survey, faculty survey, alumni survey, employer survey.

It was found that from private sector universities documentation of different key performance areas provides a direction to go towards QM ISO 90012015. Moreover, planning, monitoring, strategic direction, IPEs, improvement in existing system as well

as HEC initiatives are keys for achieving international accreditation. For public sector universities documentation, monitoring, planning, strategic direction, IPEs, improvement in existing system, awareness among top management and audit process are very essential. It was found that in public and private universities implementation and integration of IPEs will provide a platform for university quality management policies. As public and private sector universities have the potential to some extent for the promotion and enhancement of ISO 9001:2015 after IPEs. The key focus is on research, teaching, and administrative support. For improvement in the system regular feedback is taken from faculty members and students. As public and private QEC directors also highlighted challenges such as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, lack of commitment of top management, lack of training, the existence of accreditation, inappropriate culture, lack of incentives and rewards, lack of resources, workload, lack of planning, and resistance to change. As well as respondents from public sector universities mentioned challenges such as lack of rewards and incentives, lack of people involvement, lack of internal audits, lack of technical knowledge from private sector universities workload, lack of people involvement, lack of rewards and incentives were challenges found additionally in the qualitative study.

Initiatives highlighted by private sector universities were attractive salary packages with educational facilities, leadership involvement, knowledge, rewards and incentives, special funds, involvement of HEC, mention selection criteria for staff, and a proper service structure. Initiatives highlighted by public sector universities were attractive salary packages with educational facilities, leadership involvement, training courses, proper planning, create awareness, knowledge, rewards and incentives, special

funds, and involvement of HEC are essential for international accreditation. The leadership of the university needs to understand the importance of a quality management system. Training courses for the awareness of ISO 9001 QM may be designed for the application of skills and continuous improvement. Provide proper financial and material resources for ISO 9001 application. If HEC sets criteria and orders notification for international accreditation then the university becomes part of QM practices at a global level. Give rewards and incentives to universities for their best performance this may increase healthy competition and motivation among university team members and they may perform excellently. Moreover, give proper training to staff and teaching members for better results. Assign jobs to the new and dedicated staff who are trained, special funds, and give awareness to a staff of universities about ISO certification with its benefits, top management is the decision-makers their involvement, commitment, and proper planning are very important.

5.4 Discussion

In the last chapter, after analyzing the data. The main purpose of this study was to assess private and public universities for ISO 9001:2105 quality management system implementation. Moreover, this chapter gives information about issues and challenges related to higher education institutions for ISO 9001:2015 quality management system implementation. The quality definition varies from author to author. Transformation, expectation, consistency, level of excellence, value for money, conformance to specification.

Furthermore raises the question, of whose quality, the parents, the society, the students, the employers, the institution administration, or the government in the

education process all were stakeholders in the process of education. As itself a discussion whose perceptive is preferred for quality. These issues are resolved when

(Robinson & Long, 1987) classify the customers in primary, secondary, and tertiary, by what they understand to be an order of relevance. To them, the primary customers are the students, the secondary customers are the education authorities and employers and the tertiary customers are the validating bodies, ex-students, families, employers, etc. The educators and those being educated, those teaching within universities, and those studying there. Faculty and students are the internal participants. External customers include students, government, industry, and parents. (Carvalho Pereira & Terra Da Silva, 2003).

For seeking quality education quality management is an essential competence for higher education. Process for meeting the needs of customers within an organization. Quality is one of the essential issues in education nowadays (Akhtar, 2007) Quality emphasizes customer satisfaction. The question of quality is an ancient one. Defining quality is a difficult task. Although in the corporate world where quality has to define clearly. A comprehensive definition of the quality management system in which all tasks sustain at the required level of excellence. It also includes quality planning, policy, improvement, control, assurance, and implementation. Quality management system ISO 9001:2015 is based on seven principles. Emerging from the corporate and manufacturing world QMS presented in service organizations such as a bank, health care, and educational institutions. When higher education was facing challenges such as reduction in public funding, reduction in student enrollment, and competition enhancement. Various approaches are in vogue to implement a quality system, excellence, standard models, and awards based on the models are adapted for

business excellence quality models such as the European foundation model, American, and Canadian quality awards for business excellence.

ISO 9001 QM and Deming prizes are some quality standards or models that vary from organization to organization. Moreover, it depends on the culture of the organization in Pakistan, especially in the institution of higher education culture of quality is not much ripe. So ISO 9001 quality management was selected as an approach. ISO 9001 is considered a good start in quality management. ISO was founded in 1947, ISO 9000 is quality management system series of quality management. The main purpose behind the ISO standard was to replace different national standards which creates a lot of confusion. The ISO series was released in 1987. Which was revised in 1994 as (ISO 9000:1994), 9001:1994, 9002:1994, 9003:1994, and 9004:1994 standard was revised again in 2005 as ISO 9000. ISO 9001:2008 in 2009 ISO 9004 quality management system. 9004:2009 guidelines related to improvement in performance after ISO 9001:2008 series implementation. In all three parts, ISO 9001:2015 was used for certification purposes. It needs to keep in mind that certification is the bridge for the production of quality. It is a process-oriented approach, it is related to the quality assurance process that the minimum requirement is to meet ISO 9001 QM. ISO 9001:2015 is based on seven principles that are equally applicable in service and manufacturing organizations including higher education institutions.

The adoption of a quality management model depends upon the quality culture and its maturation level. The present study focuses on ISO 9001:2015 implementation in a higher education institution. Challenges of public funding reduction in enrollment of students, demand of accountability, improve and maintain quality of education. Numerous case studies were available in the literature. Universities need to adopt QM into the educational setting. These universities and institutions are from developing and

developed countries, for example, There are a lot of examples where ISO 9001:2015 standards are implemented successfully in the educational institution, e.g. Australia, UK, USA, Thailand, Malaysia, and Turkey. Moreover, Purdue University, Oregon State University, and Wisconsin Stout University implemented quality management standards successfully.

In the US universities like Northern Arizona, Boston, Columbia, and Tennessee implemented quality management standards successfully (Moreland & Clark, 1998; Doherty, 1995). Different universities and schools in the UK are certified by ISO 9000. ISO 9000 first certified university was the University of Wolver Hampton. Other universities like the University College Dublin, and the University of Leads Metropolitan are ISO certified. Queensland University, Victoria University, and Monash University are an example of Australian Universities that enjoy quality management practices. The Malaysia University of Technology and the University of Malaysia are ISO 9001 certified universities. Furthermore, in Turkey, Hong Kong, and Thailand quality management practices were implemented.

Now in Pakistan, it has become popular, as a department of Nust is also certified. The limited department of NED University is ISO certified. Moreover, LUMS, Wah, University, (CIIT) COMSATS Islamabad, etc., were certified by ISO. University of Wisconsin Shout was the first university that gets Baldrige Award in education in 1999. The adoption of a model depends upon organization to organization. The selection of quality model depends on a majority level of organization culture. As in Pakistan, the university's quality culture is not so ripe, so ISO 9001 was selected as an approach. ISO 9001 QM is a good start. ISO third part deals with the guideline with the organization for more improvement in the process for the implementation of ISO

9001:2015. ISO 9001:2015 is used for the process of certification. Certification is valid for three years.

Furthermore, always keep in mind that certification is not a guarantee of a good quality product as it is related to process as it is a process-oriented approach and certification that the process of quality assurance is in place and minimum requirement of ISO 9001 have been met. ISO 9001:2015 is based on ten sections, such as normative reference, scope, the context of the organization, terms and definitions, planning, leadership support, realization, performance evaluation operation, and improvement. ISO 9001 is applied equally in manufacturing as well as service organization like higher education institutions. In Pakistan, some universities such as the national university of science and technology, NED university of engineering, and the university of engineering and technology Jamshoro Sindh, have got ISO 9001 certification. However, some problems were also reported in the literature regarding the implementation of the ISO 9001 model such as over documentation, expensive, confusion regarding terminology, and time-consuming.

The first problem related to the choice of the model as here is only ISO 9001: 2015 which is applicable for all types of organizations. In addition problem of documentation, experts believe that it is a misinterpretation of ISO standards 9001 is part of the implementation (Holy, 2003). It is not a system of documentation or perception, but it is a documented management system. The core process needs to document because it affects the quality of the product. Furthermore, confusion regarding terminology and vocabulary has been solved to large extent by the international workshop of agreement guidelines for the implementation of ISO 9001 in the setting of ISO. It is a fact that ISO 9001 is expensive and time-consuming as starting documentation initial training is required. But it depends upon the majority level of the

organizational culture on how things are streamlined. Effort related to ISO 9001 provides many benefits this is why the present study focuses on assessing the quality management system ISO 9001 practice in universities.

Quality management is an interesting concept in developing countries like Pakistan. There are local published material and awareness in educational institutions about QM. In an organization, there is a wide approach for all the departments and functions of an organization, but this study focuses on universities. The researcher reviewed the literature, but most of them were related to developed countries. The researcher tries to collect data from different types of stakeholders. Despite the endeavors, it is impossible to say that the research study highlighted all the issues. This may be due to limited access to the institution's time and money issues.

Staw & Epstein (2000) have added that reputation, enhances the effect of the use of famous management techniques, but those techniques are based on an industrial organization to a large extent to the best of their knowledge. Few studies define the relationship between faculty repetition and QM certification (Rohayati & Sari, 2019). Another contribution of this study is the perception of teachers, HODs, and QEC directors. Basir et al. (2017) conducted a study on the influence of the academic culture elements on the ISO 9001 maintained by Malaysian universities. Results show that individual collegiality and academic freedom work against ISO 9001 maintained, while professionalism, work positively and negatively teamwork, individualism opposite and supported collegiality (managerialism) in ISO 9001 maintained in one of the cases. Resistance to change is because of a lack of awareness. In universities, highly educated people who have a rich amount of knowledge and experience may feel hesitant to experience new things.

Hussein, Hammoud, Bazzi & Ali (2014) added that it is essential to engage staff and faculty members in the process for getting good results. Time management is also a challenge. Hussein, Hammoud, Bazzi & Ali (2014) added this challenge also. As they asked the question why do we need this certification? Top management faced resistance from both academic and administrative staff. This study found some consequence that has not found sufficiently emphasized in the literature. Ghani & Basir (2016) define that QM 9001 in the institution depends on top management commitment to QM 9001 and understanding of employees. Moreover, six factors also added to the implementation of QM 9001 in higher education, namely, the leadership style, reward system, communication, culture of the organization, involvement of people, and management commitment.

Hussain, Eskildsen & Edgeman (2020) focus on a journal article published from 1987 to 2015 in the ISO 9000 series. A study suggested that challenges namely, marketing, and organization motive behind certification of ISO 9000. Rohayati & Sari (2019) conducted a study on the implementation of the ISO 9001:2015 assistant program at Telkom Junior High School as a case study. In the preparation phase assistant program was applied to the study. Five sub-phases through implementing checklists questionnaire and interview extract information through consultant, training, and team for understanding and skills. This program will be applied to other institutions of education to prepare. In the international market, the ranking and accreditation of universities getting more and more popular which is affecting the perception of stakeholders and beneficiaries of higher education institutions (Altbach, 2015).

There was evidence of public sector teachers' mean score was high for management-assesses teachers' satisfaction while the private sector was medium. Management resolves teachers’ problems both mean score was high. Public and private

sector teachers' mean score was low for university provides counselling support for teachers, teachers are involved in decision-making, university officials' are easily available to the teachers, career development services for teachers, taking teachers views and teachers are awarded for performing well. Overall public sector teachers' mean score was medium and private was low. It means that public sector teachers' were satisfied while private sector teachers were not satisfied with the practice of customer focus. In short, the public sector is largely controlled by the government, while the private sector is led by individuals. For realizing the importance of the customer and more focus on satisfying the customer more emphasize than they did in the past. According to data analysis, a low rating was found in private sector universities for customer focus. Finding similar to the finding of (Chui, & bin Ahmad, 2016). This may be due to a lack of internal competition. There was evidence of public sector HODs mean score was high for management assessed HODs satisfaction and management resolved HODs problems while the private sector was medium. Both public and private sector HODs' mean score was low for university provides counselling support for HODs, HODs are involved in decision-making, university officials' are easily available to the HODs, career development services for HODs, taking HODs views and HODs are awarded for performing well. Overall public sector HODs' mean score was high. It means that public sector HODs were satisfied while customers focus on private sector HODs were dissatisfied. The analysis suggests a mixed picture of customer focus for management initiatives regarding quality management. This may be due to a lack of internal competition.

The head of the public sector was more visionary than the private sector. One reason for these differences might be institutional culture (Blase & Blase, 2015). Both sector teachers' and HODs' mean score was low for leadership vision, mission, and

objectives. As QEC directors added the universities vision, mission, and objectives were not attractive and do not provide a futuristic approach based on a quality management system. Finding similar to the finding of (Birnbaum, 2000) who concluded that lack of compromise between quality management implementation and universities purpose, values, and traditions. Low rating was found for university policy for quality maintenance, quality improvement, resource allocation, long-term planning at the departmental level, senior management role for maintaining the quality environment and improvement, identification of job specifications, and based on factual information. Both sector teachers' and HODs' mean score was low for leadership management. It means that both sector teachers and HODs were not satisfied with leadership practice.

Finding similar to the finding of (Djerdjour & Patel, 2000). Results also support the finding as the study highlighted that top management commitment was the biggest challenge in the public and private sector universities for QM. QEC directors also said that planning leadership commitment is very much essential for ISO 9001:2015 implementation. Management commitment is also added by (O'Mahony & Garavan, 2012). Institutional leadership tended to focus on quality improvement, long-term planning, identification of jobs specification, share experience with the team to achieve successful implementation. Moturi & Mbithi (2015) found that for ISO 9001 successful implementation management commitment, shared trust, providing resources, culture, and climate are very essential factors. University leadership need to maintain the quality that is also doubtful in the eye of teachers and HODs. Djerdjour & Patel (2000) observe that top management in developing countries is not committed to quality.

There was evidence that universities management from various teams for the solution of the problems in both sectors teachers' mean scores were medium. Teachers are involved in program review, teachers are involved in program review both sector

teachers' mean scores were medium. Department collaborate with international universities, and each course contents are developed after discussions with external staff with expertise in that particular area both sector mean score was low. Public sector teachers' mean score was high as compared to private sector teachers. Universities management form various teams for the solution of the problems both sectors HODs mean score was medium. HODs are involved in course review both sector mean score was medium. HODs are involved in program reviews public sector mean score was medium while the private sector mean score was high. Department collaboration with international universities and each course contents are developed after discussions with external staff with expertise in that particular area both sector mean score was low. Rasool (2010) added that there is a greater need and scope to involve industry in the student's practical training and curricula development. Both sector HODs' and teachers' mean score was medium for the engagement of people. It means that teachers and HODs are satisfied with the engagement of people. But still, there is a lot to be done for the engagement of people like department collaboration with international universities and professional bodies involved in program review in public and private sector universities. There was strong evidence of reliance on the survey to aware stakeholders related of quality implementation. Training workshops, and webinars were also conducted at institutions to some extent. Leadership tended to focus on motivation, and prompt communication with stakeholders to achieve successful implementation. People's involvement is essential for the implementation of ISO 9001:2015 QM.

Moturi & Mbithi (2015) found these as a critical success factor. Employees' involvement is considered an important component (Psychogios & Priporas, 2007). Public sector teachers' and HODs' mean score was medium while private sector teachers' and HODs' mean score was medium for transportation facilities. Central

support for research, medical facilities, financial resources, hostel facilities, internet facilities library, and cafeteria services for both public and private sector teachers and HODs mean score was low. Teachers and HODs from public and private universities were not satisfied with the process approach. This may be due to a lack of funding as public and private sector teachers and HODs also highlighted the challenge of lack of funding. QEC directors highlighted that lack of basic resources such as internet, transportation, hostel, research facilities, library, medical facilities, funding, and lack of training of staff members related to quality matters are another challenges. This finding is similar to the finding of (Muratza, 2005) about physical facilities and resource unavailability. Moreover, these finding is contradicts to the finding of (Ullah, 2005 & Iqbal, 2004) who concluded that public and private universities are satisfied with internet facilities. This finding is similar to the finding of (Hamid-Ullah, 2005) who concluded that government libraries are poorly managed. Mai (2000) added that resource management is one factor that increases satisfaction among receivers. QEC directors also agree with the importance of resources.

Training program for teachers/HODs, the opportunity for improving qualification, sufficient funds for conducting research, and continuous professional development, teachers/HODs are encouraged to conduct research, market research is conducted for the proposed program by the university, a system for a suggestion for improvement of quality both sector teachers and HODs mean score was low. Universities can apply quality management in teaching, learning, and research activities (Voss et al., 2005). Quality management can be beneficial for curriculum, teaching, and research. Its adaptation is required for an effective education system and process as many scholars have advocated. The overall mean score of public and private sector HODs and teachers for improvement was low. It might be due to a lack of

encouragement of management towards research, continue professional development, training, and the proper system for the suggestion of improvement of quality. A similar finding was also reported by (Rasool, 2010) concluded as to improve the quality of private sector universities HEC should provide equal opportunities for faculty continuous development and provide funds, etc., the key purpose of universities is to contribute to society through research, learning, and service activities (Seymour, Kelley & Jasinski, 2004). ISO 9001 QM provides a structure in terms of the governance and management of the process so that greater accountability and effectiveness can be achieved by the universities. Universities try their best and put their all efforts into getting higher rank because it always attracts students increase the credibility of the institution and attract funding agencies. These findings are in line with (Hoodbhoy, 2008 & Virk, 2006). The result shows a lack of training programs. This finding is similar to the finding of (Jadoon & Jabeen, 2006). Bhatti & Tauqeer (2006) found that public sector universities need to conduct seminars and workshops related to QMS principles. Ali (2005) added that teachers are very low satisfied with the faculty development program.

There was evidence that the quality assurance model available, transfers in and out of programs or courses to facilitate teachers are clearly recorded, detail of staff, student assessment record, detail of learning activities both sectors teachers mean score high. Moreover, quality assurance model available, public sector HODs' mean score was high while private sector HODs were medium. Transfers in and out of programs or courses to facilitate teachers are clearly recorded, detail of staff, resources record, and detail of learning activities of both sectors HODs mean score was high. Public sector teachers' and HODs' mean score was high as compared to private sector teachers and HODs for evidence-based decision making. Overall all respondents agree with the

documentation and evidence. This might be due to HEC IPEs' self-assessment process. This finding is similar to the finding of (Ahmed, 2017) who concluded that documentation is a 77% agreement rate among department heads. There was evidence that more focus was on strategies like information and measurement.

However, evidence of quality-related personnel shows that there was a lack of focus on communication, feedback, appreciation, rewards, and recognition, throughout the institutions. Arguably, quality management implementation has not resulted from only over-reliance on hard dimensions. There is also a need to focus on soft dimensions such as communication, feedback, appreciation, rewards, and recognition for the effective implementation of ISO 9001:2015. In the meanwhile, both public and private sector universities follow the HEC self-assessment manual and requirements mentioned by the director of QEC. Both public and private sector universities all QEC directors aware of ISO 9001:2015 expect some awareness of its name. ISO 9001:2015 has seven principles. Public and private sector universities QEC respondents say that they conduct different seminars, workshops, webinars, training, and speakers, and invite different experts in universities, etc. for awareness of QM. Public and private sector universities heads of different departments conduct different surveys like student teachers evaluation, course evaluation, employer surveys, graduating student's surveys, M.Phil. Ph.D. reviews, customer teacher evaluation forms, teacher evaluation forms (online teaching), student course evaluation questionnaire (online teaching), faculty course review report, research student progress review form, faculty survey, alumni survey, employer survey.

University teachers regard each other opinions, effective communication of information, and learning resources available, both sector teachers' mean score was at a medium level. Long-term relationship with teachers' public sector teachers and HODs mean score was medium while private was low. Effective flow of information public

sector teacher's mean score was high while private sector teacher's mean score was medium. Public sector teachers' mean score was medium and private sector teachers' mean score was low for relationship management. Concerning each other opinions, effective information flowed from up-down, and both sector HODs' mean score was medium. Detail of all learning resources and long-term relationship with teachers/HODs public sector HODs mean score was medium while private sector HODs mean score was low. Both sector teachers' mean score was medium regarding information flow between departments. Public sector HODs' mean score was medium while private sector HODs' mean score was low for relationship management. The analysis suggests a mixed picture of relationship management. This may be due to communication setup and organizational hierarchy differences. Public universities were found to have better conditions of service and staff relationships judging from their higher mean values (Akuegwu, & Ntukidem, 2011). The latter approach would be required more communication and commitment for quality management implementation.

The above principles result categorizing as moderate being the potential to move toward QM 9001 implementation in public and private universities. There is a significant difference between public and private sector HODs and teachers' perceptions yet the public sector was slightly high in terms of adoption and promotion of ISO 9001:2015. This may be due to government funding, job security, and higher qualified HODs and teachers in the public sector as compared to private sector universities. The university management system in private sector was weak due to the influence of the owners as a majority of the managers were appointed without matching qualifications and experiences (Khan, & Aajiz, 2018).

The result shows that for appropriate implementation of quality management ISO 9001:2015 in universities study found some challenges from teachers of public and private sector universities such as lack of commitment of top management, the finding is similar to the finding of (Al-Najjar & Jawad, 2011; Mehfooz & Saeed Lodhi, 2015; Bounabri et al., 2018). This is in agreement with (Kosigei 2014; Suleman & Gul, 2015) who concluded that effective leadership plays an essential role in the performance of the institution and quality services. This is also in agreement with (Aly & Akpovi, 2001) who further added that top management continuous support and resources are necessary for building a quality culture. Low levels reflect poor leadership and weak management. Results confirm the low level of provision of resources and improvement.

Leadership commitment is very important for the successful implementation of QM. The implementation of QM 9001 is a long journey, which requires cultural change, yet public and private sector university respondents' rate that leadership commitment was low. This is a very serious warning about the adaptation of QM 9001 in universities. This needs attention and improvements. In addition, need clear support for vision, mission, and objectives. As (Alalfy & Abo-Hegazy, 2015; Lutfi, 2013) added that obstacles to applying for ISO application leadership of the university have no clear vision about its application. Birnbaum, (2000) defines challenges as a lack of compromise between quality management implementation and universities' purpose, values, and traditions. It is again worthy to mention that institution culture might be shaped by top management. The contributing reason may be the lack of poor process design and lack of specific and measurable goals which did not ensure capabilities and skills for the need of QM 9001 in comparing the finding of the present study with the rest of the Arab context, the study of (Aladwan & Forrester, 2016) concluded that poor management system as the obstacle for QM implementation.

Rosa & Amaral (2007) highlighted the challenge of lack of strong leadership commitment. Hesham & Magd (2007) describe that the key challenge is the lack of top management understanding and involvement in ISO requirements for a quality management system. Another challenge was found as a shortage of funds. This is also in agreement with (Suleman & Gul, 2015; Mishra, 2013). Lack of funding and resources in agreement with (Saleh & Gul, 2015; Mishra, 2013). Furthermore, (Edris, 2012 & Saeed, 2012) confirmed the lack of moral and financial incentive to participate in ISO 9001 and its selection. Lack of continuous assessment efforts of the university in ISO 9001. The study found the challenge of lack of training of staff members. Lack of proper training is further supported by (Kosgei, 2014; Sahney, Banwet & Karunes, 2004). This is also in agreement with (Kosgei 2014; Sahney, Banwet & Karunes, 2004; Bounabri et al., 2018). Unavailability of human and financial resources. This is also in agreement with (Al-Najjar & Jawad, 2011; Mobegi, Ondigi & Oburu 2010; Suleman & Gul, 2015; Mishra; 2013). Moreover, (Rania, 2012 & Ali, 2012) explains the shortage of trained staff, resources, and the lack of inside and outside experience of some outstanding universities for the implementation of ISO 9001.

The next challenge was lack of planning this finding is similar to the finding of (Suleman & Gul, 2015; Mobegi, Ondigi & Oburu, 2010). The next challenge was found lack of awareness this finding is similar to the finding of **(**Mehfooz & Saeed Lodhi, 2015; Goetsch & Davis, 2010). Another challenge was to find resistance to change this finding is similar to the finding of **(**Hussein, Hammoud, Bazzi, & Haj-Ali, 2014; Al-Najjar & Jawad, 2011; Goetsch & Davis, 2010; Bounabri et al., 2018). In addition, resistance to change by leadership, lack of practices, and planning at the application of ISO 9001 mechanism. Similar findings as found by (Pratasavitskaya & Stensaker, 2010) also highlighted the challenges of resistance to change.

The next challenge was to find the existence of accreditation this finding is similar to the finding of **(**Thandapani et al., 2011). Another challenge was time management this finding is similar to the finding of **(**Hussein et al., 2014; Horine & Hailey, 1995). Another challenge in quality management effective implementation is organizational culture (Corbett & Rastrick, 2000). Inappropriate culture for ISO 9001 implementation this finding is similar to the finding of (Alalfy, & Abo Hegazy, 2015; Goetsch & Davis, 2010; Kosgei, 2014). A similar find was found by (Ab Wahid, 2019) that without a strong culture people will not involve in maintaining QM.

In support, (Rad, 2006) institutional culture should be compatible with quality value. The result shows that implementing integrated IPEs will provide a platform. Moreover, documentation of different key performance areas provides a direction to go towards ISO 90012015. O'Mahony & Garavan (2012) considered cultural change as an essential component for improvement. Moreover, improvement in cultural change can be observed during the improvement and alignment phase of QM. Teachers, HODs, and QEC directors considered it a challenge. Askling & Stensaker (2002) find similar findings as quality improvement in higher education rarely happened. A strong culture sustains the ISO 9001 implementation. QM implementation utilizes several strategies to bring cultural change to universities. The strategies focus on measurement, information, and internal audits (Alalfy & Abo-Hegazy, 2015). Shortage of funds, lack of awareness, involvement of staff and faculty members and their level of cooperation, unavailability of human and financial resources, the commitment of top management, lack of training of staff members, the existence of accreditation, time management, workload, lack of planning, an inappropriate system of reward, and lack of training were challenges found in public and private sector universities.

The study found that there were more challenges in the public sector as compared to the private sector because of top management commitment, resistance to change, the existence of accreditation, lack of planning, lack of awareness, and lack of culture for promotion of quality management system. The study found some other challenges such as lack of technical knowledge, finding similar to the finding of (Seddon, 1998; Masters, 1996) who found that lack of knowledge about quality programs. The study found the challenge of an inappropriate system of reward, furthermore, (Edris, 2012 & Saeed, 2012) confirmed that lack of moral and financial incentive to participate in ISO, poor communication between departments, and selection.

Masters (1996); Goetsch & Davis (2010) found that inappropriate system of reward. This finding is similar to the finding of (Walsh, 2002) who concluded that the challenges of insufficient training, in consist policies of HEC, and lack of a culture of incentives based on quality assurance reported by (Scott, 2001). The lack of involvement of people found a challenge. According to *(*Psychogios & Priporas, 2007) people's involvement is essential for QM implementation. Moreover, people involved in administrative structure, team commitment, and systems are essential for ISO 9001 implementation (Moturi & Mbithi, 2015). Academic and university core service departments are not involved frequently in the ISO 9001 implementation (Corbett & Rastrick, 2000), In addition, (Moturi & Mbithi, 2015) found commitment of staff and lack of involvement of people. Wahid (2019); Ackerman-Anderson & Anderson (2010) added that the lack of people involved in the challenge for the implementation of ISO 9001 in universities. This is confirmed by (Herath, Herath & Azeez, 2006) management face challenges in creating an excellent culture.

Results show that the university culture for QM is inappropriate for implementation. The study found that if HEC set criteria and orders notification for international accreditation then university becomes the part of QM practices at the global level. Giving rewards and incentives to universities, proper staff training, assigning jobs to the new dedicated staff who are trained, special funds, giving awareness to universities about ISO certification with its benefits, top management commitment, proper planning involvement, and commitment are very important.

5.5 Conclusion

Conclusion drawn from the finding was based on gathered data through a survey questionnaire and interview. Research questions were as follows: (a) What are the quality management practices used effectively for the enhancement and promotion of ISO 9001:2015 in private and public sector universities? (b) What are the challenges in the implementation of quality management practices in private and public universities?

5.5.1 Conclusion from statistics (questionnaire)

The following conclusion was based on findings:

The study concluded that public sector universities embraced the customer focus through resolving HODs and teachers' complaints and management assessing HODs and teachers' satisfaction regularly. It is further concluded that private sector universities were however not enhancing the satisfaction of teachers through counselling support, career development service, and availability of officials to HODs/teachers. Although teachers and HODs of public sector universities were moderately satisfied. There are still several teachers and HODs who said that they are unsatisfied with customer focus in their universities which means that private universities have still not adopted customer focus as a quality management strategy.

The study concluded that leadership does not satisfy teachers and HODs in the universities of public and private sectors. The study further concluded that the public and private sector universities had not embraced leadership management to enhance teachers' and HODs' satisfaction as per the finding of the study.

The study concluded that teachers and HODs were moderately satisfied with the engagement of the people through the university management from the team to solve problems, HODs, and teachers involved in the program review. However, the study concluded that the university has no effective collaboration with international universities and external staff with expertise in that particular the area was not involved in the course review. The study concluded that public and private universities have not effectively enhanced resources. Teachers and HODs were not satisfied with the process approach done by their respective universities. It is concluded that public and private universities had not embraced improvement import to enhance the satisfaction of teachers and HODs. As a result of improvement by the institutional management, there is a lot to be done to enhance the satisfaction of teachers and HODs.

Teachers and HODs from the public and private sector universities were satisfied with evidence-based decision-making. It means that public and private universities adopted evidence-based decision-making as a quality management strategy. The study concluded that universities in the public sector embraced relationship management to enhance teachers' and HODs' satisfaction. The study further concluded that teachers' and HODs' satisfaction was to a great extent enhanced by the universities strive to establish a long-term relationship with HODs/teachers, and the availability of learning resources to communicate with HODs/teachers. The study further concluded that there is still a lot to be done to enhance teachers' and HODs'

satisfaction as per finding there are still private sector teachers and HODs who were dissatisfied with relationship management done by their respective universities. Overall teachers' and HODs' perceptions indicate that quality management practices were moderately practiced it means that public and private universities were practicing some practices of quality management yet public and private universities need so much improvement.

The result shows that public and private sector universities do not practice leadership, process approach, and improvement in both sectors while in the private sector customer focus and relationship management were not practiced. The study also found some challenges such as shortage of funds, lack of awareness, lack of commitment of top management, lack of resources, the existence of accreditation, resistance to change, inappropriate university culture for the implementation of quality management, time management, lack of planning, and lack of training. The study concluded that university top management must overcome the challenge for successful ISO 9001:2015 implementation in universities.

5.5.2 Conclusion from Semi-Structured Interview

It was concluded that both public and private sector universities follow the HEC self-assessment manual and requirements. In both sectors of universities, customer focus principles are very essential. For attracting students' improvement in the existing system, strategic planning is very essential for getting ISO certification in the future. As well as data concludes that future planning considered vision and mission but the public and private sector universities vision and mission and objectives are not attractive and do not provide a futuristic approach based on the quality management system. All integration needs strong management commitment and HEC support essential for getting certification after IPEs. Top management is the decision-makers.

Lack of top management commitment and improvement in policies for maintaining standards of quality in universities that show that proper planning and involvement and commitment are very important allowing public and private universities to become a learning organization that is based on continuous improvement but leadership was not practiced in public and private universities. As well as public and private universities need to build strong relationships with other departments and universities that are working at the national and international levels. A lack of planning and professional training for academic and non-academic staff was noticed.

Public sector universities conducted seminars, conferences, training, webinars, meeting, invite speakers, awareness sessions, and workshops. Private sector universities also conduct seminars, awareness sessions, and workshops, and invite speakers from other universities. In private sector universities documentation of different key performance, areas provide a direction to go towards QM ISO 90012015. Moreover, planning, monitoring, strategic direction, IPEs, improvement in existing systems as well as HEC initiatives are keys to achieving international accreditation. For public sector universities documentation, monitoring, planning, strategic direction, IPEs, improvement in an existing system, awareness among top management, and audit process is very essential. In public and private universities implementation and integration of IPEs will provide a platform for university quality management policies. Challenges that were highlighted as lack of basic resources such as internet, transportation, hostel, research facilities, library, medical facilities, funding, and lack of training of staff members related to quality matters. Heads of different departments conduct different surveys in public and private universities like student-teacher evaluations, course evaluations, employer surveys, and graduating student surveys. Self-assessment regarding QEC compliance files. These documents were collected

through a survey on an institutional level for verifying the effectiveness and weak areas were highlighted during the process of assessment. Public and private universities had all the records of students, academic and non-academic staff, and other related activities. As public and private sector universities have the potential to some extent to promote and enhance ISO 9001:2015 after IPEs. Public and private universities respondents highlighted challenges as lack of awareness, shortage of funds, lack of technical knowledge, time management, workload, lack of internal audits, lack of involvement of people, lack of resources, time management, the commitment of top management, lack of training, the existence of accreditation, inappropriate culture, incentives and rewards, resources, workload, planning, and resistance to change. The study further concludes that public sector universities lack of rewards and incentives, lack of people involvement, lack of internal audits, lack of technical knowledge from private universities workload, lack of people involvement, and lack of rewards and incentives were challenges found additionally in the qualitative study. Initiatives highlighted by private sector universities were attractive salary packages with educational facilities, leadership involvement, knowledge, rewards and incentives, special funds, involvement of HEC, mention selection criteria for staff, and a proper service structure. Initiatives highlighted by public sector universities were attractive salary packages with educational facilities, leadership involvement, training courses, proper planning, creating awareness, knowledge, rewards and incentives, special funds, and involvement of HEC are essential for international accreditation.

5.6 Recommendations

Following are some recommendations for further improvements:

Recommendation for private sector universities:

1. For customer focus, counseling services may be provided to enhance their engagement, professional commitment, and career development for teachers and HODs. It provides the tools and insights to manage mental health issues, such as anxiety and depression. Ultimately, counseling empowers people to lead healthy and fulfilling lives.
2. International collaborations and a memorandum of understanding (MOU) may be developed.
3. Lack of awareness leads to resistance to change. Leadership commitment may be enhanced through the strengthened quality management system. ISO benefits and requirements may be communicated with private sector universities' top management personnel. More seminars, webinars, meetings, conferences, and workshops may be organized for quality management practices and ISO 9001 benefits and its certification process.
4. University linkages at a national level may be enhanced especially with those universities which are ISO certified.
5. Relationship management may increase through coordination among universities, accreditation bodies, and professional bodies. Universities may work with professional bodies, sharing useful practices, developing consensus on different issues with quality enhancement cells, collaborating with related departments, and faculty members, and developing a good linkage with national and international universities which serves as feeds for the institutions.
6. Workload challenges and time management may be addressed by deputing dedicated staff to ensure quality management implementation.
7. HEC may offer private sector universities similar possibilities for research and development. A national competition may be held for this goal. The campus's

capability, including its researchers and facilities, are supported by grants for the advancement of research and development, enabling success in the rigorous national competition. Expanded chances for faculty members in R&D-rich settings, however, so they may become innovators and Maine leaders, will be the most significant result of this investment. The number of academic members engaged in R&D may be monitored and reported regularly by university campuses.

For public sector universities:

1. Consultancy services may be recommended to public sector universities for ISO certification.
2. It is noteworthy that lack of awareness leads to resistance to change. ISO benefits and requirements may be communicated with public sector universities' top management personnel. Top management may be sensitized toward the importance of quality management practices with reference to ISO standards. This may spread the quality culture in the universities. More seminars, conferences, and workshops may be organized for quality management practices and ISO 9001 benefits and its certification process.
3. Challenge of the existence of accreditation halt universities to move toward international accreditation. Lack of awareness creates this challenge ISO needs to organize seminars and workshops for communicating the benefits of the ISO quality management system to university stakeholders.
4. Research funds may be renewed for five years. Additional new selection priorities might be taken into account, like collaborations between researchers from several campuses or partnerships with local communities or the commercial sector to address important concerns. This funding could strengthen research networks and give faculty members enough time to perform their research. Results could include

quantifiable return on investment, success in leveraging outside money, and the value and effects of faculty involvement in research.

5. Staff and administration were not easily available for teachers and HODs. It may be recommended that special visiting hours or special days may be arranged for meeting with higher management so that teachers and HODs communicate their challenges and get facilitation.

Recommendation for public and private sector universities:

1. Long-term planning for quality management may be done at the departmental level.
2. The vision, mission, goals, and objectives of the universities may be redesigned keeping in view the needs and demands of global competitiveness.
3. Universities may ensure that the program offers is the right program required for the market. Each course content may develop after discussion with external experts in that particular area. In this way, universities may launch innovative and market-oriented academic programs and course content.
4. Decision-making may base on factual information for this purpose university whole system need to be documented.
5. The funding system of HEC may be revised. Public and private sector universities may give funds for international accreditation. As well as attractive salary packages and incentives offer to universities for maintaining a quality management system.
6. The libraries may be well-equipped with updated books, journals, periodicals, and electronic resources. All teachers, HODs, and directors of QEC may be given easy access to library resources.

7. The need-based training programs may be launched by the university management for teachers, HODs, and directors of QEC. These programs may focus on creating awareness about quality management concepts, procedures, and certification processes.
8. For improvement, both sector universities (public and private) need to introduce a recognized system for administrative and academic staff that reviews staff promotion and other incentives. Furthermore, universities may need to identify promotion criteria for performance improvement, scholarly, and research activities. In addition, national and international training is given to staff and may provide opportunities for HODs and teachers for professional development based on consultation and feedback from the HODs and teachers. This may be possible through strong collaboration with other national and international universities. Special rewards may be given to those faculty members and HODs who conduct research and give ideas about a low-cost research project for society's welfare. Public and private universities may provide better opportunities for the improvement of the qualifications of teachers and HODs.
9. Furthermore, for the challenge of lack of training and lack of incentives and rewards professional training regarding QM implementation may be provided based on feedback from stakeholders and may be offered attractive packages and incentives after achieving results.
10. For the process approach, university management may provide facilities like medical, internet, library, cafeteria, and research for the improvement of quality management.

11. Furthermore, top management may take initiatives for a tradition of purposeful training for Directors of quality enhancement cells, HODs, and teachers to enhance their competence in ISO processes and its documentation demands.
12. HEC may take initiative and encourage universities (public and private) to not halt IPEs but move gradually toward ISO certification so that our higher education institutions are recognized internationally. This will also help to improve the world ranking of our universities.

5.6.1. Implications

For ISO 9001:2015 commitment from senior management and leadership strategic planning will aid in achieving results. Senior faculty members and Head of Departments, collaborate closely with QEC directors to effectively implement the QMS and further teams or committees may be formed to discover the specific quality-related issues. Patience is necessary for the model's successful implementation. It could take three to six months to get ISO certified. The implementation of ISO 9001 might be started with the assistance of a consultant or outside assistance. Furthermore, the length of time relies on the structure and level of quality culture present in the institution.

First, familiarize yourself with ISO 9001 so that you can apply ISO 9001:2015. Plan everything for implementation. Develop documentation and specify roles, goals, and duties. Launching your quality management system is crucial. Review your performance. After that evaluate and then register for certification. The current quality management system will thereafter be continuously improved after successful certification. The institution moves toward excellence day by day under committed management and leadership by customer focus and reciprocal relationships with institutions and industry when employers, students, faculty members chain of customer relationships, and academic program continuously improve in light of stakeholders'

feedback, and data attained by the monitoring of the process. This stage is related to attitudinal and cultural change that occurs in the institution.

5.6.2 Future Studies Recommendations

Future studies may be conducted on styles of leadership and their impact on quality management implementation. Assessing the factors that affect the choice of the model and its implementation. Moreover, also investigate the training impact of ISO 9001 on the implementation of quality management. This study focus on the implementation of quality management practices in universities. A similar study may be conducted at the school and college levels. The central focus of this study is on universities' managerial aspects future studies may be conducted on academic aspects including different stakeholders' perceptions such as students, parents, deans, etc. There is a need to conduct a comparative study on ISO-certified and non-certified universities for the satisfaction of the customer.

Future studies may be conducted on ISO 21001:2018 standard that focuses on education. Further studies may be conducted on different national and international universities as well as conducted a study on international levels, such as Africa, Eastern Europe, and Asia after that see the impact of cross-country analysis and its benefits that gain through ISO 9001.

5.7 Limitation of the Study

Questionnaire responses were founded on the participants' perceptions, experience, and knowledge. All efforts must be done, but the possibility is also there that the responses of the participants may not be free of bias. One of the limitations of the study is related to respondents' responses about the information and their responses they request to keep the information confidential. To overcome these challenges

research first explains the study purpose and requests cooperation. They requested that information would be used only for academic purposes. Some respondents also feared while providing the information because it directly touches on the aspects of management, others fears were related to providing information as they were afraid that after providing information they would be mistreated by management. Ensuring such an incidence was not practiced. First, get permission for data collection from the management. Secondly, canceled all identities of every respondent. For this purpose, the interview and questionnaire identities of each respondent were not disclosed.

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Appendix – A

ITEMS BANK AS PER ISO 9001 QM FOR THE STAKEHOLDERS

ITEMS BANK AS PER ISO 9001 QM FOR THE STAKEHOLDERS			
Customer focus			
1	University management assesses HODs/teachers' satisfaction regularly.	HODs	Teachers
2	University management resolves HODs/teachers' complaints.	HODs	Teachers
3	University management arranges counselling support for HODs/teachers.	HODs	Teachers
4	HODs/Teachers is involved in decision-making.	HODs	Teachers
5	University officials' are easily available to the HODs/teachers.	HODs	Teachers
6	University management arranges services for HODs/teachers' career development.	HODs	Teachers
7	University management has a system for taking HODs/teachers' views.	HODs	Teachers
8	HODs/teachers are awarded for performing well.	HODs	Teachers
Leadership			
1	The leadership has a clear vision.	HODs	Teachers
2	The leadership has a clear mission.	HODs	Teachers
3	The university has clear objectives.	HODs	Teachers
4	The university has the policy to improve quality and maintain standards.	HODs	Teachers
5	University management is inclined to allocate adequate resources for quality improvement efforts.	HODs	Teachers
6	Long-term planning is done at the departmental level.	HODs	Teachers
7	University senior management provides highly visible leadership in maintaining an environment that supports quality improvement.	HODs	Teachers

8	University identifies the needs of job specifications very clearly.	HODs	Teachers
9	Decision-making is based on factual information in the university.	HODs	Teachers
Engagement of people			
1	University forms various teams to solve HODs/teachers' problems.	HODs	Teachers
2	HODs/teachers are involved in course review.	HODs	Teachers
3	HODs/teachers are involved in program review.	HODs	Teachers
4	Departments at the university collaborate with international universities.	HODs	Teachers
5	Departmental meetings of the staff are regularly conducted to address quality problems of academic program.	HODs	Teachers
6	Each course contents are developed after discussions with external staff with expertise in that particular area.	HODs	Teachers
Process approach			
1	University has a transportation facility.	HODs	Teachers
2	University has central support for research.	HODs	Teachers
3	University has sufficient medical facilities	HODs	Teachers
4	University has a sufficient emergency service.	HODs	Teachers
5	University has a sufficient hostel facility.	HODs	Teachers
6	University has adequate internet access.	HODs	Teachers
7	University has a sufficient library facility.	HODs	Teachers
8	University has sufficient cafeteria services.	HODs	Teachers
Improvement			
1	University management develops a training program for HODs/teachers.	HODs	Teachers
2	HODs/teachers are provided with opportunities to improve their qualifications.	HODs	Teachers
3	There is support for continuous professional development for HODs/teachers.	HODs	Teachers

4	Sufficient funds for research are allocated in the university.	HODs	Teachers
5	HODs/teachers are encouraged to conduct research studies.	HODs	Teachers
6	Market research is conducted for the proposed program by the university.	HODs	Teachers
7	University has an effective system for faculty to make suggestions to management on how to improve quality.	HODs	Teachers
Evidence based decision making			
1	A manual of the quality assurance system exists at the university.	HODs	Teachers
2	Details of the staff involved in quality assurance and control arrangement is available	HODs	Teachers
3	Transfers in and out of programs or courses to facilitate teachers are clearly recorded.	HODs	Teachers
4	The records of all resources are up to date and available.	HODs	Teachers
5	Detail of learning activities is available to the teachers.	HODs	Teachers
Relationship management			
1	HODs/teachers have regard for each other's opinions.	HODs	Teachers
2	The department has effective links with other institutions.	HODs	Teachers
3	Detail regarding the availability of all learning resources is communicated to HODs/teachers.	HODs	Teachers
4	University strives to establish long-term relationships with HODs/teachers'.	HODs	Teachers
5	University has an effective communication flow of information between departments.	HODs	Teachers

Sr no	Statement	*SDA 1*	*DA 2*	*UD 3*	*A 4*	*SA 5*
1	Lack of top management commitment					
2	Time management					
3	Resistance to change					
4	Existence of accreditation					
5	Lack of planning					

6	Lack of funding					
7	Lack of proper professional training					
8	Lack of awareness					
9	Lack of resources					
10	Inappropriate university culture for implementation of quality management					

Appendix – B

Questionnaire for Head of Departments/ Teachers

I am a Ph.D. scholar conducting research on the "Comparative Analysis of Quality Management Practices in Public and Private Universities". I request you to share your experience/ views through participation in this study. Your responses would be kept anonymous and used only for research purposes. Your assistance in the study would be highly appreciated.

Your university sector

Public (___) Private (___)

Gender

Female (___) Male (___)

Qualifications:

MA. (___) MPhil (___)

Ph.D. (___) Post Doc (___)

Academic Rank:

Professors (_____) Associate professors (_____)

Assistant professors (_____) Lecturers (_____)

Please respond to each item by encircling the most appropriate number as per the scale key as:

Strongly Disagree =1, Disagree =2, Undecided =3, Agree = 4, Strongly Agree =5

	Customer focus	*SDA 1*	*DA 2*	*UD 3*	*A 4*	*SA 5*
1	University management assesses HODs/teachers' satisfaction regularly.	1	2	3	4	5
2	University management promptly resolves HODs/teachers' complaints.	1	2	3	4	5
3	University management arranges counselling support for HODs/teachers.	1	2	3	4	5
4	HODs/Teachers are involved in decision-making.	1	2	3	4	5
5	University officials' are easily available to the HODs/teachers.	1	2	3	4	5

6	University management arranges services for HODs/teachers' career development.	1	2	3	4	5
7	University management has a system for taking HODs/teachers' views.	1	2	3	4	5
8	HODs/teachers are awarded for performing well.	1	2	3	4	5
Leadership						
1	The leadership has a clear vision.	1	2	3	4	5
2	The leadership has a clear mission.	1	2	3	4	5
3	The university leadership has clear objectives.	1	2	3	4	5
4	The university has the policy to improve quality and maintain standards.	1	2	3	4	5
5	University management is inclined to allocate adequate resources for quality improvement efforts.	1	2	3	4	5
6	Long-term planning is done at the departmental level.	1	2	3	4	5
7	University senior management provides highly visible leadership in maintaining an environment that supports quality improvement.	1	2	3	4	5
8	University identifies the needs of job specifications very clearly.	1	2	3	4	5
9	Decision-making is based on factual information in the university.	1	2	3	4	5
Engagement of people						
1	University management forms various teams to solve HODs/teachers' problems.	1	2	3	4	5
2	HODs/teachers' are involved in course reviews.	1	2	3	4	5
3	HODs/teachers' are involved in program reviews.	1	2	3	4	5

4	Departments at the university collaborate with international universities.	1	2	3	4	5
5	Departmental meetings of the staff are regularly conducted to address quality problems of academic program.	1	2	3	4	5
6	Each course contents are developed after discussions with external staff with expertise in that particular area.	1	2	3	4	5
Process approach						
1	University has a transportation facility.	1	2	3	4	5
2	University has central support for research.	1	2	3	4	5
3	University has sufficient medical facilities	1	2	3	4	5
4	University has sufficient financial resources.	1	2	3	4	5
5	University has a sufficient hostel facility.	1	2	3	4	5
6	University has adequate internet access.	1	2	3	4	5
7	University has a sufficient library facility.	1	2	3	4	5
8	University has sufficient cafeteria services.	1	2	3	4	5
Improvement						
1	University management develops a training program for HODs/teachers.	1	2	3	4	5
2	HODs/teachers are provided with opportunities to improve their qualifications.	1	2	3	4	5
3	There is support for continuous professional development for HODs/teachers.	1	2	3	4	5
4	Sufficient funds for research are allocated in the university.	1	2	3	4	5
5	HODs/teachers are encouraged to conduct research studies.	1	2	3	4	5
6	Market research is conducted for the proposed program by the university.	1	2	3	4	5

7	University has an effective system for faculty to make suggestions to management on how to improve quality.	1	2	3	4	5
Evidence based decision making						
1	A manual of the quality assurance system exists at the university.	1	2	3	4	5
2	Details of the staff involved in quality assurance and control arrangement is available.	1	2	3	4	5
3	Transfers in and out of programs or courses to facilitate teachers are clearly recorded.	1	2	3	4	5
4	The records of all resources are up to date and available.	1	2	3	4	5
5	Detail of learning activities is available to the teachers.	1	2	3	4	5
Relationship management						
1	HODs/teachers have regard for each other's opinions.	1	2	3	4	5
2	The department has effective links with other institutions.	1	2	3	4	5
3	Detail regarding the availability of all learning resources is communicated to HODs/teachers'.	1	2	3	4	5
4	University strives to establish long-term relationships with HODs/teachers'.	1	2	3	4	5
5	University has an effective communication flow of information between departments.	1	2	3	4	5

In your view, which of the following challenges your university is facing for quality management system implementation.

Sr No	Statement	*SDA 1*	*DA 2*	*UD 3*	*A 4*	*SA 5*
1	Lack of top management commitment					
2	Time management					
3	Resistance to change					

4	Existence of accreditation					
5	Lack of planning					
6	Lack of funding					
7	Lack of proper professional training					
8	Lack of awareness					
9	Lack of resources					
10	Inappropriate university culture for implementation of quality management					

Thank you very much for completing the questionnaire.

Appendix – C

Semi-structured interview

1. What is the specific model of quality management that follows at your university?
2. Are you aware of the international standard of quality management ISO 9001:2015?
3. What is the system of awareness of quality management at your institution?
4. What system to implement HEC criteria at the university?
5. How are you integrating quality management policies for ISO 9001:2015 into future planning?
6. What are the main challenges of the low number of ISO 9001:2015 certifications in universities?
7. How can universities get ISO 9001:2015 certification in the future?

Appendix – D

List of universities

1	Quaid-i-Azam University, Islamabad	Public	Islamabad	Islamabad
2	Pir Mehr Ali Shah Arid Agriculture, University Rawalpindi	Public	Punjab	Rawalpindi
3	National University of Modern Languages, Islamabad (NUML)	Public	Islamabad	Islamabad
4	International Islamic University, Islamabad	Public	Islamabad	Islamabad
5	University of Education, Lahore	Public	Punjab	Lahore
6	University of Haripur, Haripur	public	KPK	Haripur
7	The University of Swat	public	KPK	Swat

1	University of Central Punjab, Lahore	Private	Punjab	Lahore
2	National University of Computer and Emerging Sciences, Islamabad (FAST), Islamabad	Private	Islamabad	Islamabad
3	Institute of Southern Punjab, Multan	private	Punjab	Multan
4	Northern University, Nowshera	Private	KPK	Nowshera
5	Hajvery University, Lahore	Private	Punjab	Lahore
6	The Superior College, Lahore	Private	Punjab	Lahore
7	*Minhaj University* Lahore	Private	Punjab	Lahore

Appendix – E

Strategy Matrix for Answering Research Questions and Achieving Research Objectives

Objectives of study	1. To compare quality management practices for the enhancement and promotion of ISO 9001:2015 in public and private universities as perceived by stakeholders. 1a To compare the practice of customer focus in public and private universities as perceived by stakeholders. 1b To compare the practice of leadership in public and private universities as perceived by stakeholders. 1c To compare the practice of engagement of people in public and private universities as perceived by stakeholders. 1d To compare the practice of process approach in public and private universities as perceived by stakeholders. 1e To compare the practice of improvement in public and private universities as perceived by stakeholders. 1f To compare the practice of evidence-based decision-making in public and private universities as perceived by stakeholders. 1g To compare the practice of relationship management in public and private universities as perceived by stakeholders. **2.** To explore the challenges in the implementation of quality management in private and public universities.
Research hypotheses	1-8 hypothesis
Mode of answering	1. Survey result (questionnaire) 2. Inferential statistics t-test 3. descriptive statistics percentage

Qualitative data analysis

Research questions	1. What are the quality management practices used effectively for the enhancement and promotion of ISO 9001:2015 in private and public sector universities? 2. What are the challenges in the implementation of quality management in private and public universities? 1. What is the specific model of quality management that follows at your university? 2. Are you aware of the international standard of quality management ISO 9001:2015? 3. What is the system of awareness of quality management at your institution? 4. What system to implement HEC criteria at the university? 5. How are you integrating quality management policies for ISO 9001:2015 into future planning? 6. What are the main challenges of the low number of ISO 9001:2015 certifications in universities? 7. How can universities get ISO 9001:2015 certification in the future?
Mode of answering	Qualitative analysis (semi-structured interview)

Appendix – F

Results

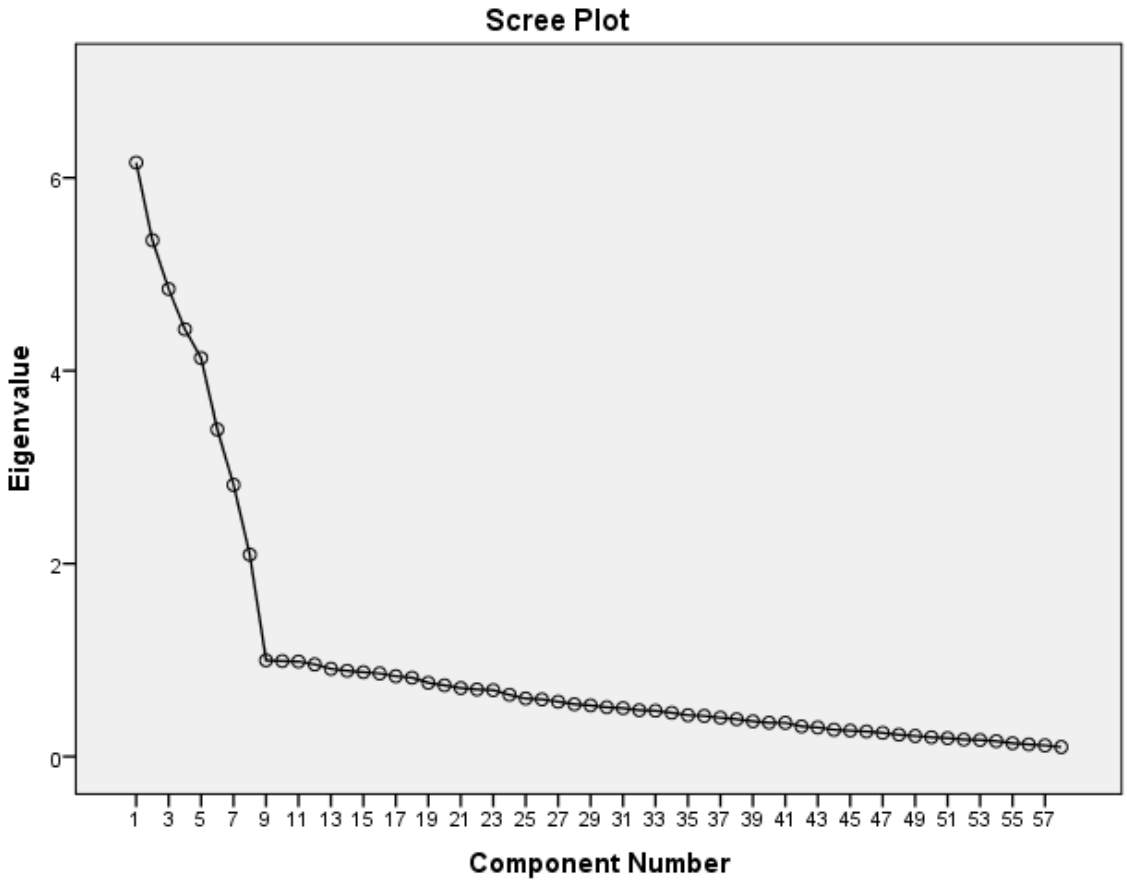
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.738
Bartlett's Test of Sphericity	Approx. Chi-Square	5062.452
	Df	1653
	Sig.	.000

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
C8	.798							
C10	.755							
C1	.753							
C2	.721							
C4	.696							
C9	.695							
C3	.695							
C6	.692							
C5	.685							
C7	.670							
L4		.761						
L8		.757						
L5		.751						
L7		.747						
L6		.696						
L2		.693						
L9		.689						
L3		.684						
L1		.667						
cf6			.788					
cf8			.780					
cf7			.765					
cf5			.751					
cf1			.750					
cf4			.743					

cf3			.698					
cf2			.690					
PA5				.791				
PA1				.789				
PA2				.780				
PA4				.759				
PA6				.751				
PA7				.734				
PA8				.674				
PA3				.652				
I7					.786			
I1					.779			
I6					.773			
I3					.762			
I4					.754			
I2					.699			
I5					.684			
EP3						.792		
EP5						.761		
EP2						.759		
EP1						.751		
EP6						.692		
EP4						.689		
RM5							.766	
RM2							.752	
RM3							.736	
RM4							.732	
RM1							.692	
EBDM5								.786
EBDM4								.766
EBDM1								.744
EBDM2								.695
EBDM3								.683


Scree Plot
Eigenvalue
0
2
4
6
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57
Component Number

Appendix – G

Emergent theme and sub-theme

Theme and sub-theme	Sub-theme
Theme 1: **specific model**	HEC IPEs evaluation
Theme 2: **Principles**	Customer Focus
	Leadership
	People involvement,
	Process approach,
	Improvement,
	Evidence-based decision-making,
	Relationship management
Theme 3: **Awareness**	Seminar
	Workshop
	Invite speakers,
	Webinars,
	Conference
	Training,
	Awareness session
	Meetings
Theme 4: **Criteria**	Teachers evaluation,
	Course evaluation,
	Employer survey,
	Graduating student's survey
	M.Phil. Ph.D. reviews
	Faculty appointment criteria
	Research papers criteria
	Survey
	Faculty course review report,
	Student course evaluation questionnaire

	Research student progress review form,
	Alumni survey
	Student teachers evaluation
	Faculty Survey,
	Teacher evaluation form,
Theme 5: **Integration**	Documentation,
	Planning
	IPEs
	Awareness among top management
	HEC initiatives
	Strategic direction
	Improvement in existing system
	Audit processes
	Strategic planning
	Monitoring
Theme 6: **challenges**	Lack of commitment of top management
	Resources unavailability
	Resistance to change
	Lack of awareness
	Lack of technical knowledge
	Lack of training
	Existence of accreditation
	Workload
	Lack of incentives and rewards
	Lack of funds
	Lack of human resources
	Lack of internal audit
	Lack of planning
	Time management
	Inappropriate culture
	Lack of involvement of people

	Resistance of employees
Theme 7: **Initiatives**	Rewards and Incentives
	Knowledge
	Selection criteria
	Attractive salary package
	leadership involvement
	Special funds
	Create awareness
	Involvement of HEC
	Educational facilities
	Proper service structure
	Training courses
	Proper planning

Appendix – H

Emergent theme and sub-theme (public sector universities)

Theme and sub-theme	Sub-theme
Theme 1: **Specific model**	HEC IPEs evaluation
Theme 2: **Principles**	Customer Focus
	Leadership
	People involvement,
	Process approach,
	Improvement,
	Evidence-based decision-making,
	Relationship management
Theme 3: **Awareness**	Seminar
	Workshop
	Invite speakers,
	Webinars,
	Conference
	Training,
	Awareness session
	Meetings
Theme 4: **Criteria**	Teachers evaluation,
	Course evaluation,
	Employer survey,
	Graduating student's survey
	M.Phil. Ph.D. reviews
	Faculty appointment criteria
	Research papers criteria
	Survey
	Faculty course review report,
	Student course evaluation questionnaire

	Research student progress review form,
	Alumni survey
	Student teachers evaluation
	Faculty Survey,
	Teacher evaluation form,
Theme 5: **Integration**	Documentation,
	Planning
	IPEs
	Awareness among top management
	HEC initiatives
	Strategic direction
	Improvement in existing system
	Audit processes
	HEC initiatives
	Monitoring
	Strategic planning
Theme 6: **challenges**	Lack of commitment of top management
	Resources unavailability
	Resistance to change
	Lack of awareness
	Lack of technical knowledge
	Lack of training
	Existence of accreditation
	Lack of incentives and rewards
	Lack of funds
	Lack of human resources
	Lack of internal audits
	Lack of planning
	Time management
	Inappropriate culture
	Lack of involvement of people

	Resistance of employees
Theme 7: **Initiatives**	Rewards and Incentives
	Knowledge
	Attractive salary package
	leadership involvement
	Special funds
	Create awareness
	Involvement of HEC
	Educational facilities
	Training courses
	Proper planning

Appendix – I

Emergent theme and sub-theme (Private sector universities)

Theme and sub-theme	Sub-theme
Theme 1: **specific model**	HEC IPEs evaluation
Theme 2: **Principles**	Customer Focus
	Leadership
	People involvement,
	Process approach,
	Improvement,
	Evidence-based decision-making,
	Relationship management
Theme 3: **Awareness**	Seminar
	Workshop
	Invite speakers,
	Awareness session
Theme 4: **Criteria**	Teachers evaluation,
	Course evaluation,
	Employer survey,
	Graduating student's survey
	M.Phil. Ph.D. reviews
	Faculty appointment criteria
	Research papers criteria
	Survey
	Faculty course review report,
	Student course evaluation questionnaire
	Research student progress review form,
	Alumni survey
	Student teachers evaluation
	Faculty Survey,
	Teacher evaluation form,
Theme 5: **Integration**	Documentation,

	Planning
	IPEs
	HEC initiatives
	Strategic direction
	Improvement in existing system
	HEC initiatives
Theme 6: **challenges**	Lack of commitment of top management
	Resources unavailability
	Resistance to change
	Lack of awareness
	Lack of training
	Existence of accreditation
	Workload
	Lack of incentives and rewards
	Lack of funds
	Lack of human resources
	Lack of planning
	Time management
	Inappropriate culture
	Lack of involvement of people
	Resistance of employees
Theme 7: **Initiatives**	Rewards and Incentives
	Knowledge
	Selection criteria
	Attractive salary package
	leadership involvement
	Special funds
	Involvement of HEC
	Educational facilities
	Proper service structure