

Implementation of Total Quality Management(TQM) in Palestinian higher education institutions (Birzeit University, An- Najah National University, Al-Quds University)and its relationship TO the institutions' performance.

Mohammed k. Mahamda

Abstract: Education plays avital role in economic growth, sustainable development, and nations'welfare; and due to the increasingly technological progress world wide. The international tendencies become focusing on adoption new systems, new techniques, new strategies to enhance quality more than quantity in education system, and due to the importance of quality service of higher education , it becomes very necessary to shed light on implementation the total quality management(TQM) in higher education institutions to contribute in saving time and resources and enhancing the institution's performance .The purpose of this research is to examine the extent of implementation the total quality management(TQM) in Palestinian higher education institutions (Birzeit University, An-Najah University,and Al-Quds University),and its relationship to these institutions' performance. The research would be a quantitative research by using a survey questionnaire designed according toMalcolm Bridge National Quality Award (MBNQA criteria) for collecting data;in addition to, secondary data by revising published articles in general journals, and other online publications, in total of 33 questionnairesfrom faculty deans of (Bi rzeit University,An-Najah University ,and Al-Quds University) wereanalyzed by SPSS to assess the level of TQM implementation and its relationship to the performance of these universities.

Key findings: the degree of TQM implementation was the highest level at Birzeit University for all elements with (88%),Al-Quds University was in the second level with (85%),and An-Najah National University in the lowest levelwith (77 %). When comparing Al-Quds University with Birzeit University, the degree of TQM implementation at Birzeit is higher for all elements except for "process management" and "performance results ". Regarding leadership element implementation, the degrees were equal for Birzeit and Al-Quds with 87%, while it was 82 at An-Najah.The correlation between performance results and the six TQM factors was positive, that is increasing in TQM factors affects performance positively. Ahigh correlation exists between information and analysis implementation and performance (0.747) that is a strong positive linear relationship exists, a strong positive relationship also exists between performance and each of human resources factor implementation and student focus (0.731, 0.604 respectively).A moderate positive relationship exists between performance and each of strategic planning, and leadership, and finally a weak positive relationship exists between performance and process management.

Keywords: Total Quality Management, higher education system, sustainable development, Institutions' performance.

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I. Introduction

Education system in Palestine is led by the Ministry of education and higher education which represented the main administrative and regulatory body for the Palestinian education sector since the end of 1994. Working in this domain along with the Ministry have been other private education providers like the United Nations Relief and Works Agency for Palestine Refugees (UNRWA), NGOs (Ministry of Education, 2017).

The education system in Palestine faces several pressures and obstacles including the rapid population growth and increasing the unemployment ratios among Palestinian graduates, lack of economic opportunities and oflimited financialresources.

Total quality management (TQM) has been required world wide to enhance the institution's performance and to improve the competitive advantage for the institutions environment, the changes in environment's competitive advantage forced the institutions' to adopt total quality management in their systems to formulate new strategies to improve their internal efficiency and external effectiveness (Baidoun,Salem, and Omran ,2018).

Total quality management (TQM) leads to business excellence and Business excellence is not only by delivering the required output with high quality to the customers, but management strategy is to enhance and align the processes in away the excellence becomes inherent in the part of ways working (Sunder M., Antony,2018).

There are several definitions of (TQM), and it can be defined as a management approach that seeks to achieve and sustain long term organizational success by encouraging employees' feedback and participation, satisfying customer needs and expectations, respecting social beliefs and values obeying governmental regulations and rules (Altahayneh,2014).

Total quality management(TQM) applied in manufacturing organizations , but there is no limit to apply it in other institutions like higher education system and recently there was necessity to improve the quality service in higher education due to its high effect on the output of education , for this reason there are many developed frameworks that are used to assess quality services like European foundation for quality management (EFQM) (Sadeh ,& Garkaz ,2015), and Malcolm Bridge National Quality Award(MBNQA) .This research will adopt the (MBNQA) with its seven categories(leadership, strategic planning, student-focus, human resource focus, process management, and results) to examine the extent of implementation of total quality management (TQM) in Palestinian higher education institutions (Birzeit University , An-Najah National University , Al-Quds University) and measure the reliability of its elements in evaluating the performance of these institutions .

II. Literature review

Definitions & History

The international trends and increasingly technological progress affected the way and methods of working inside institutions and organizations , and they started to adopt modern systems and techniques to be able to enhance their competitive advantage and to improve the quality of products and services with the increasingly and quick change of the competition environment , they become focused more on the customer satisfaction and human resource team who are leading and managing the resources inside the organizations and institutions(Aminbeidokhtia, Jamshidia,& Hoseini ,2016). Education is considered as a one of the fastest growing services in an economy , and in the last five decades , the enrollment of students has increased , and the crises have become more challenging with the increase of student numbers which resulting in increasing the numbers of higher education institution without diluting the quality (Gupta,& Kaushik(2018).Declining the quality of graduates, increasing competition , and growing mandates for accountability by accreditation associations , legislatures , and funding bodies forces higher education institutions to focus on quality (Ariff, Zaidin ,& Sulong ,2007), and according to Papanthymou, & Darra (2017)"quality is linked to the meaning of superiority and excellence and it means that there are fewer products or services with defect".

"TQM appeared in 1980s when it was suggested to replace the word "control" with "management "and it was believed that quality is not something to be controlled but to managed (Sahney ,2016). The word quality derived from Latin word, which means "what kind of "it consists of a variety of meanings and implies different things to different people, according to Juran "quality is fitness for use or purpose " Crosby considers it as "conformance "in General quality is one " which satisfies customer needs and continuously keeps on performing its elements as per specified standard. TQM "is the process of integration all activities, functions, and processes with higher educations (Ali,&Shastri ,2010).

Many researchers wrote about (TQM) in their researches and defined it in several ways. It is a defined as approach system performing horizontally through an organization involving all departments and workers and extending backward and forward to include both suppliers and customers "and "it is management approach used to improve quality , efficiency and productivity in organizations especially in businesses", "(TQM) ensures to fulfill the needs as indicated by customers "(Suleman,2015), and excellence in quality is not merely delivering the required output to the customers , but a management strategy to enhance and align processes in the way that excellence becomes inherent part of way working (Sunder M, Antony (2018). Quality also is "a pluralistic concept and it is categorized in, meeting customers' expectations, value for money, fitness for purpose, and meeting the requirements of society" (Pham, Starkey,2016).

Total quality management(TQM)is a contributory managerial system to improve efficiency and achieve better results in an organization ,(Major&Luís 2016), and the success of the organization can be measured with the ability of the organization in coping with new challenges and obstacles locally and internationally by adopting a modern systems in human resource management and updated technological methods in learning process , and due to global competition increasing of demand on higher education and increase number of higher academic institutions , the need for implementing (TQM) has been increased to improve and manage the substantial resources by using (TQM) techniques , methods , and procedures .(TQM) is defined as "an

integrative management philosophy and set of guiding principles, representing the foundation of a continuously improving organization/institution “(Pushpa L, 2015).

(TQM) is an input of the internal and external of an organization and transformational leadership (TL)and executive ability as mechanism (process) to promote and coordinate internal –external elements for the organization obtaining its sustainable competitive advantage (output)(Chen, Lee,&Wang,2018).TQM “ is a modern management thinking and an expedition ,not a destination and the TQM practices differs from sector to sector (Bajaj, Garg, Sethi , 2018).

The fundamental core values forming the building blocks of (TQM) framework for higher education setting are the following : leadership, and quality culture , continuous improvement and innovation in education processes, employee participation and development , fast response to management information, customer-driven quality and partnership development (Psomas, Antony ,2017), the aim of total (TQM) is to create within the organization a climate in which all the resources are used creatively and efficiently and which gives the staff the confidence in management, and this requires new ways of thinking , implementation of strategic management and implementation of quality management (Todorut,2013).TheTQM also is a continuous effort by the institution to improve customer value (Sulaiman, Manochehri,& Al-Esmail 2013).

This research will adopt the definition of (Sunder M, &Antony 2018) for TQM which is “a management strategy to enhance and align processes in the way that excellence becomes inherent part of way working”, because it is the most recent and comprehensive definition of all the previous definitions of TQM.

Application

Implementation of Total Quality Management (TQM) by adopting the principles of (TQM) such as continuous improvement, top management support, employee involvement, employee empowerment will enhance and increasing the level of students’ satisfaction, staff motivation, improved student enrolment, and low labor turnover and team work (Atieno, A Patrick,&Ogweno ,2014).

Implementation of TQM affects the sustainable competitive advantage and it is a particle path of institution in pursuit of sustainable development (Chen, Lee, & Wang ,2018),the impact of (TQM) reflected on the institutions’ performance when senior executives are committed to improve quality standards and enable them to excellence which will increase production capacity , reducing the cost of performance ,and improving the quality of products and services provided to the beneficiary (Zabadi ,2013)."The majority of quality improvement endeavors requires that people from several different departments work together to identify problems , analyze data ,to uncover the root causes of the problem, fix the issues , and then put in place processes to keep the problem from returning (Uluskan, McCreery, & Rothenberg ,2018).TQM “is a strategic management approach which upholds quality asa way of life initiated by the top management , the higher education institutions applies quality principles in businesses processes to realize its vision ,mission and goals (Rodriguez, Valenzuela, Ayuyao ,2018).

The impact of implementation (TQM) in higher education institution will increase the competitive advantage , by more innovations , flexibility , and financial potential , and it allows a better control of processes in planning, design , and achieve high quality services (Todorut,2013); moreover implementing TQM would be powerful tool to, first improving economic condition by achieving goal oriented system it enables any nation to become to oriented better for its generation, second reducing poverty by sharing in proper distribution of financial resources ,third better healthcare ,educated individual is more careful about their health care and take accrue of diseases,(Singh,& Trivedi ,2018).

Models

According to the importance of implementing Total Quality Management (TQM) in higher education institutions, we should shed light on the models thatcontains parts dealing with quality management to achieve measurable quality output, according to Becket, & Brookes(2008),there are six models that deal with quality management: **First**, EFQM (European framework for quality management) which is suitable for any organization to assess progress toward excellence and it is divided between enablers and results.**Second**Balanced scorecard which is strategic management system utilizes four measurements perspectives, financial, customer, internal process, and learning and growth. **Third**, ISO 900 series, which is an international standard for generic quality assurance systems and its elements are customer quality and regulatory requirements and efforts made to enhance customer satisfaction to achieve continuous improvement, business. **Fourth**, Process-reengineering which is a system to enable redesign of business processes to achieved improved performance and consist of five components, strategy, processes, technology, organization, and culture. **Fifth**, SERQUALmodel which focuses on the quality from the customer perspectives, and it consists of five elements, reliability, assurance and empathy, and identify where gap exist. **Sixth**, and last model is MBNQA (Malcolm Bridge National Quality Award frame work), which is frame work of performance excellence and can be used to

improve the intuitions' performance and consists of seven categories, leadership, strategic planning, customer and market focus, human resource focus, process management, and results (Baidoun, Salem, Omran ,2018).

The considerable expansions of higher education globally has been accompanied by persistent concerns related to the quality of higher education and the adequacy of preparation of students for the workforce, many universities are also assessing students learning outcomes tied to the academic and career objectives, structured content and skills development and craft curricula to integrate academic knowledge with technical and professional skills, (Nauffal,& Skulte-Ouaiss ,2018).

In this research, we will adopt the MBNQA (Malcolm Bridge National Quality Award framework)to investigate about the level of implementation with its seven categories in higher education institutions of Palestine (leadership, strategic planning, student-focus, human resource focus, process management, and results) and their effect on those institutions performance, because its components are more apprehensive than other models and could be adopted on higher education sector alongside with other sectors like industrial sector.

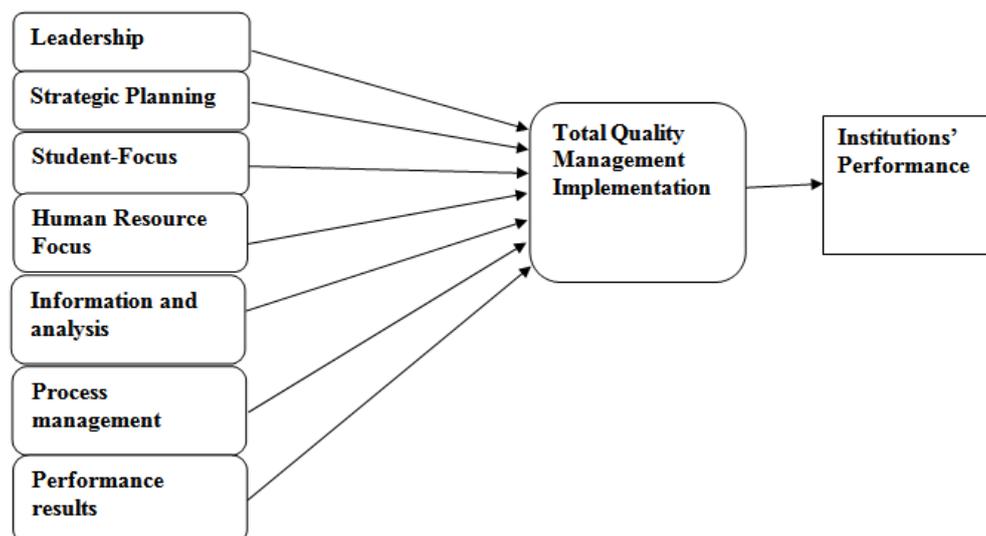
Implementation of TQM in higher academic institutions

Palestine occupies a high level of education among Arab countries, and it considered as a main source of individual income, so the investment in education becomes one of the main priorities for Palestinian people due to the scarcity of economic resources and hardpolitical circumstances under Israeli occupation.

Higher education institutions have been established before coming the Palestinian Authority in 1994, and the number of universities in the Palestinian territory increased in 2011 by 14 universities (2 governmental , 3private , 9 public) 15 universities college , so the number of institutions of higher education in Palestine (49) institutions involving about 214 thousand students including 6600 students in the master's programs , and about 65 thousand students in open education are distributed all disciplines of about (1100) specialization and academic program . It employs approximately 14600 employees who are divided into academic, administrative, and service carders (21%) part time ,the rate of enrolment in higher education for the age group (18-24) yeas is about 30% the database of higher education(Ministry of Education and Higher Education of Palestine 2017), the ministry of education and higher education of Palestine is supervising supporting , and directing the growth of Palestinian higher education through its council bodies, administrations, and various units based on the higher education law 1998(European Commission 2016).

Education plays a vital role in economic growth , and sustainable development , and for achieving the ultimate goal of higher education in Palestinian, the implementation of TQM is highly required to ensure the quality service and fostering the competitive advantage of higher education institutions and to improve the institutions performance ,many researchers encountered to the implementation globally (Pushpa,2018 ; Ali, & Shastri 2010; Todorut2012;Becket;&Brookes2008;Zabadi 2013),TQM encourages a disciplined orientation and has shown improved results in terms of customer service, staff and faculty morale administrative processes and course quality”(Prakash,2018).Quality management is defined in all universities as a strategic area of activity and several efforts are being made to develop quality systems in compliance with national and European standards(Manatos, Rosa, Sarrico 2018).

In this research, i will assess the implementation level of (TQM) total quality management elements by using (Malcolm Bridge National Quality Award (MBNQA) with its seven factors (leadership, strategic planning, student-focus, human resources focus, information analysis, process management, and performance results) in three Palestinian Universities (Birzeit University, Al-Quds University,& An-Najah National University), and its relationship to the performance of these Universities) by disseminating questionnaire survey created by the researchers(Baidoun, Salem, Omran ,2018),to the faculty deans in the above mentioned three Palestinian universities.



Need of the Study

Research Problem Statement

The study of implementation the TQM in Palestinian higher education sector and precisely in the biggest three higher education institutions is increasingly important mainly because of the unique challenges that face higher education sector in Palestine and there is so far no existence for any study that deal with current sample.

The problem addressed in this study is to examine about the extent of implementing the Total Quality Management (TQM) in three Palestinian higher education institutions (Birzeit University, An-Najah National University, Al-Quds University).

Research Objectives

- Our research aims to examine the Total Quality implementation level at three Palestinians higher education Institutions (Birzeit University, An-Najah national University, Al-Quds University) and its relationship to the performance of these institutions and the reliability of using the MBNQA model to measure their performance.

Research significance

This study is important because in the Palestinian context there is no published research dealt with this topic before on the same sample of research , so this study will assess the level of implementation TQM in three Palestinian higher education institutions (Birzeit University , An-Najah national University ,and Al-Quds University) by applying the MBNQA criteria and investigate about the level of implementing its seven categories (in these institutions ((leadership, strategic planning , customer and market focus , human resource focus , process management , and performance results) and their relationship to these institutions' performance."Moreover It will contribute in endorsing and enhancing the institutions effectiveness by providing information and indicators about ,students satisfaction, leadership focus , human resources ,student-focus, strategic planning process which will share in improving the institutions performance in the future. Moreover, it would be a good reference for the future researchers who will do their research about TQM in higher education sector in Palestine.

For all previously mentioned reasons, the implementation of TQM in higher education institutions of Palestine is highly important to achieve success and sustainability in the education-service of Palestinian higher educationsector.

Research Limitations

- One of the basic limitations that we are facing throughout our research is the lack of literature that tackles our chosen population especially the education sector in Palestine.
- Time constraint represents a major limitation for our study where two months and a half are relatively insufficient to conduct such a research.
- The research covers three Palestinian higher academic institutions not all of higher academic institutions.

Research Questions

Two major questions will be subjected to examination in our research:

Q1. To what level are the components of TQM implemented at the Birzeit University, An-Najah National University, & Al-Quds University)?

Q2. Whether the TQM elements represent a reliable standard to measure and predict the institutional performance?

III. Methodology

In order to conduct our research we will obtain our primary data through disseminating questionnaire survey created by the researchers (Baidoun, Salem, Omran, 2018) to the faculty deans at (Birzeit University, An-Najah National University, & Al-Quds University). The questionnaire is designed to assess level of implementing the elements of TQM in chosen population based on seven categories adopted by MBNQA (Malcom Bridge National quality Award) (leadership, strategic planning, student-focus, human resource focus, process management, and results); in addition to, secondary data by revising published articles and other online publications.

Population

The population of this study included all faculties of Palestinian universities.

Sample

A two-stage sample was drawn, where a purposive sample of 3 universities was drawn at the 1st stage, then faculties in the selected universities represented by the deans of these faculties as the sampling units.

Study tools

The questionnaire which was used in this study composed of 7 parts, the first asked about the university, the faculty, and the gender of the dean, while the other six parts represent the TQM elements; Leadership, Strategic planning, Student focus, Human resources, Information and analysis, Process management.

The seven TQM elements includes 68 items as shown in the table below, the deans have to answer about their level of agreement about implementing these items in the faculties they manage using a 4-points Likert scale “strongly agree, agree, disagree, strongly disagree”

Table 1: TQM items

No	Item
Q.1	Leadership
Q 1.1	The top management of the HEI (higher education institution) Gives priority to processes and service quality rather than to their quantity.
Q 1.2	The top management actively participates in quality improvement efforts and communicate its commitment to quality to teaching staff and employees.
Q 1.3	The top management sets the quality issues on the agenda of the managers' meetings.
Q 1.4	The top management motivates and gives the authority to teaching staff and employees to manage and solve quality problems.
Q 1.5	The top management supports quality improvement by providing the necessary resources.
Q 1.6	The university anticipates public concerns about its services.
Q 1.7	The university participates enthusiastically in social or community services.
Q 1.8	Top management actively seeks feedback.
Q.2	Strategic Planning
Q. 2.1	The quality policy is taken into consideration in strategic planning.
Q. 2.2	Strategic objectives and quality goals are clearly defined.
Q. 2.3	Strategic objectives and plans are effectively communicated to all teaching staff and employees.
Q. 2.4	In defining our strategic objectives, we are fully concerned about the various potential external factors such as technological changes, economic environment and market needs.
Q. 2.5	In defining our Institution's strategic objectives, we are fully concerned about the various potential internal factors such as availability of financial and human resources.
Q. 2.6	The institution sets quality objectives for managers, teaching staff and employees.
Q. 2.7	Every staff member in our university is aware of our strategic objectives and action plan to be accomplished.
Q. 2.8	The requirements and expectations of the students are taken into consideration in planning the processes and the services.
Q. 2.9	The quality objectives are being set based on the needs and requirements of the students and market.
Q. 2.10	The process outputs are compared with the objectives of the institution.
Q. 2.11	We integrate public responsibility into performance improvement effort.
Q. 2.12	We lead the efforts to improve community services.
Q.3	Student-Focus

Q. 3.1	The university identifies its target students well.
Q. 3.2	Students' complaints, satisfaction and proposals for quality improvement are determined and analyzed.
Q. 3.3	We as a faculty have a well-established communication channel with our students.
Q. 3.4	The senior managers are in close contact with the students and have close relationships with them.
Q. 3.5	The needs, requirements, desires and expectations of the students are recorded and analyzed.
Q. 3.6	The teaching staff are in close contact with the students and have close relationships with them
Q. 3.7	Students are encouraged to submit complaints and proposals for quality improvement.
Q. 3.8	The objectives of the institution overcome students' expectations.
Q. 4	Human Resource Focus
Q. 4.1	The university promotes innovation by empowering its teaching staff, employees and students.
Q. 4.2	The university has an effective staff performance appraisal system.
Q. 4.3	The university encourages teamwork and team spirit.
Q. 4.4	Our management motivates teaching staff and employees and fully develops their potential.
Q. 4.5	The university trains its teaching staff and employees in quality concepts.
Q. 4.6	The university provides training and development for its teaching staff and employees.
Q. 4.7	Teaching staff and employees participate in the decision-making process and in setting quality objectives.
Q. 4.8	Teaching staff and employees who make significant efforts for quality improvement are awarded.
Q. 4.9	The university provides a safe and healthy work environment.
Q. 4.10	The university provides teaching staff with students-focused training
Q. 5	Information and analysis
Q. 5.1	The university has an effective system to assess its quality performance.
Q. 5.2	The university has a clear, comprehensive performance management system.
Q. 5.3	All teaching staff and employees understand the indicators linked to their performance well and take them seriously.
Q. 5.4	The university adjusts its performance according to the changes in the environment.
Q. 5.5	Senior management adjusts the university's policy and strategy by analyzing information and facts.
Q. 5.6	Quality data are taken into consideration from top management in the decision-making process.
Q. 5.7	Quality data are taken into consideration by the teaching staff and employees during their daily tasks.
Q. 5.8	The teaching staff and employees are educated in quality management and problem-solving techniques.
Q. 5.9	Resources are provided for educational purposes.
Q. 6	Process management
Q. 6.1	In designing processes factors like quality, costs, and service are considered.
Q. 6.2	Before applying new procedures, the university conducts comprehensive tests to assure quality.
Q. 6.3	The critical quality processes are determined and their performance is evaluated.
Q. 6.4	Has processes and teaching methods that are designed to meet all the service quality requirements.
Q. 6.5	The university continuously improves its teaching methods and processes to enhance the overall service quality development.
Q. 6.6	Process improvement initiatives are shared among departments.
Q. 6.7	We evaluate services on the basis of effectiveness, including appropriateness and risk.
Q. 6.8	Quality of education services are contingent according to students' need.
Q. 6.9	Has performance measurement system that evaluates its quality improvement processes.
Q. 7	Performance results
Q. 7.1	Students are satisfied with our education services.
Q. 7.2	Our university is able to meet its financial obligations.
Q. 7.3	Our system of remuneration and benefits is satisfactory.
Q. 7.4	In general, the teaching staff and employees are satisfied with their respective department.
Q. 7.5	Our education services are expanding.
Q. 7.6	Overall, service quality is improving steadily.
Q. 7.7	Students' evaluations of our performance have been improving.
Q. 7.8	The number of teaching staff members (in the faculty) who have been awarded PhD degree is sufficient.
Q. 7.9	The number of teaching staff members (in the faculty) who have been awarded Master degree is sufficient.
Q. 7.10	The number of teaching assistants in the faculty is sufficient.
Q. 7.11	The number of administrative employees in the faculty is sufficient.
Q. 7.12	The number of technicians in the faculty is sufficient.

Data analysis

The statistical package SPSS version 22 was used for data processing, including data cleaning, data coding and finally data analysis:

- Descriptive statistics were applied to analyze the sample distribution.
- Descriptive statistics were applied to determine the TQM elements mostly implemented in HEIs.
- The reliability and the validity of theoretical constructs used in questionnaire was evaluated through the calculation of the Cronbach's alpha coefficients. A factor analysis used to examine the constructs validity.
- Cross tabulations of TQM degree of implementation by institution.
- Spearman correlation between TQM factors and performance.

IV. Results

Sample characteristics

33 deans completed the questionnaire, where they distributed as in figure 1, 45.5 % of them were of Al-Quds University, 30.3% were of An-Najah University and 24.2% f were of Birzeit University. In figure 2, the majority of faculty deans were males about 85% of the sample, and 15% females.

Figure 1: sample distribution by institution

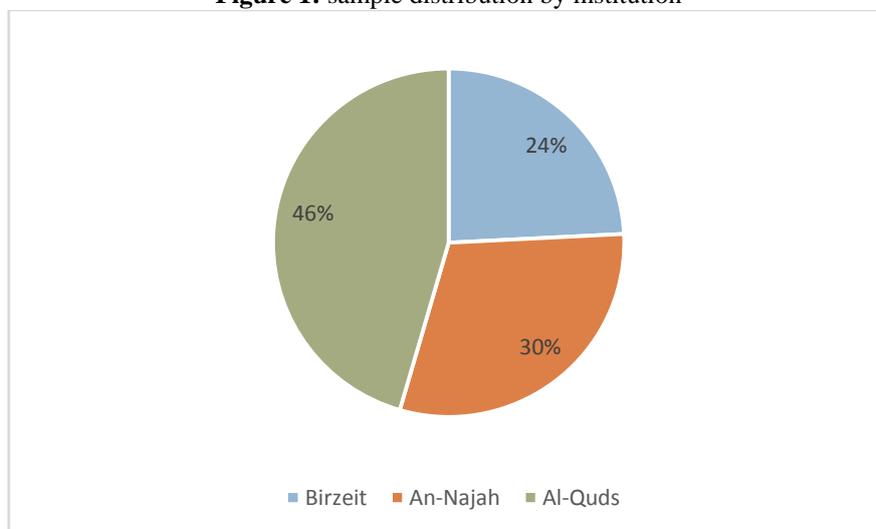
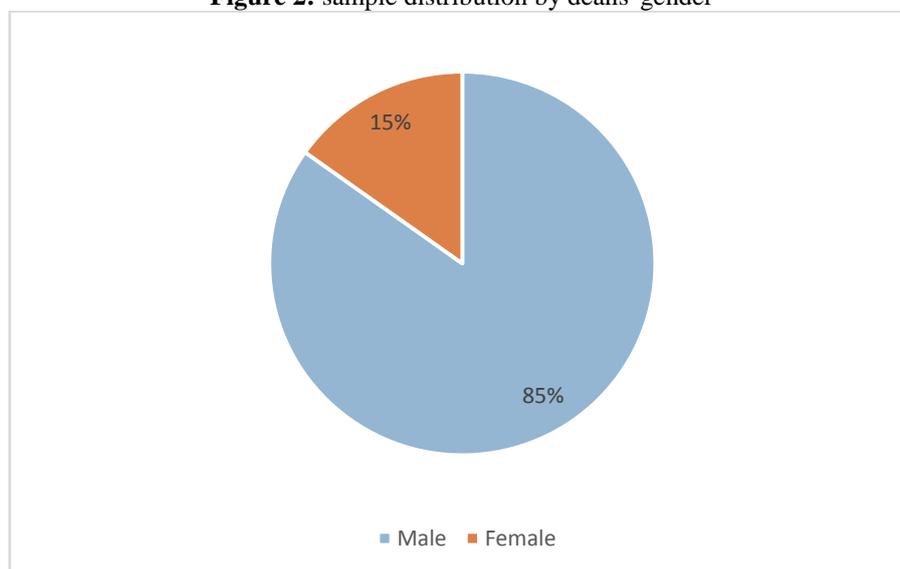


Figure 2: sample distribution by deans' gender



Reliability and Construct validity

Looking at table 1, the reliability of theoretical constructs of variables was confirmed as values of the Cronbach's alpha coefficients exceeded the cut-off point of 0.7, except for "student focus", but still it satisfies the acceptable cut-off point of 0.6.

Construct validity which represent here the degree to which the used scale measures what it claims (TQM), this validity was analyzed using exploratory factor analysis. Bartlett's test of sphericity¹ and Kaiser-Meyer-Olkin (KMO)² statistic were used for testing the possibility of performing factor analysis, the output of

¹**Bartlett's test of sphericity:** tests the hypothesis that your correlation matrix is an identity matrix, which would indicate that your variables are unrelated and therefore unsuitable for structure detection

² **Kaiser-Meyer-Olkin Measure of Sampling Adequacy** is a statistic that indicates the proportion of variance in your variables that might be caused by underlying factors.

the test was a non-positive matrix of correlation The most likely reason for having a non-positive definite matrix is that we have too many variables and too few cases of data, which makes the correlation matrix a bit unstable, hence we can't perform factor analysis here.

Total quality management elements adopted in higher education institutions (HEIs)

The mean values of implemented TQM elements were calculated based on the mean values of the indicators involves in each element, then the mean value transformed to score of 100 as clear in table 1 to express the degree of implementing TQM elements. It is clear in the table those HEIs institutions participating in the study implemented TQM elements to a great extent. The least implemented element was “information and analysis” with 81% degree of implementation, while the highest implemented elements were “leadership” and “student focus” with 86% degree of implementation.

Table 2: TQM elements implemented in HEIs

TQM factor	Cronbach's α	Degree of implementation of 4	Degree of implementation of 100
Leadership	0.744	3.44	86
Strategic planning	0.912	3.36	84
Student focus	0.624	3.44	86
Human resources	0.858	3.32	83
Information and analysis	0.878	3.24	81
Process management	0.929	3.32	83
Performance results	0.753	3.24	81
Overall	0.959	3.32	83

TQM elements' implementation in HEIs by institution

According to figure 2, the degree of TQM implementation was higher at Birzeit University for all elements than An-Najah University, and the same comparison met when we compare Al-Quds University with An-Najah University.

When comparing Al-Quds University with Birzeit University, degree of TQM implementation at Birzeit is higher for all elements except for “process management” and “performance results “. Regarding leadership element implementation, the degrees were equal for Birzeit and Al-Quds with 87%, while it was 82% at An-Najah.

Figure 3: TQM elements' implantation in HEIs by institution

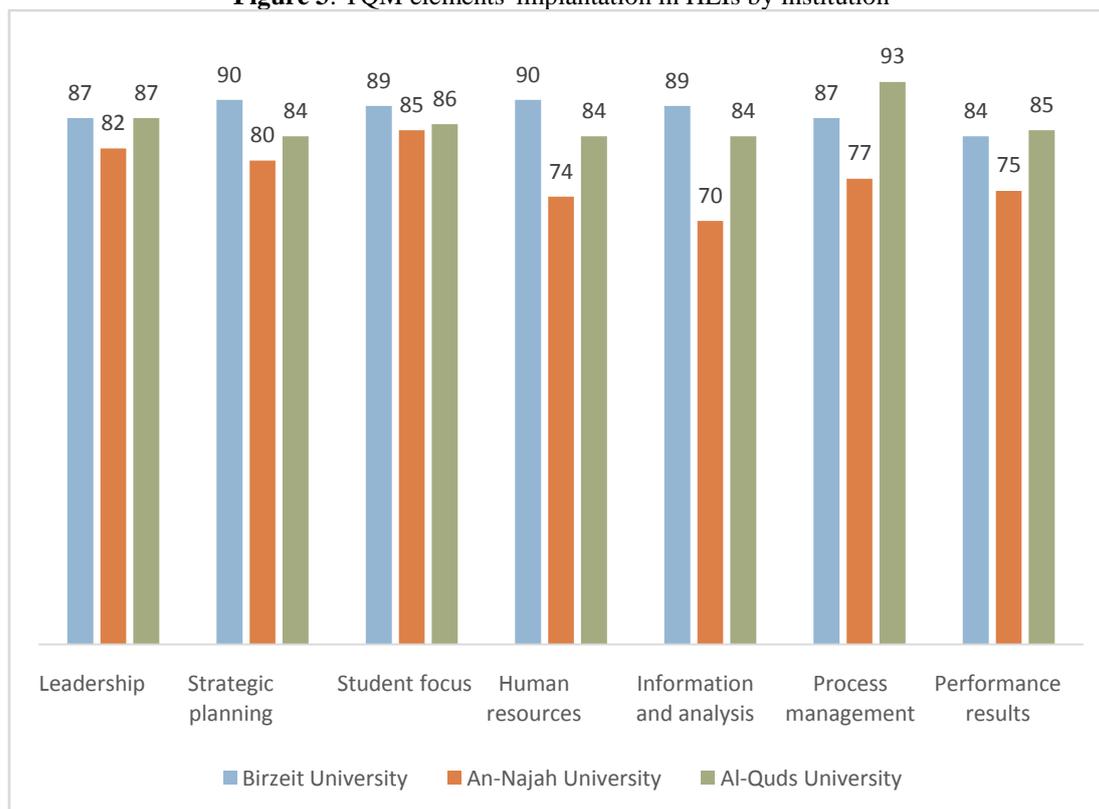


Figure 4, figure 5 show the degree of TQM implementation in Education Faculty and at the 3 participating HEIs, where these two faculties have the same educational programs in the three universities. Regarding Education Faculty, the degree of leadership implementation as deans reported was the highest for Al-Quds University and the lowest for An-Najah.

Figure 4: TQM degree of implementation in Education Faculty

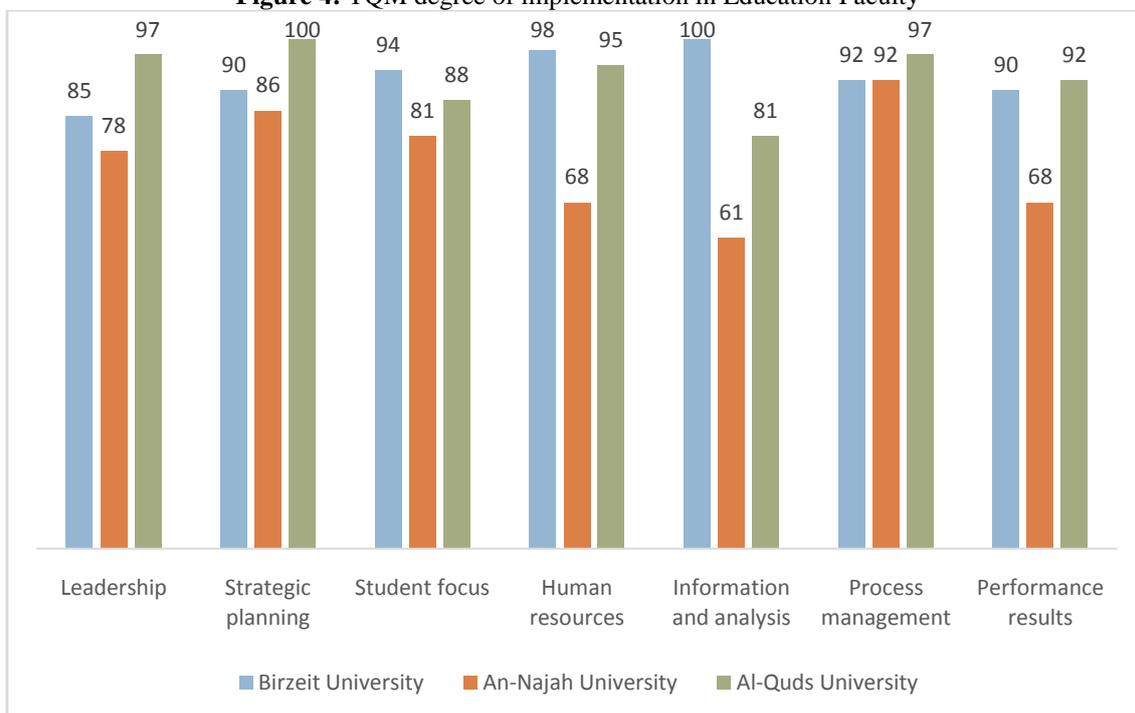
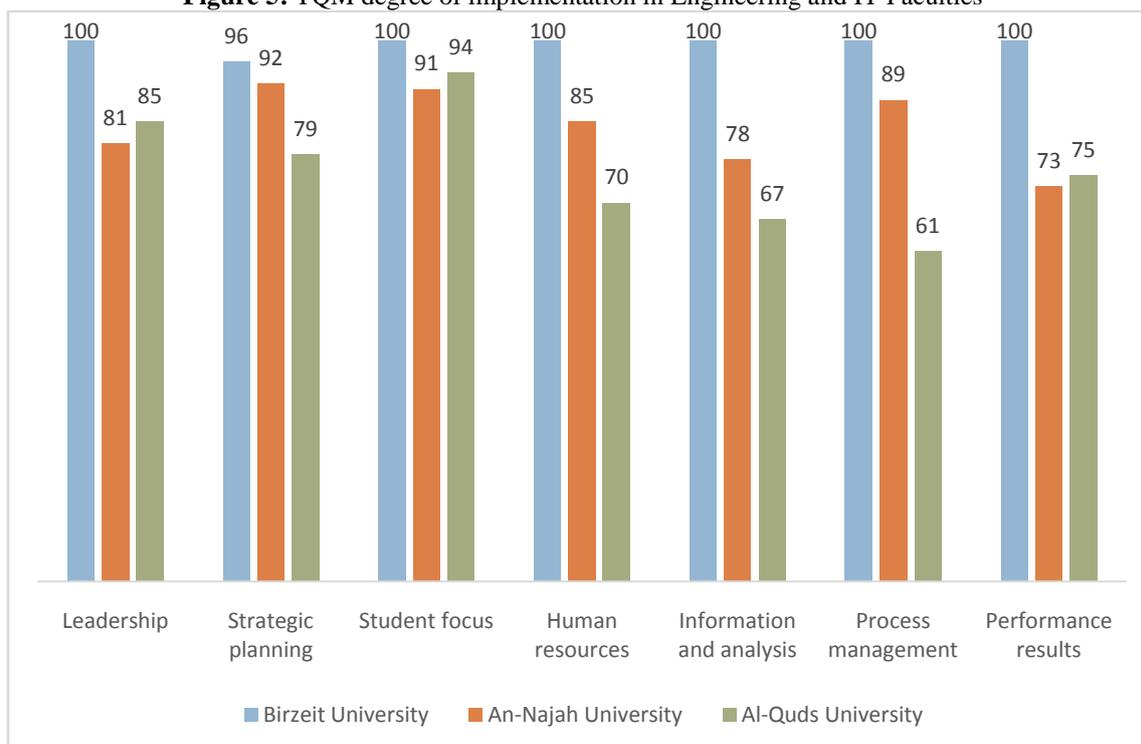


Figure 5: TQM degree of implementation in Engineering and IT Faculties



Degree of TQM implementation by factors

Looking at the following tables 4, 5,6,7,8,9,10, the degree of implementation was calculated for the 68 items of TQM factor items.

In table 3, it is clear that HEIs participating in the study implement leadership to great extent, with 90 % degree of implementation to “The top management sets the quality issues on the agenda of the managers’ meetings”, and the least degree was 82% for “The top management supports quality improvement by providing the necessary resources”.

Table 3: Leadership factor degree of implementation

Item	Degree of implementation of 4	Degree of implementation of 100
The top management of the HEI (higher education institution) Gives priority to processes and service quality rather than to their quantity.	3.39	85
The top management actively participates in quality improvement efforts and communicate its commitment to quality to teaching staff and employees.	3.55	89
The top management sets the quality issues on the agenda of the managers’ meetings.	3.58	90
The top management motivates and gives the authority to teaching staff and employees to manage and solve quality problems.	3.42	86
The top management supports quality improvement by providing the necessary resources.	3.28	82
The university anticipates public concerns about its services.	3.47	87
The university participates enthusiastically in social or community services.	3.36	84
Top management actively seeks feedback.	3.35	84

Table 4: Strategic planning

Item	Degree of implementation of 4	Degree of implementation of 100
The quality policy is taken into consideration in strategic planning.	3.42	86
Strategic objectives and quality goals are clearly defined.	3.39	85
Strategic objectives and plans are effectively communicated to all teaching staff and employees.	3.36	84
In defining our strategic objectives, we are fully concerned about the various potential external factors such as technological changes, economic environment and market needs.	3.39	85
In defining our Institution’s strategic objectives, we are fully concerned about the various potential internal factors such as availability of financial and human resources.	3.36	84
The institution sets quality objectives for managers, teaching staff and employees.	3.44	86
Every staff member in our university is aware of our strategic objectives and action plan to be accomplished.	3.18	80
The requirements and expectations of the students are taken into consideration in planning the processes and the services.	3.48	87
The quality objectives are being set based on the needs and requirements of the students and market.	3.33	83
The process outputs are compared with the objectives of the institution.	3.37	84
We integrate public responsibility into performance improvement effort.	3.25	81
We lead the efforts to improve community services.	3.36	84

In table 4, it is clear that HEIs participating in the study implemented strategic planning to a great extent, with 87 % degree of implementation to “The requirements and expectations of the students are taken into consideration in planning the processes and the services.”, and the least degree was 80% for “Every staff member in our university is aware of our strategic objectives and action plan to be accomplished”.

Table 5: Student focus

Item	Degree of implementation of 4	Degree of implementation of 100
The university identifies its target students well.	3.52	88
Students’ complaints, satisfaction and proposals for quality improvement are determined and analyzed.	3.42	86
We as a faculty have a well-established communication channel with our students.	3.55	89
The senior managers are in close contact with the students and have close relationships with them.	3.59	90
The needs, requirements, desires and expectations of the students are recorded and analyzed.	3.42	86
The teaching staff are in close contact with the students and have close relationships with them	3.47	87

Students are encouraged to submit complaints and proposals for quality improvement.	3.28	82
The objectives of the institution overcome students' expectations.	3.35	84

In table 5, it is clear that HEIs participating in the study implemented student focus to a great extent, with 90 % degree of implementation to “The senior managers are in close contact with the students and have close relationships with them”, and the least degree was 82% for “Students are encouraged to submit complaints and proposals for quality improvement”.

Table 6: Human resources focus

Item	Degree of implementation of 4	Degree of implementation of 100
The university promotes innovation by empowering its teaching staff, employees and students.	3.42	86
The university has an effective staff performance appraisal system.	3.36	84
The university encourages teamwork and team spirit.	3.42	86
Our management motivates teaching staff and employees and fully develops their potential.	3.15	79
The university trains its teaching staff and employees in quality concepts.	3.15	79
The university provides training and development for its teaching staff and employees.	3.30	83
Teaching staff and employees participate in the decision-making process and in setting quality objectives.	3.31	83
Teaching staff and employees who make significant efforts for quality improvement are awarded.	3.30	83
The university provides a safe and healthy work environment.	3.28	82
The university provides teaching staff with students-focused training	3.31	83

In table 6, it is clear that HEIs participating in the study implemented human resources focus to a great extent in the most items, with 86 % degree of implementation to “The University promotes innovation by empowering its teaching staff, employees and students, and the least degree was 79% for both “Our management motivates teaching staff and employees and fully develops their potential”, and “The university trains its teaching staff and employees in quality concepts”.

Table 7: Information and analysis

Item	Degree of implementation of 4	Degree of implementation of 100
The university has an effective system to assess its quality performance.	3.27	82
The university has a clear, comprehensive performance management system.	3.24	81
All teaching staff and employees understand the indicators linked to their performance well and take them seriously.	3.25	81
The university adjusts its performance according to the changes in the environment.	3.13	78
Senior management adjusts the university's policy and strategy by analyzing information and facts.	3.41	85
Quality data are taken into consideration from top management in the decision-making process.	3.30	83
Quality data are taken into consideration by the teaching staff and employees during their daily tasks.	3.21	80
The teaching staff and employees are educated in quality management and problem-solving techniques.	3.06	77
Resources are provided for educational purposes.	3.36	84

In table 7, it is clear that HEIs participating in the study implemented information and analysis to a great extent in the most items, with 85% degree of implementation to “Senior management adjusts the university's policy and strategy by analyzing information and facts”, and the least degree was 77% for “The teaching staff and employees are educated in quality management and problem-solving techniques”.

Table 8: Process management

Item	Degree of implementation of 4	Degree of implementation of 100
In designing processes, factors like quality, costs, and service are considered.	3.64	91
Before applying new procedures, the university conducts comprehensive tests to assure quality.	3.24	81
The critical quality processes are determined and their performance is evaluated.	3.24	81

Has processes and teaching methods that are designed to meet all the service quality requirements.	3.42	86
The university continuously improves its teaching methods and processes to enhance the overall service quality development.	3.41	85
Process improvement initiatives are shared among departments.	2.97	74
We evaluate services on the basis of effectiveness, including appropriateness and risk.	3.33	83
Quality of education services are contingent according to students' need.	3.27	82
Has performance measurement system that evaluates its quality improvement processes.	3.24	81

In table 8, it is clear that HEIs participating in the study implemented process management to a great extent in the most items, with 91% degree of implementation to “In designing processes factors like quality, costs, and service are considered.” and the least degree was 74% for “Process improvement initiatives are shared among departments”.

Table 9: Performance results

Item	Degree of implementation of 4	Degree of implementation of 100
Students are satisfied with our education services.	3.45	86
Our university is able to meet its financial obligations.	2.79	70
Our system of remuneration and benefits is satisfactory.	3.22	81
In general, the teaching staff and employees are satisfied with their respective department.	3.58	90
Our education services are expanding.	3.32	83
Overall, service quality is improving steadily.	3.45	86
Students' evaluations of our performance have been improving.	3.34	84
In our faculty, the number of teaching staff members who have been awarded PhD degree is sufficient.	3.06	77
In our faculty, the number of teaching staff members who have been awarded master degree is sufficient.	3.31	83
In our faculty, the number of teaching assistants is sufficient.	3.12	78
In our faculty, the number of administrative employees is sufficient.	3.27	82
In our faculty, the number of technicians is sufficient.	3.27	82

In table 9, it is clear that HEIs participating in the study implemented performance results to a great extent in the most items, with 90% degree of implementation to “In general, the teaching staff and employees are satisfied with their respective department”, and the least degree was 70% for “Our university is able to meet its financial obligations”.

Relation between TQM implementation and performance

Table 10:correlation between TQM factors and performance results

TQM factor	Correlation
Leadership	.443 ^{**}
Strategic planning	.571 ^{**}
Student focus	.604 ^{**}
Human resources	.731 ^{**}
Information and analysis	.747 ^{**}
Process management	.396 [*]

As seen in table 10, the correlation coefficients between TQM factors degree of implementation and performance results were computed, these correlation coefficients measure the strength and direction of a linear relationship between the degree of implementation of six of TQM factor and performance results.

The correlation between performance results and the six TQM factors was positive, that is increasing in TQM factors affects performance positively.

Looking at correlation coefficient values in the table, a high correlation exists between information and analysis implementation and performance (0.747) that is a strong positive linear relationship exists, a strong positive relationship also exists between performance and each of human resources factor implementation and student focus (0.731, 0.604 respectively).

A moderate positive relationship exists between performance and each of strategic planning, and leadership, and finally a weak positive relationship exists between performance and process management.

Table 101:correlation between TQM factors and performance results by University

TQM factor	Birzeit	Al-Quds	An-Najah
Leadership	.679	.304	.457
Strategic planning	.311	.641	.480
Student focus	.752	.463	.849
Human resources	.928	.653	.771
Information and analysis	.810	.347	.975
Process management	.716	.443	.259

When comparing the implementation of (TQM) factors level in three Universities , the degree of TQM implementation was the highest at Birzeit University with (88 %) and it has a strong relationship with factors of (information and analysis ,human resources) and weak relationship with strategic planning to the Birzeit University performance, and Al-Quds University in the second level with (85 %), and it has a strong relationship with factors of (information and analysis , student focus) and weak relationship with factors of (process management) to Al-Quds University performance, and An-Najah University with (77 %) in the lowest level and it has a strong relationship with factors of (Human resources and strategic planning) and weak relationship with factors of (leadership, information and analysis) to Al-Quds University performance.

Appendix

Dear Dr.

The following survey will be used for the research purposes, thank you for taking part in this research efforts, this study is aimed to assess the implementation of (TQM) total quality management in Palestinian higher academic institutions (Birzeit University, An-Najah National University, Al-Quds University) and its relationship to these institutions performance by using the MBNQA (Malcolm Bridge National Quality Award frame work).

A. Gender

1. Male
2. Female

B. Please put a circle on the name of your University?

1. Birzeit University
2. An-Najah National University
3. Al-Quds University

C. Please write the name of your faculty below?

Do you Strongly Agree, or agree, or Strongly disagree, or disagree for the following statements?

No	Item	Strongly Agree	Agree	Strongly Disagree	Disagree
Q .1	Leadership				
Q 1.1	The top management of the HEI(higher education institution) Gives priority to processes and service quality rather than to their quantity.				
Q 1.2	The top management actively participates in quality improvement efforts and communicate its commitment to quality to teaching staff and employees.				
Q 1.3	The top management sets the quality issues on the agenda of the managers' meetings.				
Q 1.4	The top management motivates and gives the authority to teaching staff and employees to manage and solve quality problems.				
Q 1.5	The top management supports quality improvement by providing the necessary resources.				
Q 1.6	The university anticipates public concerns about its services.				
Q 1.7	The university participates enthusiastically in social or community services.				
Q 1.8	top management actively seeks				

	feedback.				
Q. 2	Strategic Planning				
Q. 2.1	The quality policy is taken into consideration in strategic planning.				
Q. 2.2	Strategic objectives, and quality goals are clearly defined.				
Q. 2.3	Strategic objectives and plans are effectively communicated to all teaching staff and employees.				
Q. 2.4	In defining our strategic objectives, we are fully concerned about the various potential external factors such as technological changes, economic environment and market needs.				
Q. 2.5	In defining our institution's strategic objectives, we are fully concerned about the various potential internal factors such as availability of financial and human resources.				
Q. 2.6	The institution sets quality objectives for managers, teaching staff and employees.				
Q. 2.7	Every staff member in our university is aware of our strategic objectives and action plan to be accomplished.				
Q. 2.8	The requirements and expectations of the students are taken into consideration in planning the processes and the services.				
Q. 2.9	The quality objectives are being set based on the needs and requirements of the students and market.				
Q. 2.10	The process outputs are compared with the objectives of the institution.				
Q. 2.11	We integrate public responsibility into performance improvement effort.				
Q. 2.12	We lead the efforts to improve community services.				
Q. 3	Student-Focus				
Q. 3.1	The university identifies its target students well.				
Q. 3.2	Students' complaints, satisfaction and proposals for quality improvement are determined and analyzed.				
Q. 3.3	We as afaculty have a well-established communication channel with our students.				
Q. 3.4	The senior managers are in close contact with the students and have close relationships with them.				
Q. 3.5	The needs, requirements, desires and expectations of the students are recorded and analyzed.				
Q. 3.6	The teaching staff are in close contact with the students and have close relationships with them				
Q. 3.7	Students are encouraged to submit complaints and proposals for quality improvement.				
Q. 3.8	The objectives of the institution overcome students' expectations.				
Q. 4	Human Resource Focus				
Q. 4.1	The university promotes innovation by empowering its teaching staff, employees and students.				
Q. 4.2	The university has an effective staff				

	performance appraisal system.				
Q. 4.3	The university encourages teamwork and team spirit.				
Q. 4.4	Our management motivates teaching staff and employees and fully develops their potential.				
Q. 4.5	The university trains its teaching staff and employees in quality concepts.				
Q. 4.6	The university provides training and development for its teaching staff and employees.				
Q. 4.7	Teaching staff and employees participate in the decision-making process and in setting quality objectives.				
Q. 4.8	Teaching staff and employees who make significant efforts for quality improvement are awarded.				
Q. 4.9	The university provides a safe and healthy work environment.				
Q. 4.10	The university provides teaching staff with students-focused training				
Q. 5	Information and analysis				
Q. 5.1	The university has an effective system to assess its quality performance.				
Q. 5.2	The university has a clear, comprehensive performance management system.				
Q. 5.3	All teaching staff and employees understand the indicators linked to their performance well and take them seriously.				
Q. 5.4	The university adjusts its performance according to the changes in the environment.				
Q. 5.5	Senior management adjusts the university's policy and strategy by analyzing information and facts.				
Q. 5.6	Quality data are taken into consideration from top management in the decision-making process.				
Q. 5.7	Quality data are taken into consideration by the teaching staff and employees during their daily tasks.				
Q. 5.8	The teaching staff and employees are educated in quality management and problem solving techniques.				
Q. 5.9	Resources are provided for educational purposes.				
Q. 6	Process management				
Q. 6.1	In designing processes factors like quality, costs, and service are considered.				
Q. 6.2	Before applying new procedures, the university conducts comprehensive tests to assure quality.				
Q. 6.3	The critical quality processes are determined and their performance is evaluated.				
Q. 6.4	Has processes and teaching methods that are designed to meet all the service quality requirements.				
Q. 6.5	The university continuously improves its teaching methods and processes to enhance the overall service quality development.				
Q. 6.6	Process improvement initiatives are shared among departments.				
Q. 6.7	We evaluate services on the basis of effectiveness, including				

	appropriateness and risk.				
Q. 6.8	Quality of education services are contingent according to students' need.				
Q. 6.9	Has performance measurement system that evaluates its quality improvement processes.				
Q. 7	Performance results				
Q. 7.1	Students are satisfied with our education services.				
Q. 7.2	Our university is able to meet its financial obligations.				
Q. 7.3	Our system of remuneration and benefits is satisfactory.				
Q. 7.4	In general the teaching staff and employees are satisfied with their respective department.				
Q. 7.5	Our education services are expanding.				
Q. 7.6	Overall service quality is improving steadily.				
Q. 7.7	Students' evaluations of our performance have been improving.				
Q. 7.8	In our faculty the number of teaching staff members who have been awarded PhD degree is sufficient.				
Q. 7.9	In our faculty the number of teaching staff members who have been awarded master degree is sufficient.				
Q. 7.10	In our faculty the number of teaching assistants is sufficient.				
Q. 7.11	In our faculty the number of administrative employees is sufficient.				
Q. 7.12	In our faculty the number of technicians is sufficient.				

Thank you

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