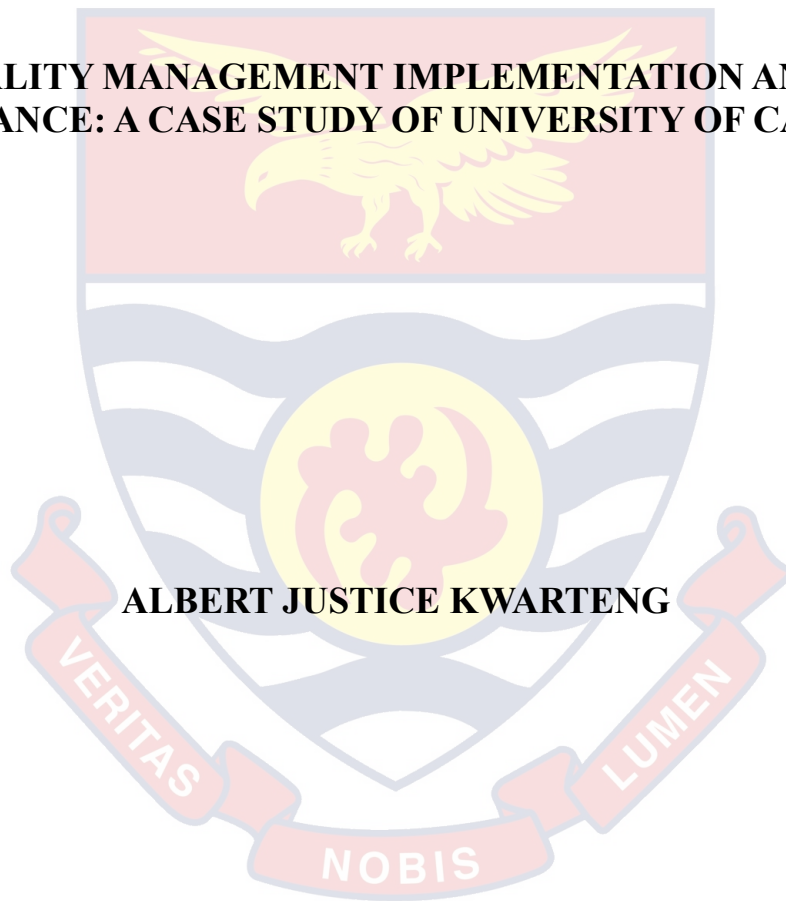


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**TOTAL QUALITY MANAGEMENT IMPLEMENTATION AND SERVICE
PERFORMANCE: A CASE STUDY OF UNIVERSITY OF CAPE COAST**



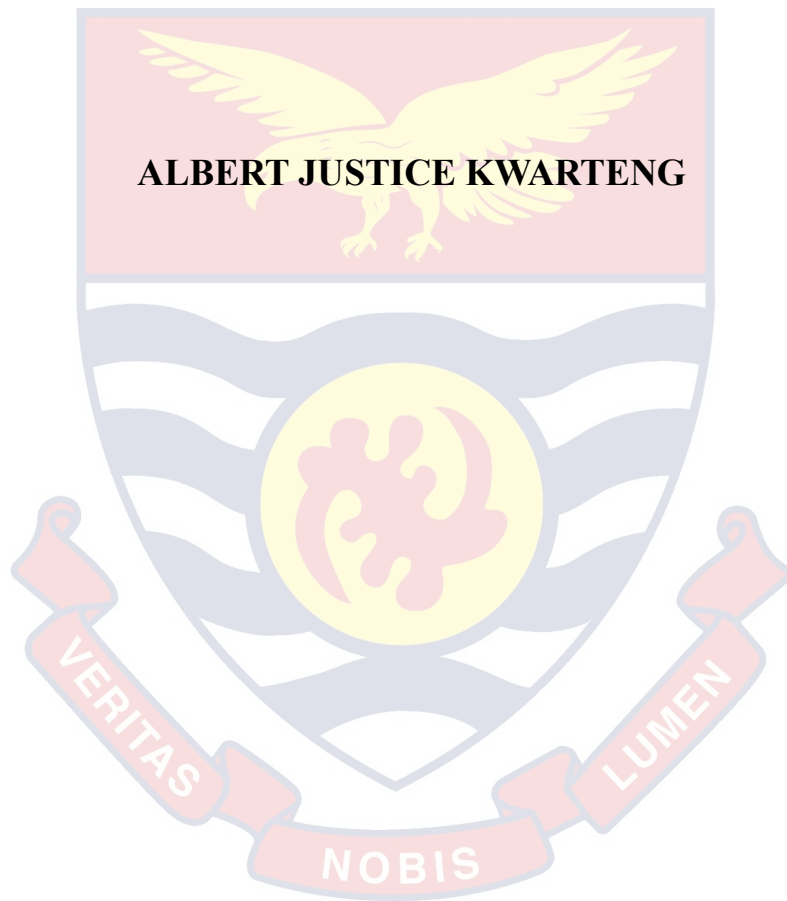
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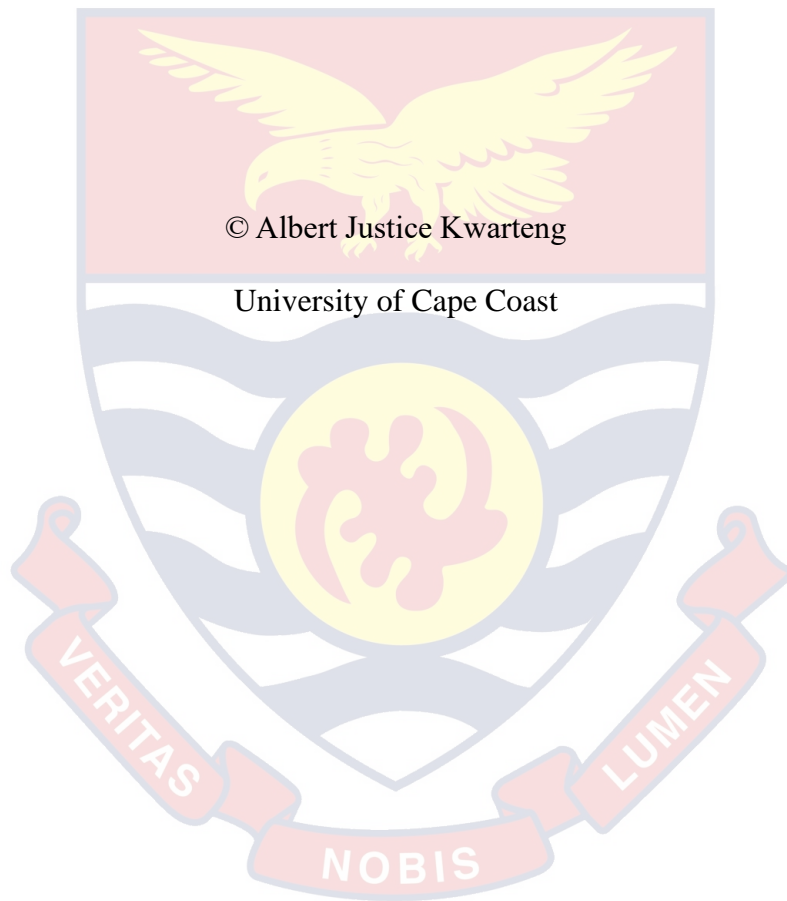
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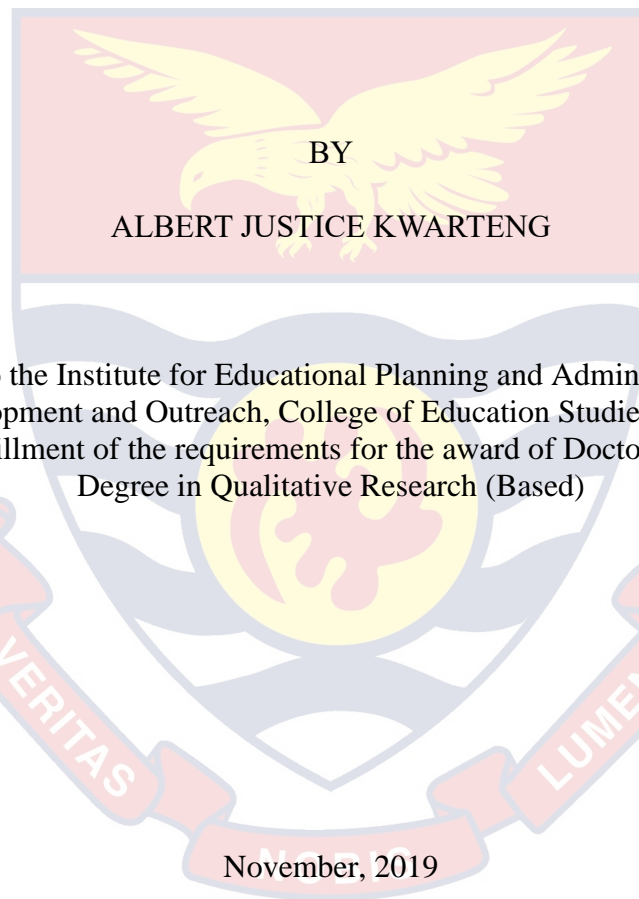
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UNIVERSITY OF CAPE COAST

TOTAL QUALITY MANAGEMENT IMPLEMENTATION AND SERVICE PERFORMANCE:
A CASE STUDY OF UNIVERSITY OF CAPE COAST



DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature Date

Name:

Supervisors' Declaration

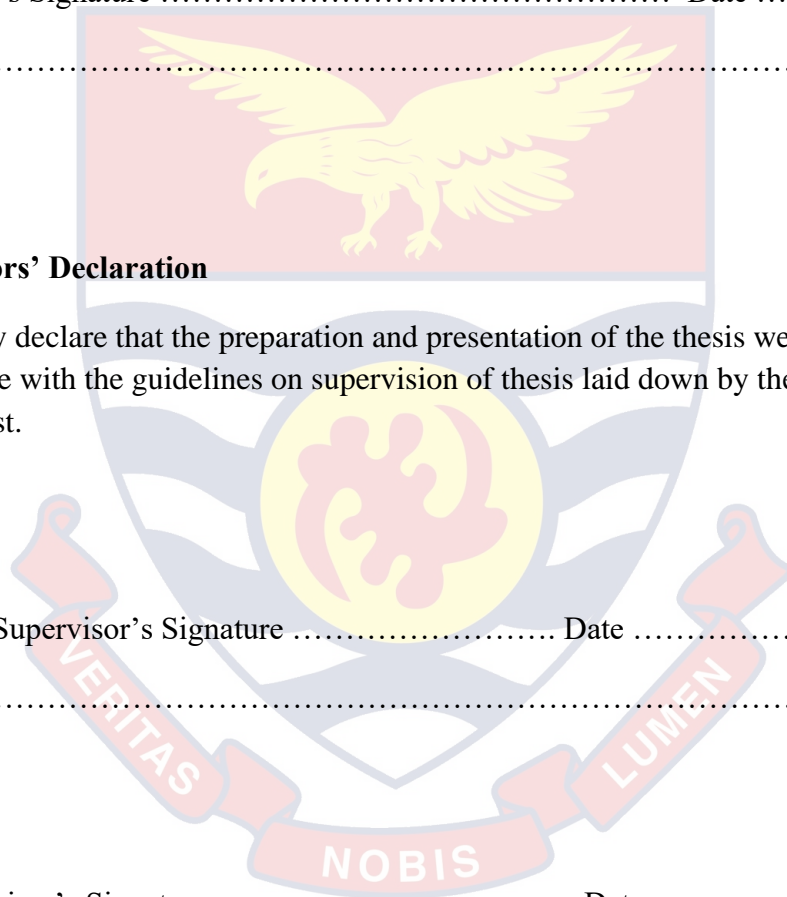
We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature Date

Name:

Co-Supervisor's Signature Date

Name:



ABSTRACT

This study evaluated Total Quality Management (TQM) implementation at the University of Cape Coast, Ghana, as a case study with valid and reliable instruments developed. The embedded case study design was used due to the practicality of the study as it involves gathering respondents' understanding, experiences, opinions, and attitudes. The study utilised different groups of participants who differ in the variable of interest but share common characteristics such as socioeconomic status, educational background, and ethnicity. Multisampling procedures were used in this study including purposive, stratified and probability proportional to size. Two top and five middle levels management had face-to-face in-depth interview. The quantitative data was solicited from 364 external and 267 internal customers who responded to questionnaires on service quality dimensions and TQM principles being practised in the University respectively. It was found out that, both the top and middle management of the university acknowledge the quality concept and TQM philosophy. However, the management admitted to using the piecemeal approach to TQM implementation with identified barriers. Some of the internal customer respondents indicated levels of TQM implementation as moderate, while other groups also see it as below average. This suggested minimal awareness of quality culture among the institutional stakeholders. The external customer subgroups perceived differences among their expectations and perceptions of quality dimensions which exposes the existence of service gaps. It is imperative therefore, for the university to create awareness and education for all stakeholders on quality concepts and TQM approach. The university could develop a strategy for operating TQM by paying more attention to the identification, analysis, and adoption of an appropriate institutional culture that suits TQM implementation.

KEY WORDS

Continuous Improvement and Customer Satisfaction

Higher Education Institutional Customers

Quality Assurance System

Quality Management System

Service Quality Dimensions

Total Quality Management Principles



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DEDICATION

To my children



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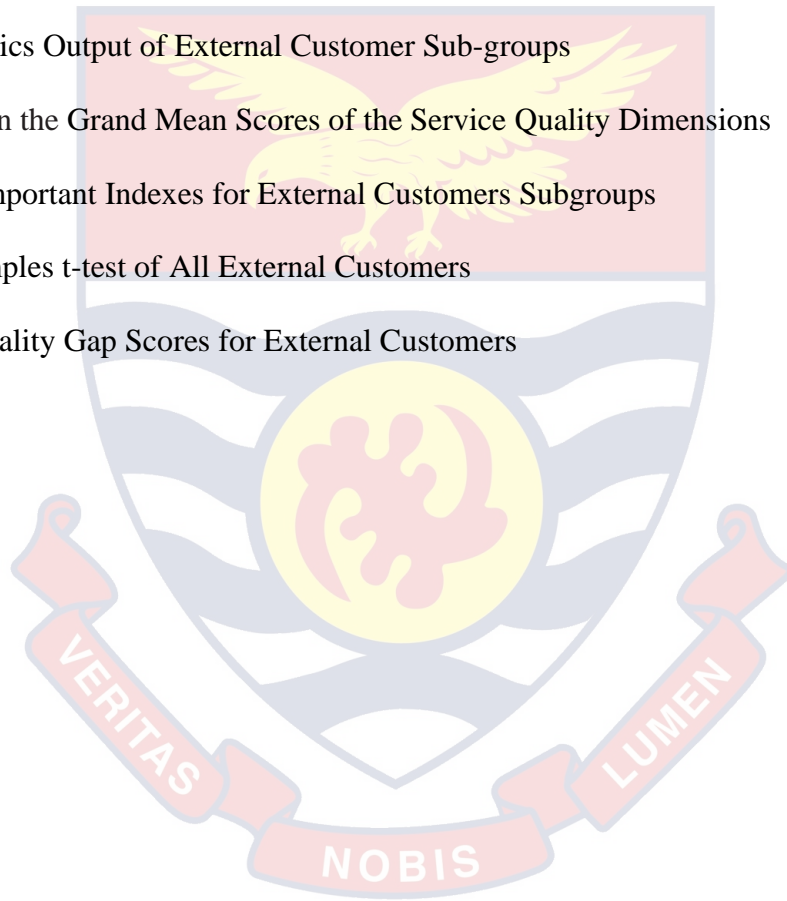
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LIST OF ACRONYMS



BM	Benchmarking
CF	Customer Focus
CII	Continuous Improvement and Innovation
DAPQA	Directorate of Academic Planning and Quality Assurance
HEIs	Higher Education Institutions
HRM	Human Resource Management
ICS	Internal Customer (Staff) Satisfaction
KNUST	Kwame Nkrumah University of Science and Technology
MIC	Management Information and Communication System
NAB	National Accreditations Board
PDC(S) A	Plan, Do, Check or Study and Act
QA	Quality Assurance
QAHEIs	Quality Assurance in Higher Education Institutions
QC	Quality Control
SQ	Service Quality Culture
SR	Social Responsibility
TMV	Top-Management Commitment and Visionary Leadership
TQC	Total Quality Control
TQM	Total Quality Management
TS	Tangibles of service (Servicescapes)
TSM	Design Quality and Process Management (Technical System)
UCC	University of Cape Coast
UG	University of Ghana

CHAPTER ONE

INTRODUCTION

This chapter depicts an overview of the research study. It gives a background to the study, information on Total Quality Management (TQM) philosophy, and why it is being practiced in the manufacturing and service industries. It also highlights the relevance of TQM in the context of Higher Education Institutions (HEIs), specifically, in a case study of University of Cape Coast in developing country, Ghana.

Background to the Study

The last three decades have witnessed tremendous changes in the business environment, with quality consistently being considered as one of management's major concern and a prerequisite for sustenance and growth in organisations (Dale & Plunkett, 2017; Sureshchander, Rajendran, & Anatharaman, 2002). Many organisations are making good efforts to achieve quality products and services that will meet or exceed their customers' expectations. As a result of this, organisations continue to search for the best approaches to manage resources and production systems that will ensure the transformation of inputs into quality output (Dale, Bamford, & Van der Wiele, 2016; Mang'unyi, & Govender, 2014).

A large body of literature has been developed concerning quality approaches to ensure service quality in educational settings, namely; the Quality Inspection, Quality Control (QC), Quality Assurance (QA) and Total Quality Management (TQM), as shown in Figure 1 (Dale *et al.*, 2016; Harvey, 2012; Sallis, 2014).

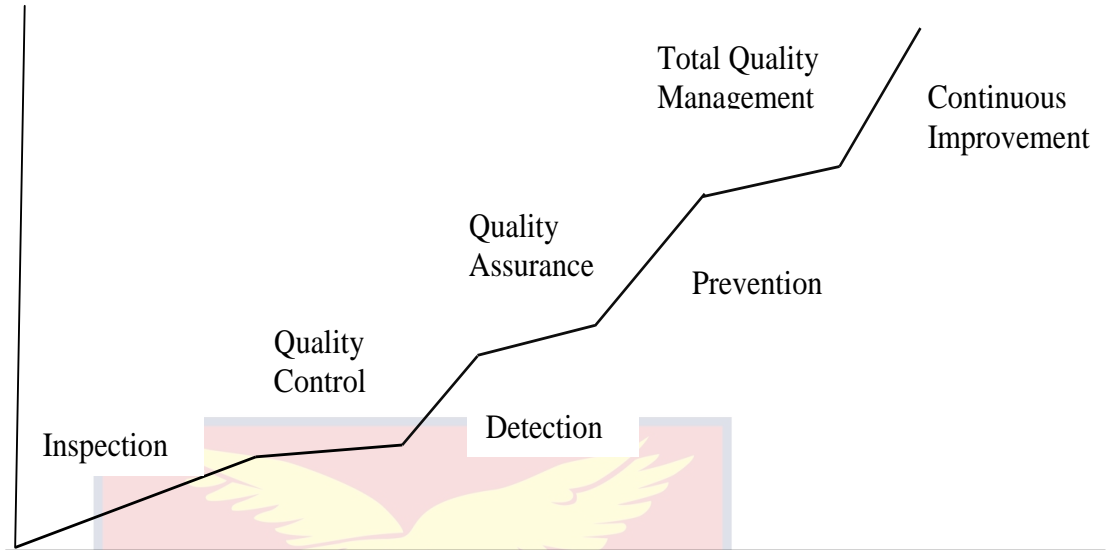


Figure 1: The Hierarchy of Quality Approach; Source: Sallis, 2014

TQM is the final level of the institution-wide continuous improvement and it aims at working towards the satisfaction of customers. At this level, the activities involve all units; aims for continuous improvement; concerns processes, service, and product; the responsibilities lie with all workers and delivery is through teamwork (Dale *et al.*, 2016; Dale & Plunkett, 2017). Improving upon the existing system and procedure (continuous improvement) is the necessary practice after putting a mechanism to monitor and evaluate (quality assurance), hence quality improvement and enhancement. Improvement of a programme makes the existing programme better, whereas enhancement of a programme would mean to add something to the existing programme to make it better (Harvey, 2012).

The TQM concept discusses not only the quality aspects but also those to be involved to achieve quality. The “total”, implies the inclusion of all human aspects, management, and staff of the institution. It is, therefore, necessary to look at the principles of TQM referred to as the qualitative aspects of TQM philosophy. TQM brings on board the transformational quality which involves

continuous improvement and institutional transformation in addition to the quality assurance system (Dale *et al.*, 2016). Transformational quality focuses on the softer and more intangible aspects of quality described as TQM principles (Lenka, Suar, & Mohapatra, 2010). The transformational quality which has more to do with continuous improvement and institutional transformation is achieved through the exercise of management (Laohavichien, Fredendall, & Cantrell, 2009; Lundström, Barry, Henry, Rosen, & Stenevi, 2012).

In most organisations, management establishes the vision that translates into customer service and builds the structures and organisational culture that empower staff to deliver quality service (Sallis, 2014; Van der Vleuten *et al.*, 2012). Whereas the procedural concept is about proving, the transformational quality is about improving. The transformative view of quality is that quality improvement is the result of the change (transformation) for better processes and systems (Elassy, 2015). Johnson (1993, p. 91) defines the system as “the nature of functions or activities within an organisation that work together to achieve a shared aim”. Systems theory is defined by Sahney, Banwet, and Karunes (2004) as being a way of thinking or understanding any dynamic process which comprises three components namely; the inputs, processes, and outputs.

The Higher Education Institutions (HEIs) all over the world have seen a massive increase in adopting Total Quality Management (TQM) practices (Koch, 2003). However, from the existing literature, the TQM systems have been well known in the developed world in the context of HEIs, while the concept is little known in developing nations (Ahmed & Ali, 2016). Over the last two decades, the

core ideas of Total Quality Management (TQM) set forth by quality experts including: (Crosby, 1979; Deming, 1982; Feigenbaum, 1983; Ishikawa, 1985; Juran, 1988) has gained significant acceptance in the U.S.A, United Kingdom and other western countries (Dale, 2015). In those periods, TQM has become a social movement and since then, the TQM approaches have spread from its manufacturing industrial origins to health care organizations, banking institutions, insurance, and non-profit organisations, as well as educational institutions. For example, HEIs in the USA have been influenced due to the benefits that accrue from TQM implementation by many manufacturing and other service industries. They were influenced by the critical state of education in the 1980s in terms of student grades, funding and complaints from employers and parents.

Many researchers have examined how TQM principles and core concepts can be measured to provide a means of assessing the quality of education institutions on various aspects of their internal processes. It has been revealed that the measurement of TQM principles has a relationship with institutional service performance (Gallear, Aldaweesh, & Al-Karaghoul, 2012; Talib, Rahman & Qureshi, 2013). How management implements TQM principles affects the institution's service delivery. In order to understand their customers' needs, it is imperative to understand the quality attributes embraced by the customers by listening to their opinion. Owlia and Aspinwall (1996, p. 12) pointed out that, "in order to measure quality performance, and consequently improve quality, it is important to find out the quality dimensions concerning how TQM is being practiced in an institution".

During the past decade, higher education institutions worldwide have undergone major changes as a result of public scrutiny directed at its contribution to national economic growth (Gumport, 2000; Marginson, 2000). These changes derive from several factors including; globalization, which has increased the mobility of students and faculty members both within and between countries (Osei, 2004). Secondly, the massification and diversification of higher education have led to accelerated development of new programmes, while budgetary cutbacks of governments have increased competition among institutions of higher education. The universities are therefore subject to growing demands for transparency and are being held accountable for the quality of education they provide.

In recent times, concerns have been raised at the job market in Ghana about the quality of the graduates of the university education system (Sawyer, 2004). Customer expectations include the provision of quality products with the training and skills that are required to drive the economy forward. There have been increased needs to develop criteria for the evaluation of quality management systems of the University with respect to the quality of their products and provisions (Becket & Brooks, 2007; Diamond & Morlino, 2005).

The requirements for a model that allows university education to expand rapidly in the developing world are that it should be readily accessible (wide access), affordable (low cost), and academically credible (high quality). The aim of wide access, low cost, and high quality could only be achieved through the adaptation of TQM principles. The quality management system, therefore, should

be the priority of the public universities if they want to stay in the global competitive market of higher education institutions of the world.

University of Cape Coast as a Case Study Institution

The University of Cape Coast (UCC) among the public universities in Ghana, was purposively selected as a case study. The University of Cape Coast, a public University in Ghana, is located in the old administrative capital of the Gold Coast, Cape Coast, found on Accra-Takoradi road. The University of Cape Coast which was established in 1962, is the third oldest public university in Ghana after, University of Ghana (UG), 1948, and Kwame Nkrumah University of Science and Technology (KNUST), 1952.

The rationale for choosing UCC was because it was first among public universities in Ghana to establish the academic Quality Assurance Unit in 2001, as part of the quality management system of ensuring the quality of service (National Accreditation Board [NAB], 2011). After five years, the Quality Assurance Unit of UCC was upgraded to a Directorate status, with the designation “Directorate of Academic Planning and Quality Assurance (DAPQA)” (University of Cape Coast [UCC], Quality Policy, 2010). The Directorate has since been charged with the responsibility to spearhead the institution-wide quality management (Total Quality Management approach). The quality assurance system is to lead to the maintenance and continuous improvement of education service being provided and the transformational quality of the entire university which is the Total Quality Management (TQM) philosophy.

It is worth noting that, some TQM tenets identify UCC as TQM institutions and notably among them include the follows:

- the university has developed a quality management policy since 2010 (UCC, quality policy, 2010);
- involves its institutional customers like students, the primary customers, and the local communities in the management and stakeholders consultative meetings;
- conduct alumni and employers studies (tracer studies) periodically;
- having human resource policies that guide recruitment, staff training, and development;
- having academic Affairs policy on admissions and graduations;
- the corporate strategic plan that portrays the vision and mission, as well as the key thrust of the university and
- the establishment of Directorate for Academic Planning and Quality Assurance (DAPQA) to facilitate and promote the quality management system.

The University was chosen because it had been in existence for over 50 years and received numerous supports from the central government of Ghana and other donor countries of which it owned them accountable. The university institutional structure comprises of five Colleges, 15 Faculties and Schools, and 66 Departments, as well as various supporting units.

The total student population in 19 public tertiary education institutions in Ghana excluding the polytechnics on its three operating systems namely; the

conventional (150,009), sandwich (4,289), and distance learning (65,444) was 219,742 as of 2014/2015 academic year (Ametepee, & Anastasiou, 2015). The University of Cape Coast in all enrolled more than 65,000 of the said total students' population in Ghana (Mundy & Verger, 2015). The University offers many disciplines with increase accessibility to many outlets such as distance education and sandwich programmes.

Then also, the University was chosen because of its extensive experience (over 18 years) for operating Total Quality Management initiatives. It was therefore seen as a self-assessment tool and a formal business strategy to improve upon the overall service quality processes.

Statement of the Problem

There is the paucity of empirical studies related to the total evaluation of TQM implementation in university institutions outside developed countries (Joseph, Yakhou, & Stone, 2005; Pham & Starkey, 2016; Sila & Ebrahimpour, 2002). What is referred to as quality in the University of Cape Coast (UCC) has acquired an ever-clearer shape and the university is implementing Quality Management System (QMS) vigorously. Over eighteen years, (2001-2019) of ensuring quality, the University is managing quality through the Total Quality Management (TQM) approach. TQM has been the latest quality approach since the 1980s, however, some institutions even practice TQM with a feeble understanding of it (Dale *et al.*, 2016; Sallis, 2014; Venkatraman, 2007).

It is imperative therefore to have a total evaluation of TQM implementation at UCC as a case study, a university institution that has practised

TQM for a longer period. The study literature revealed that there have been successes and failure stories about TQM institutions and all depend mostly on the implementation strategies put in place (Ahmed & Ali, 2016; Sallis, 2014). The total evaluation consists of three distinct but related assessments of the TQM institution. First is the TQM implementation itself, considering the institutional management awareness (knowledge and understand) of the TQM philosophy, which in turn informed the implementation strategy being adapted to operate. The operating system should be in line with the TQM principles laid down by the quality experts. The second assessment concerned on what has been the transformational change in university affairs (known as the process criteria). The third part is on how does the TQM implementation ensures that the final consumers (external customers) expectations are met. The existing gap is the unavailability of valid and reliable research instruments and reliable data for measuring the status of TQM implementation in the University of Cape Coast, for over 18 years in the quality management system.

Purpose of the Study

The overarching purpose of the study was to have an evaluation of the Total Quality Management (TQM) implementation at the University of Cape Coast. It comprised three distinct but related assessments, namely: the TQM applications, explorations of the effectiveness of TQM implementation on the process criteria, and the outcome criteria

Research Questions

Specifically, the study was guided by the following research questions:

1. How does the institutional management acknowledged the Total Quality Management (TQM) as an approach to Quality Management system in the University of Cape Coast (UCC)?
2. What are the implementation barriers of TQM as practised at the University of Cape Coast (UCC)?
3. To what extent do the internal customers perceive the implementation of the principles of TQM?
4. What are the external customers' perceptions of service quality in relation to TQM implementation at UCC?

Hypotheses

The following statistical hypotheses were tested:

H₀1: There are no statistically significant differences in perceptions among the various internal customer sub-groups on the 11 TQM principles being practiced at UCC

H₀2: There are no statistically significant differences in perceptions among the various external customer sub-groups on the 5 service quality dimensions

H₀3: There are no statistically significant differences in the levels of importance of quality dimensions expected by external customers.

H₀4: There are no statistically significant differences in the levels of satisfaction of quality dimensions experienced by external customers. Where H₀ is the Null hypothesis

Significance of the Study

This study had two major significances. First, from a theoretical perspective, the study intended to contribute to the growing body of literature on the evaluation of total quality management. Secondly, the study anticipated contributing to the conceptual management of TQM applications to University education. The current research examined the customers-related definition of quality that defines quality as customers' satisfaction.

The study further explored the relevancy of total evaluation of TQM practices in the HEIs, with the University of Cape Coast (UCC), Ghana as a case study. Even though there had been a great deal of research into the concept of quality in higher education, with recognition of quality experts' contributions, there was no worldwide consensus on how best to manage quality within higher education. This study, therefore, sought to provide a total evaluation of TQM implementation within UCC.

The evaluation highlights evidence of operationalisation of TQM practice as well as areas that need improvement within the three distinct quality assessment procedures. There is the possibility for other TQM institutions with their diverse customers, to evaluate themselves with the instruments which have been tested to be valid and reliable. The practical implications of the study would be very helpful to the case study institution, UCC to improve their service quality performance.

Delimitation

To make the research manageable, the scope of the research was restricted to the evaluation of TQM implementation and service performance with the University of Cape Coast (UCC) located in Cape Coast, Central Region of Ghana as a case study. The study was delimited to top level management (VC, Pro-VC, and Registrar); middle level management (Provosts) in charge of Colleges; the internal customers of the University and the external customers with three randomly selected sub-groups, students, employers, and alumni.

Again, This study remained focused only on the 11 TQM principles which are being referred to as the “soft” side of TQM, and five service quality dimensions based on three distinct but related assessments. (Fotopoulos & Psomas, 2009; Sureshchander *et al.*, 2002). TQM in the education context is much concerned with the behavioural aspects of management and the human factors of the institutions for quality improvement, hence the “soft” side of TQM was considered. Furthermore, the study was only on the experiences and understanding of the institutional management on TQM implementation, and customers’ perception which appraised their transformation (process criteria) and satisfaction (outcome criteria) through the TQM implementation in the University.

Limitations

The series of practical limitations that constrain the research with possible mitigation strategies adopted include the following: A major limitation on the qualitative side had to do with how to gain the complete co-operation of the

management participants to be interviewed, as well as the availability of the selected participants. One interviewee was not available within the period scheduled for the interview. Nevertheless, with the seven, I was able to have enough information to reach the saturation point.

Again, the current and the past Directors of the Directorate spearheading the University quality management system were excluded. The study was of the view that the study results weight could be affected by the position of certain respondents in the Institution. For instance, the Directors mentioned have had the most responsibilities for quality management and their views should be different from others. The results might be affected by their knowledge and they might tend to answer questions in a way that shows the university in a positive light or negative way.

Another qualitative limitation was the generalisability of the collected data from the experiences of the management since individual experiences are difficult to be generalised to a wider population. The survey instruments were based on the general opinion of the selected staff of the university and the three randomly selected subgroups of the external customers as against the census survey, which is not verifiable to some extent and hence could limit the findings of the research. The study also considered only regular students at expense of others as they have experienced all the five quality dimensions while other groups have not.

Definitions of Terms

Higher Education Institution: Higher institutions including Universities are post-secondary institutions of higher or further learning or professional studies.

Top management: It is a set of individuals at the top level of the university responsible for the strategic and institutional decisions that affect the direction, operations, and performance of the institution as a whole.

Middle management: It is a set of individuals who implement the decisions taken by the top management of the university.

Stakeholder: It refers to a person or group that has a direct or indirect stake in the university because it can affect or be affected by the institution's actions, objectives, and policies and could be classified as both internal and external

Institutional Customer: Anyone who is affected by the service or by the process used to provide the service is a customer being external or internal. The word "customer" being used in this study has the equivalent meaning as institutional clients or stakeholders used by the previous researchers, of which the terms are at times used interchangeably

Internal customer: The employee of the university who is a consumer of motivational services alone has little or no choice about where to do business and is a professional consumer of the services He or She uses, as he/she is more knowledgeable about the services provided.

External customer: An individual, a group, or institution which is the final consumer(s) of education services, typically they have a choice about where to do business, establish a relationship with the preferred institution and they are little known about the services provided.

Students: They are registered regular students who are studying in the University of Cape Coast

Employers: An employer is an organisation, institution, government entity, agency, company, professional services firm, nonprofit association, small business, store, or individual who employs or puts to work the university graduate, to become an employee or a staff member.

Lecturer: He or She is a person trained to teach in a university, do research, and actively engage in community service.

Alumni: A group of university past graduates who still have established a relationship with the institution

Administrators and support staff: They are employees of the university in administrative and technical support units. They play an auxiliary role and not engaged in teaching and learning activities.

“Hard” side TQM: They are the tools and techniques identified in Quality Management literature which include: Statistical Process Control; ISO 9000 series; Pareto Analysis; Matrix Diagram; Histograms; Tree Decision Diagram; Critical Path Analysis and Fishbone or Ishikawa Diagram.

“Soft” side TQM: The “soft” side of TQM is the principles or practices which have a relationship with human resources. “Soft side” TQM elements include top management; visionary leadership; strategic quality planning; employee management and involvement; teamwork; supplier management; customer focus; process management; continuous improvement; social responsibility; quality culture; information and analysis; knowledge and education.

Service quality dimension: This is based on essentially five factors namely: core service or service product; the human element of service delivery; systematization

of service delivery: non-human element; tangibles of service (servicescapes) and social responsibility.

Evaluation: It is the systematic examination of the extent to which an entity is capable of fulfilling specified requirements. Evaluation can identify the difference between actual performance and the goal.

Expectation: It is the needs and wants the Institutional customers developed prior to establishing a relationship with the University.

Perception: It is the interpretation the Institutional customer gives on service provision after the encounter with the University which is informed through the experiences gained.

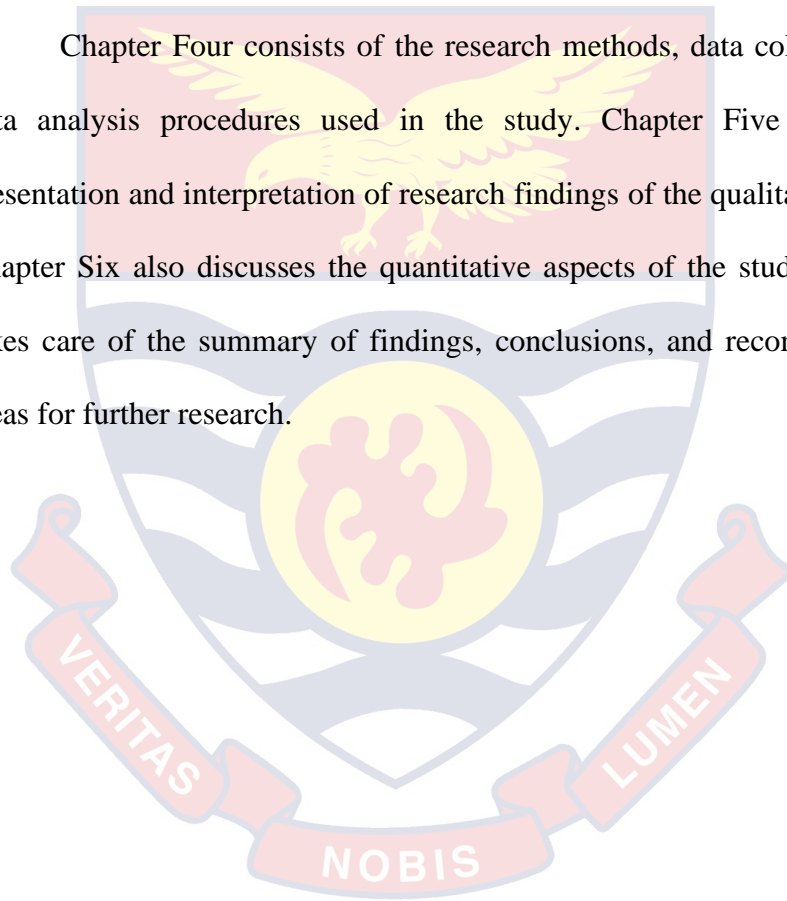
Organisation of the Study

The study comprised seven chapters. Chapter One deals with the introduction and background of the study, statement of the problem, the purpose of the study, the research questions, hypotheses, significance of the study, delimitations of the study, and limitations.

Chapter Two is concerned with the review of conceptual and theoretical related literature on quality concepts and TQM philosophy. Major concepts such as quality, quality control, quality assurance, quality improvement, Total Quality Management (TQM), the principles of TQM, service quality dimensions, are to be discussed. TQM implementation in University institutions and institutional service performances, institutional internal and external customer-groups, and customer satisfaction are presented. The theoretical contribution to TQM philosophy from the quality gurus is also mentioned.

Chapter Three covers the empirical literature review and conceptual framework. Studies on TQM awareness and implementation in organisations, studies on the relationship between TQM and organisational performance, TQM implementation in Higher Education Institutions (HEIs), common barriers that hindered the implementation and the conceptual framework of the Study were mentioned

Chapter Four consists of the research methods, data collection tools, and data analysis procedures used in the study. Chapter Five focusses on the presentation and interpretation of research findings of the qualitative aspects, with Chapter Six also discusses the quantitative aspects of the study. Chapter Seven takes care of the summary of findings, conclusions, and recommendations, and areas for further research.



CHAPTER TWO

CONCEPTUAL AND THEORETICAL LITERATURE REVIEW

Introduction

This chapter presents the review of related literature which focuses on the conceptual and theoretical review. Books and articles, both hard and soft copies have been explored to extract the most relevant and current information pertaining to the historical development in the field of quality concept. Quality Management System (QMS) and Total Quality Management (TQM) implementation, as well as the other quality, approaches in education settings within the developed and developing countries including Ghana, are also presented. The literature review provides insight into how the investigator could limit the scope to the area that needs inquiry (Creswell, & Creswell, 2017). In light of this, a variety of relevant sources have been reviewed to gain insight into concepts, principles, theories, and perspectives related to the topic.

Conceptual Review

Quality Concept

It is remarkable to have deep knowledge about the quality concept and how quality is managed in an institution first when talking about the Total Quality Management (TQM) concept. Even though the concept of quality has existed from early times, the study definitions of quality have been given prominence only in the last century. The concept of quality was initially accepted to improve the management of manufacturing industries. It was the early 1990s, that the service industries including education have seen the tremendous benefits to the

provision of service to their numerous diverse customers (Sallis, 2014). There are a number of definitions designed to operationalise or to address the concept of quality (Afrane, Owusu-Manu & Adesi, 2014; Fonseca, 2015).

The idea of quality is seen in two ways, the absolute notion of quality and the relative notion of quality (Ahmed & Ali, 2016; Sallis, 2014). On one hand, the absolute notion of quality is similar to goodness, beauty, and truth (fitness of purpose). It is ideal of which there can be no compromise. On the other hand, the relative notion of quality which is in the technical sense is largely a relative concept. The relative definition views quality not as an attribute of a product or service, but as something which is ascribed to it (Sallis, 2014). Quality in this sense is about being measured against criteria and applies to the provision of education service (Kalayci, Watty, & Hayirsever, 2012).

The relative definition of quality also has two aspects to it, and the first is concerned with measuring up and ensuring conformity to a predetermined specification or standard (Becket & Brookes, 2007). This is also termed as fitness for purpose and is sometimes called the systems and procedural concept of quality (Sallis, 2014; Van der Vleuten et al., 2012). The second aspect is the transformational quality which has less to do with systems and procedures and more to do with continuous improvement and institutional transformation (Laohavichien et al., 2009; Lundström et al., 2012). It focuses on the softer and more intangible aspects of quality (TQM principles). It is often said that while the procedural notions of quality are essential and necessary, they are by themselves not sufficient to ensure customer loyalty (Sallis, 2014). Transformational quality

is achieved through the exercise of leadership. It is the leadership that establishes a vision that translates into customer service and builds the structures and organisational culture that empower staff to deliver quality service (Sallis, 2014; Van der Vleuten et al., 2012).

One of the most clearly defined sets of dimensions of quality in Higher Education Institutions (HEIs) has been identified by Harvey and Knight (1996). Harvey and Knight identified five different approaches to defining quality. The first is in terms of “exceptional”, which is a product or service exceeding high standards and passing required standards. Second, is in terms of “consistency” and exhibited through “Zero defects” and “gets things right the first time” making quality a culture. Thirdly, quality is seen “as fitness for purpose”, meaning the product or service meets the stated purpose, customer specification, and satisfaction. The fourth quality definition is, “as value for money” which depicts efficiency and effectiveness. The last is as transformative in terms of qualitative change (Chen, Chen & Padró, 2017; Harvey, 2012).

Traditionally, quality has been regarded as the responsibility of the Quality Managers or Offices and was not being recognised that quality problems originate from all over the institutional units. Quality is so essential that it should under no circumstance be left in the care of quality professionals or managers only. It can be ensured on an institutional-wide basis and therefore should be the responsibilities of all stakeholders of an institution (Cranfield & Taylor, 2008; Juran, 1986).

Again, it is equally not the best, when uninformed persons try to follow their way because they trust themselves that they know what quality is. This type of behaviour does not reflect the understanding and knowledge of quality that is present in a very competitive institution. An institution that believes that the traditional quality control techniques and the way they have always been used will resolve their quality problems may be misguided. Quality control requires a comprehensive approach that must first be recognised and then implemented. Total quality management is far more than shifting the responsibility for the detection of problems from the customer to the provider.

Quality in Higher Education Institutions (HEIs)

Quality has its roots established predominantly in manufacturing industries before the concept was accepted into service industries. However, for the past two decades, there has been a strong push for adopting quality in education service too (Owlia & Aspinwall, 1996; Srikanthan & Dalrymple, 2004; Telford & Masson, 2005). The recognition of quality in Higher Education Institutions (HEIs) started with the Bologna process, where many institutions considered keeping up a certain academic standard which is in line with the high quality of education service to students. The Bologna process has transformed the HEIs not only in terms of structure but also in terms of the quality management system in the Universities. The concept of quality, therefore, has been accepted in the service industries of which the educational institutions are not exempted. This is happening at a point where the institutional customers' roles have received much attention in the HEIs.

Harvey and Knight (1996), mostly used the dimension of quality to define the concept of quality in the higher education context. The widely differing conceptualisations of quality are therefore grouped into five discrete but interrelated categories namely: exceptional, consistency, value for money, fitness for purpose, and transformative. In the provision of education service, all the five dimensions of quality mentioned above, fit into the education systems. Exceptional means being outstanding HEIs, maintaining the highest standards; consistency is the institution to have the educational process of creating a service quality product, or having zero defects. In the case of value for money, it is associated with an increase in institutional autonomy, in the context of enhanced transparency and better fund management; for fitness for purpose, it describes the extent to which universities are capable of meeting their standards and of fulfilling their declared mission, putting mechanisms to make sure they constantly meet their objectives or declared purpose. The fifth dimension is transformative, which involves a total change of the institution and all stakeholders, including an increase in student skills.

Similarly, Juran (1995) defined quality as 'fitness for use' and adds that HEIs have to develop programmes of study and services that meet or exceed the requirements of the customers as their primary mission. This implies the existence of mechanisms meant to assure the customers that, the institution will constantly meet its objectives, within the framework of its declared purpose. A high-quality institution is one that clearly states its mission (or purpose) and is efficient and effective in meeting the set purpose.

Dew (2009) also defined quality concepts in HEIs from five perspectives. First, he sees quality as endurance and this relates to the institution's capability to maintain its reputation of quality education for a long period. Secondly, regarding quality in terms of luxury and prestige, Dew argued that, if an institution has a beautiful or prestigious campus, buildings, cutting-edge research facilities, ICT facilities, and investment in scholarship, that institution is associated with good quality. Thirdly, quality is seen as conforming to the prescribed requirements. This approach to quality is related to a set of specified attributes. These attributes are usually set out by accreditation agencies and institutions are considered quality institutions when they meet the stated requirements. Fourthly, Dew saw quality as continuous improvement, which means achieving the fastest rate of innovation and improvement in all aspects of higher education. Finally, he defined quality as value-added which suggests that improvement must be seen in the provision of education service.

Education is a service to the customer and an ongoing process of transforming the participants involved. It is a transforming process by means of which the customers' perception is changed through the education process. It is a lasting process meant to relatively iron out and enhance values, beliefs, customs, traditions, and practices that the universities share with their students and other customers. The transformation process considers the relationship between a particular university and society. In the long run, quality has to be looked at as a practice use, and experience. It is worth noting that, in the provision of education services, quality has always been given much attention, and quality in HEIs has

never been disputed once the Education Standards and mechanisms for ensuring quality have been acknowledged.

Quality Management System (QMS) in Higher Education

Quality management is a method for ensuring that all the activities necessary to design, develop and implement a product or service are effective and efficient with respect to the system and its performance (Deming, 1986; Nanda, 2005; Sabella, Kashou & Omran, 2014). Quality management, by definition, is all activities that are required to plan for quality in an institution and to satisfy quality objectives. Specifically, quality management comprises four elements namely; Quality planning, Quality control, Quality assurance and Quality improvement (Pratasavitskaya & Stensaker, 2010).

Quality Planning

Quality planning refers to all the activities that are performed to establish quality objectives. This includes the establishment of both short-term and long-term quality improvement objectives (Johnson & Scholes, 2002). The establishment of long-term quality objectives demonstrates management vision and strategic thinking with regard to quality, while the establishment of short-term quality objectives facilitates prioritization of quality objectives in the near-term, and achievement of the long-term quality objectives. However, the words “short-term” and “long-term” are somewhat subjective terms because they do not correspond to fixed implementation time frames.

Quality Control

Quality Control (QC) comprises all activities executed to fulfill requirements for quality. This includes activities to correct discrepancies when they occur and this is based heavily on inspection to find out defects before products or services reached the customer (Dale & Plunkett, 2017). QC is the verification of process output and this is executed by comparing the process output with applicable specifications, standards, or requirements. Discrepancies observed in the output are regarded as deficiencies that need to be corrected. Generally, quality control activities are regarded as reactive because their primary purpose is to detect and eliminate defects already in a product as opposed to quality assurance activities, which generally are regarded as proactive because they primarily seek to prevent defects in a product. Quality control is not necessarily performed as resulting process output at the end of a process, when appropriate, it should also be performed during process execution to facilitate timely corrective and preventive action. For instance, in an educational institution, one Department's output becomes an input to another, hence, quality control could take place at the former Department within the process towards the end product.

Quality Assurance

Quality Assurance (QA) comprises all the planned and systematic activities implemented within the quality management system that can be demonstrated to provide confidence that a product or service will fulfill requirements for quality (Harvey, 2012; Sallis, 2014). Thus, Quality Assurance

refers to the planned and systematic actions considered necessary to provide adequate confidence that a product or service will satisfy given requirements for quality (Borahan & Ziarati, 2002). Two primary parties that benefit from quality assurance activities are institutional management and customers. These parties have vested interest in determining beforehand that requirements for quality would be met.

Quality Assurance can help provide such confidence to management and customers by demonstrating that, plans exist for the achievement of quality requirements (Nanda, 2016). It demonstrates that means exist that specify how requirements for quality are to be achieved, such as procedures, also known as standard operating procedures, and work instructions; including identification of required resources, such as employee skills and equipment, methods and checklists. Quality assurance established that means necessary to achieve quality requirements are available and well deployed in the organization and is also a means exist to correct discrepancies when they occur. Quality control activities, for instance, inspections and product testing and quality audits serve as a useful mechanism to verify whether or not defined processes are being adhered to.

This is to authenticate the competency of personnel performing the work and to verify whether or not the resources required to perform the work are available. Quality Assurance system is a means to ensure that quality requirements have been demonstrated to be adequate for meeting requirements for quality. The concepts of quality assurance and quality control collectively encompass the following:

1. achievement of quality requirements has to be planned;
2. adequate means to achieve quality requirements have to be provided and deployed throughout the organisation and
3. achievement of quality requirements has to be monitored continually (to give way for appropriate action to be taken, when necessary).

Quality Improvement (QI)

Quality Improvement (QI) has to do with all the measures that address the quality notion of transformation and therefore focus on continuous improvement and enhancement of a process, system, and procedure (Saravanan & Rao, 2007). Quality improvement deals with enhancement in the effectiveness and efficiency of processes and the extent to which a product or service exceeds the expected satisfaction (Harvey, 2004). Improvement is the process of enhancing, upgrading or enriching the quality of provision or standard of outcomes (Green, 2012). Improving upon the existing system and procedure is the necessary practice after putting in place some mechanism to monitor and evaluate, hence the quality improvement and enhancement. Improvement of a programme would make the existing programme better, whereas enhancement of a programme would mean to add something to the existing programme to make it better (Harvey, 2012). Efficiency refers to savings in time, money, and effort expended to accomplish a task. Effectiveness refers to the goodness or quality of an accomplished task.

The Deming cycle (also known as the PDC(S)A: Plan, Do, Check or Study and Act) provides a high-level framework that can be followed for defining an

effective quality improvement process (Deming, 1986). A quality improvement process that is derived from the PDCA cycle essentially consists of four steps:

1. Plan: identifying and collecting information about the organisation in the prime areas where improvement will have the most impact on the organisation's performance. Define a quality improvement goal for the process or product to be improved. Ensure that the identified goal meets the SMART criteria (Specific, Measurable, Acceptable, Realistic and Timely). To plan you need to:
 - a. Explore possible solutions that will effectively and efficiently achieve the stated goal.
 - b. Prepare an improvement plan that specifies: how the improvement goal will be achieved, that is, which solution has been chosen for implementation; a list of planned actions and personnel responsible; an implementation time frame and Progress review and reporting mechanisms.
 - c. Plan for anticipated resistance to change, and strategies to overcome it.
 - d. Secure all resources necessary to execute the plan.
2. Do: Making sure that the management understands the objective and methodology of Total Quality Management and is prepared to adopt them all the time. Execute the improvement plan. When appropriate, first implement the improvements as a pilot or directly implementing a permanent process change.

3. Check (Study): By a process of involvement of management and supervision in a scheme of training and communication, identifying quality issues and affecting a resolution of them by management led improvement activities. Review the results of the improvements against expected results, and when actual results differ from expected results, plan for appropriate corrective action.
4. Act: starting a new initiative with new targets and taking the complete improvement process to everybody indicating management and customer links in the quality chain. Obtaining information about progress and consolidating success (Dahlgard, Kristensen & Kanji, 2008). The issue at stake is that quality improvement and process improvement have come to be widely acknowledged as synonymous (Robinson et al., 2017; Ross, 2017). This is due to the growing realisation that institutions provide services by executing business processes. Therefore, improvements in the quality of services result from improvements in the procedures and processes. Consequently, the focus has now shifted towards defining, measuring, analysing, monitoring, controlling and improving business processes, to achieve and maintain improvements in service quality (Nanda, 2016). It is also accepted that the quest for quality improvement is never-ending, and the best institutions are those that strive for and demonstrate continuous quality improvement. Then improvement in its operations and evaluations of the outputs will meet the needs of internal and external customers through comprehensive continuous

improvement of activities for the organisations as an integrated quality management system (Kanji & Asher, 1996).

Quality Management System (QMS) is how quality planning, control, assurance, and improvement are made an integral part of an institution. QMS is not a temporary fashion, but a permanent part of an institution with a direct bearing on how the institution provides its services (Pratasavitskaya & Stensaker, 2010). It is not static, and by definition, it must be improved continually to enhance institutional effectiveness and efficiency. QMS consists of the institutional structure, procedures, processes, and resources needed to implement quality management, which is generically applied to all units, regardless of the activities carried out in an organization.

Concerning education, the principles of the quality management system depend on the domain of educational services. The quality management system in education must be acknowledged to include the curriculum development, the learning processes, the organizational structure, the responsibilities, processes, and resources that ensure the quality of all activities carried out in education. Therefore, ensuring quality in the education context should not be focusing only on those in the teaching and learning enterprise. Again, in ensuring quality in higher education institutions, the requirement of a quality assurance system is necessary and could be found as part of the quality management system. Nevertheless, it is generally accepted fact that the quality management system is wider than the quality assurance system, with the latter being the approach (Sârbu, Ilie, Enache, & Dumitriu, 2009).

Quality Assurance in Higher Education Institutions (QAHEIs)

The establishment of quality assurance in higher education institutions has been regarded as one of the success factors of the Bologna process (Berlin Communiqué, 2003). What is referred to as quality in HEIs, has acquired an ever clearer-shape in institutions. However, attention has not been focused on the entire quality management system, but only on quality assurance, which forms a part, centered on creating confidence that quality demands shall be met. The quality assurance system in HEIs refers to the mechanisms put in place, of which the university grants, both to the internal customers and the external customers, confidence that all the conditions are met to attain the assumed standards (Ulewicz, 2017). Quality assurance in education is achieved using a group of actions aimed at developing the institutional capacity to elaborate, plan and implement education programs; thus, recipients become confident that quality standards are met by the education supplying institution.

Total Quality Management (TQM) Philosophy

The history of quality came out with the four levels of evolution of TQM and clearly shown that quality control is a subset of quality assurance and quality assurance is part of total quality management as illustrated by Dale *et al.*, (2016) shown in Figure 2. TQM is a management process and a set of disciplines that are coordinated and managed in order to ensure that the institution consistently meets or exceeds customer requirements (Töremen, Karakus, & Yasan, 2009). TQM can also be defined as a set of management philosophies focusing on achieving quality and as a set of guiding principles that are intended to meet or exceed the

expectations of various external and internal customers that are a party to the higher education system (Venkatraman, 2007).

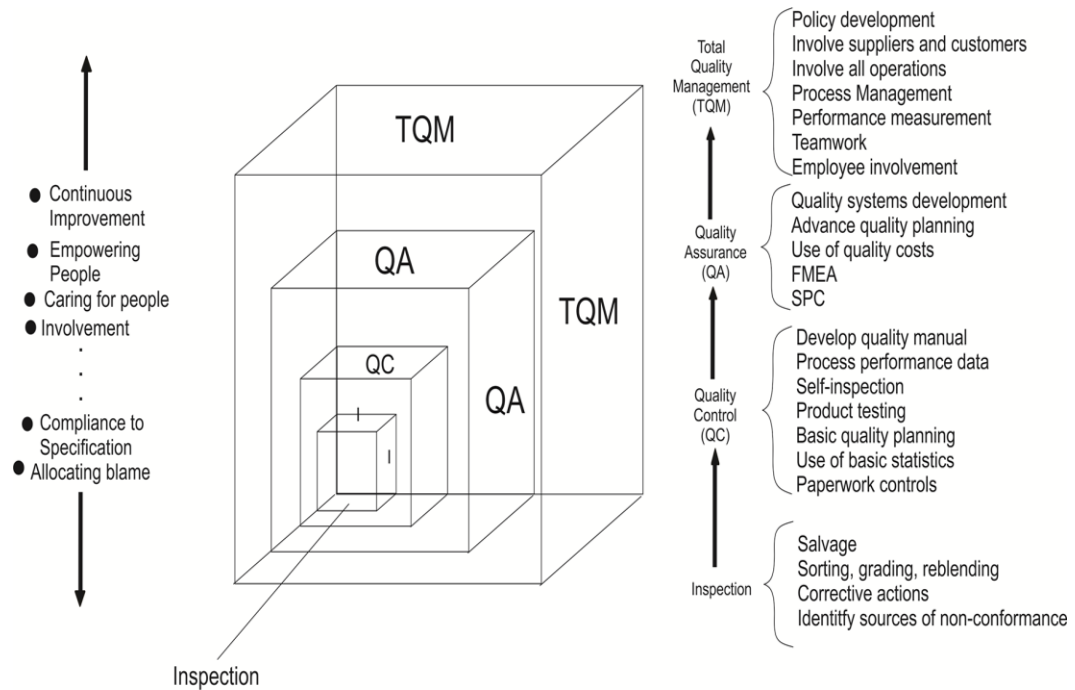


Figure 2: The Four Levels in the Evolution of TQM-(Dale et al., 2016)

Feigenbaum (1983), who is credited with being the originator of the term TQM, defines TQM as being the impact that the model (TQM) has on the institution-wide quality system (Sahney et al., 2004).

Total Quality Management (TQM) could also be seen as the process of integrating all activities, functions, and processes within an organisation to achieve continuous improvement in the delivery of goods and services for customer satisfaction (Sallis, 2014). TQM refers to the application of quality principles to the overall process and all the management functions in order to ensure total customer satisfaction. That is, TQM is about providing quality in all aspects of organisation operations. More important, it is doing things right first

time, striving for continuous improvement, fulfilling customers' needs, making quality the responsibility of every employee (Irani, Beskese, & Love, 2004).

Although TQM definitions have been mentioned above, there are a number of definitions established among researchers, of which they all focus on continuous improvement and customer satisfaction. Notable among them include Oakland (cited in Oakland, 2014, p. 03), who defined TQM as “a comprehensive approach for improving competitiveness and flexibility through planning, organising and understanding each activity, and involving everyone at each level”. TQM ensures that the management adopts a strategic overview of quality and focus on prevention rather than inspection.

According to Jeffries, Evans, and Reynolds (cited in Curry, & Kadasah, 2002), TQM is a comprehensive and integrated way of managing any organisation to meet the needs of the customers consistently and achieve continuous improvement in every aspect of the organisation's activities. Kanji (2001) defined TQM as a continuous improvement process for individuals, groups and whole organizations. What makes TQM different from other management processes is the concentrated focus on continuous improvement. Flynn, Schroeder, and Sakakibara, (1995) saw TQM as an integrated approach to achieving and sustaining high quality output, focusing on the maintenance and continuous improvement of processes and defect prevention at all levels and in all functions of the organisation, to meet or exceed customer expectation. TQM is the mutual involvement of everyone in an institution and associated with institutional systems to provide services, which meet and likely to exceed the needs and

expectations of their numerous customers (Dale, 2015; Jan, 2015; Psychogios & Priporas, 2007).

Kreitner (2005) argued that TQM is creating an organizational culture committed to the continuous improvement of skills, teamwork, processes, product, and service quality. Kreitner's definition emphasises continuous quality and understanding of the organisational environment. Zairi and Youssef (1995), defined TQM as a positive attempt by the organisations concerned to improve structural, infrastructural, attitudinal, behavioural and methodological ways of delivering to the end customer, with emphasis on consistency, improvements in quality, competitive enhancements, all to satisfy or delight the end customer. Last but not least, Montgomery, Panagopoulou, Kehoe, and Valkanos (2011) iterated that, total quality management is a set of management practices aimed at instilling an awareness of quality principles throughout the organisation and ensuring that the customer requirements are consistently met or exceeded.

In study literature on quality, TQM is regarded as both a philosophy and a set of management guiding principles for managing an organization (Ekiz, Ozgurur & Sian, 2015). In this regard, two important aspects of TQM have been identified, namely: the tools and techniques, and concepts and principles (Psychogios & Priporas, 2007). The tools and techniques are what has been referred to as the "hard side" of TQM, while the principles are the "soft side" of TQM. The term "TQM" appeared in the 1980s when it was suggested to replace the word "control" used by Feigenbaum in the 1950s with "management" as it was believed that quality was not something to be controlled but to be managed. It

refers to the application of quality principles and techniques to the overall process and all the management functions to ensure total customer satisfaction.

Rosa and Amaral (2007), argued that it is difficult to find a single definition for TQM, however, it is better to put forward the principles that underline TQM operations. Although there are countless definitions of TQM, what matters is for top management applying the fundamental concepts of TQM that are appropriate for particular institution conditions. In this current study, TQM can be summarized as a management system for a customer-focused institution that involves all employees in continual improvement. In a TQM effort, all members of an institution participate in improving processes, services, and the culture in which they work. It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the institution. One objective of TQM is customer-focused and is now being used as synonymous with good management and now acknowledged as the methodology for getting all individuals in an institution focused on continuous improvement (Ugboro & Obeng, 2000). An understanding of what TQM is, and how TQM could have a role to play in higher education is essential.

According to Witcher (cited in Sahney, Banwet, & Karunes, 2004), TQM is composed of three terms: “Total” meaning that every person is involved including all customers. It involves the whole organisation, every department, every activity and every single person at every level. Horwitz (cited in Dubey, & Singh, 2012) also see “total” in the definition by emphasising the involvement of each individual in the organisation. TQM is a total process in which one

recognises that everyone in the institution contributes in some way to the end product or service provision to the customer. The term “Quality” also implies that customer requirements are met exactly, while “Management” indicates that senior executives are committed (Sallis, 2014; Green, 2012).

Quality is viewed as the ultimate responsibility of top management. Because managers create the institutional systems that determine how products and services are designed and produced, the quality improvement process must begin with management's own commitment to total quality. Staff work effectiveness is viewed as a direct function of the quality of the systems that managers create (Ishikawa, 1985; Deming, 1986; Sallies 2014). TQM is one quality system that can be described as a complete organisational system in itself and was the name given to W. Edwards Deming’s concept of transformational quality management (Valmohammadi, & Roshanzamir, 2015).

From the philosophical definition, Yusof and Aspinwall (2000), and Fotopoulos and Psomas (2009) also were in support that, TQM consists of three major elements that make the abbreviation TQM much more meaningful as shown in Table 1.

The T-component of TQM

TQM implies a total, institution-wide commitment to quality. Back in the 1950s, Feigenbaum had already recognized the importance of a comprehensive, company-wide approach to quality and introduced the term Total Quality Control (TQC). The Japanese subsequently adopted Feigenbaum’s approach to quality and

Table 1: Major Elements of TQM

Total	Quality	Management
1. Require employee participation and teamwork	1. Customer (internal and external) driven	Require commitment from top management
2. Everyone must develop a sense of quality ownership	2. Emphasis on continuous improvement (kaizen)	2. Establish purposes and values for the institution
3. Involve every level and function of the organisation	3. Technical issues: training for skills and knowledge	3. Leadership is critical
4. Apply systems thinking	4. Human issues: encourage innovation	4. Make the appropriate change in organization culture

Sources: (Yusof & Aspinwall, 2000; Fotopoulos & Psomas, 2009).

renamed it a company-wide quality control. Juran (1988, p.56) cited three reasons for the success of the company-wide quality control effort in Japan:

- (1) Strong leadership of top management in leading the quality revolution;
- (2) Proper training in quality management for employees at all levels; and
- (3) An emphasis on gradual, continuous improvement.

These characteristics are the results of adopting Deming's philosophy of quality and have laid the foundation of the TQM concept. In simple terms, the T-component of TQM calls for everyone, management, both internal and external customers to be responsible for the quality and involved in all possible efforts to maintain or to upgrade their work.

The Q-component of TQM

Among other quality innovators, Deming (1986) and Juran (1989) also recognized the role of the customer in judging quality. The major goal of total quality management is to meet or exceed customer expectations. However, management must also recognize that internal customers are as important in assuring quality as external customers who purchase and use the product. To

realise the full benefit of continuous improvement requires systematic planning, execution, and evaluation of the entire product distribution process. Disseminating of the required knowledge and skills in quality management and control to staff. Effective training should also teach and empower all staff to understand and solve quality related problems.

The M-component of TQM

The broad nature of TQM efforts requires the strong commitment of top management to the process. Top management is solely responsible for creating clear and visible values and integrates these values into the business strategic plans. As a result, top management is the driver of the TQM and is considered important in Deming's 14 points. On the other hand, because all staff must be involved, it is important to reshape the institutional culture that supports the TQM practices. The effort to involve staff and transform institutional culture makes horizontal and vertical communication an important aspect of TQM. Defining TQM abstractly is useful but not sufficient and not comprehensive. After the philosophical dimension of TQM is determined, management must formulate appropriate strategies to attain quality goals. Thus, the next dimension of TQM needs to consider an institution's specific goals, policies, and plans that will create competitive advantages. Although there is no single definition to total quality management the following are the most distinctive features of TQM practices:

a. Constant improvement:

Quality improvement is a never-ending goal. There should be a constant review of the customers' needs and constant attempts to improve the quality of the product or service.

b. Cultural change:

The implementation of TQM requires a cultural change within the institution. This includes inculcating in staff the need for quality in everything they do; to put staff in conformity towards mutual trust and interdependence; and developing effective communication among staff on appropriate performance indicators and management databases so that decisions can be based on evidence rather than supposition, tradition or prejudice.

c. Customer-driven definitions of quality:

Outcomes should reflect customer requirements, needs, or preferences. The standards that are set by the institution should be dynamic and consistent with ever-changing customer requirements.

d. The quality chain:

A product or service involves a process that links together a chain of customers and suppliers. The chain extends outside the institution and also operates within the institution. Each staff or department supplies services or products to other departments and is, in turn, a customer of other internal departments. Everyone in the institution must link in the quality chain and at each point, there is a customer-supplier relationship.

e. Institution-wide involvement in quality:

Every aspect of an institution is involved and everyone has an important role to play in improving the quality of the product or service.

f. Management commitment:

TQM requires the commitment of the top management and should be spearheaded by management. Management is responsible for setting and resourcing quality policy, providing motivation through leadership, and equipping people to achieve quality.

g. Teamwork:

It helps to change the culture of the institution from one of individual competitiveness to one of mutual interdependence and collaboration and helps to motivate the workforce.

h. Built-in quality:

Instead of final-stage quality control, TQM builds in quality at each stage in the process. Each supplier in the quality chain is responsible for the quality of the product or service supplies.

i. Statistical techniques:

These are used to help improve quality. They can help measure the costs of quality, identify problems, and resolve them.

j. Institutional structure:

The structure of an institution must be designed to support quality improvement rather than inhibit it. It must allow everyone to have responsibility for the quality, ensure barriers to communication are removed, allow those directly involved in a

process to identify and implement quality improvement, and provide training for quality.

TQM Principles Identified from Literature

Quality practitioners and academics have devoted considerable efforts to identify those TQM factors that influence the level of product and service quality provided by institutions (Dale, 2003; Sila & Ebrahimpour, 2002; 2005). In the study literature, the quality experts, individually, have come out with many quality management Principles and Concepts (Fonseca, 2015). The TQM framework should be built upon a set of core values and concepts. These values and concepts provide the foundation for integrating the key performance requirements within the quality framework. Several studies have examined what constitutes TQM and what are the key principles for the success of TQM (Crech, 1994). There are different terminologies of TQM constructs that are considered so essential to the implementation of the TQM system.

Many researchers (Demirbag, Tatoglu, Tekinkus & Zaim, 2006; Fotopoulos & Psomas, 2009; Karuppusami & Gandhinathan, 2006; Salaheldin & Mukhalalati, 2009; Tort-Martorell, Grima, & Marco, 2011), define the TQM principles in some format, as a set of core values or principles on which the institution is to operate. There are a set of fundamental core values and principles applicable to education and forming the building blocks of the TQM framework of which some previous researchers used in higher education investigation (see Table 2). In some studies, they are referred to as “TQM practices,” while others

mentioned them as “critical success factors, but the meanings of these constructs remain the same.

Table 2: Statistics on TQM Dimensions used in Measuring Quality in HEIs

No	The TQM Principles for the current study (2017)	Bayrakar et al. (2008)	Critical success factors of Kanji et al. (1999)	Benchmarking items of Tang and Zairi (1998)	Checklist of Owlia and Aspinwall (1997)
1	Top management commitment and visionary leadership	Leadership	Leadership	Leadership	Top management commitment
2	Human resource management	Vision	Continuous improvement	Policy and strategy	Strategic planning
3	Design Quality and Process Management (Technical system)	Measurement and evaluation	Prevention	People management	Organisation for quality
4	Management Information and Communication System (MICS)	Process control and improvement	Measurement of resources	Resource management	Employee involvement and team working
5	Quality System and Culture (QSC)	Program design	Process improvement	Process management	Training for quality
6	Tangibles of service (Servicescapes)	Quality system improvement	Internal customer satisfaction		Design management
7	Social Responsibility	Employee involvement	External customer satisfaction		Process management
8	Benchmarking	Recognition and reward	People management		Supplier quality management
9	Customer Focus (CF)	Education and training	Teamwork		Information and analysis
10	Internal Customer (Staff) Satisfaction	Student focus			Customer focus and satisfaction
11	Continuous Improvement and Innovation (CII)	Other stakeholders' focus			

The core values and principles of TQM need to be identified, as they play a major role in the development and implementation of a quality management system (Wiengarten, Fynes, Cheng, & Chavez, 2013). However, about the review of the literature on the TQM concept, the present study identified a set of eleven (11) TQM principles compared to the previously used ones.

The TQM principles identified in the current study have also been acknowledged and implemented in both manufacturing and service industries (Antony, Leung, Knowles & Gosh, 2002; Khamalah & Lingaraj, 2007). Nonetheless, their application to the education context is on superficial levels and piecemeal approaches in developing countries. The eleven principles selected are among the soft components of TQM, and they are significantly associated with education services and in the promotion of service quality (Ueno, 2008). Bath, Smith, Stein, and Swann (2004), and Peat, Taylor, and Franklin, (2005), feel that the principles of TQM can contribute to the improvement of every sector or unit of Higher Education Institutions (HEIs). In this regard, it is strongly believed that these eleven identified TQM principles are suitable to be used in the context of university education.

1. Top-management commitment and visionary leadership

Top management commitment is one of the principles and major determinants of TQM implementation strategies. Top management must be the first to be committed to ensuring quality through the TQM approach, and they have to accept the maximum responsibility for the provision of the service. Top management also has to provide the necessary leadership to motivate all

employees. Previous research in TQM practices emphasized the critical role of top management commitment in driving overall TQM implementation in the institutions (Flynn et al., 1995; Teh, Ooi & Yong, 2008; Zakuan, Yusof, Laosirihongthong & Shaharoun, 2010).

Kanji (2001), asserted that top management commitment is the fundamental driver of business excellence, while other researchers iterated that, top management commitment significantly affects the service quality performance (Arumugam, Ooi, & Fong, 2008; Prajogo & Brown, 2004). Strategic planning incorporates the development and deployment of plans, improves relationships with all customer-groups, and helps in achieving the institutional vision and mission through participative planning (Teh, Yong, Arumugam & Ooi, 2009). A critical part of the management of quality is the strategic and systematic approach to achieving an organization's vision, mission, and goals. This process, called strategic planning or strategic management, includes the formulation of a strategic plan that integrates quality as a core component. However, as a TQM principle, it has a relationship with service quality performance and customer satisfaction (Prajogo & Brown, 2004; Sit, Ooi, Lin, & Yee-Chong, 2009).

2. Human resource management

Human Resource Management (HRM) can be defined as the policies and practices one needs to carry out the 'people' or human resource aspects of a management position including recruiting, screening, training, rewarding, and appraisals (Dessler, 2000). Yang (2006), systematically studied the impact of HRM practices on the implementation of TQM within the high-technology firms

and the empirical results of the study found that HRM practices can have significant effects on customer satisfaction. Yang, further concluded that human resource management as TQM practice significantly correlated with customer satisfaction which is also supported by Sit *et al.* (2009). Nordin, Deros, Wahab, and Rahman (2012), reported that human resource management is one of the critical practices for improving business and management processes. Another study by Sánchez-Rodríguez, Dewhurst, and Martínez-Lorente (2006), noted that the management of people was positively related to TQM and quality performance is associated with purchasing operational performance. Teh *et al.* (2008) also found a positive relationship between empowerment and role conflict. Based on the above comprehensive review of the association between human resource management and different service performance measurement indicators, the following terms are associated with human resource management:

i. Employee empowerment

One principle of the TQM philosophy is to empower all employees of an institution to seek out quality problems and correct them. With the initial quality approach, employees were afraid to identify problems for fear that they would be reprimanded. Often poor quality was passed on to someone else, to make it “someone else’s problem.” The new concept of quality, TQM, provides incentives for employees to identify quality problems. Employees are rewarded for uncovering quality problems, not punished. In TQM, the role of employees is very different from what it was in traditional systems. Workers are empowered to make decisions relative to quality in the production process. They are considered

a vital element of the effort to achieve high quality. Their contributions are highly valued, and their suggestions are implemented. In order to perform this function, employees are given continual and extensive training in quality measurement tools.

ii. Staff training and education

The staff of an institution should be guided by the principles of training for all of them. Adequate plans for personnel recruitment and training have to be implemented and workers need the necessary skills to participate in the improvement process. Training and education spread the knowledge of continuous improvement and innovation in the service process to attain full benefits and business excellence. Talib and Rahman (2010) reported the critical role of training and education in maintaining a high quality level within the service industry. Further, the research on TQM also found a positive correlation between training and education, and institutional performance (Vermeulen & Crous, 2000).

iii. Employee involvement and encouragement

Deming (1986), iterated that employees' involvement and participation at all units of an institution is a way forward to improve the quality of the current and future product or service. The internal customers can make significant contributions when they are involved in quality improvement processes, decision making processes, and policymaking issues (Sadikoglu & Zehir, 2010; Ooi, Arumugam, Safa, & Bakar, 2007a). Institutions should utilize all employees' skills and abilities to gain service quality performance. Employee encouragement

such as rewards and recognition, motivates employees to perform which in turn influences customer satisfaction (Zhang, Waszink, & Wijngaard, 2000; Tari, 2005).

In this regard, Yusuf, Gunasekaran, and Dan (2007), reported that employee encouragement is positively related to institution performance and employee satisfaction. It has also been found that employee encouragement gives the right direction to the workforce and is an essential practice in customer service industries. All employees participate in working toward common goals. Total employee commitment can only be obtained after fear has been driven from the workplace, when empowerment has occurred, and management has provided the proper environment. High-performance work systems integrate continuous improvement efforts with normal business operations. Self-managed work teams are one form of empowerment

iv. Teamwork

Teamwork refers to an increase in employees' control over their work and allows them to work as a group (Ooi, Bakar, Arumugam, Vellapan, & Loke, 2007b). This practice provides an atmosphere of mutual relationship, involvement, and participation throughout the organization. According to Ooi *et al.* (2007b), teamwork as a TQM practice is positively associated with employees' job satisfaction. They further found that, where teamwork was perceived as a dominant TQM practice, improvements in job satisfaction levels were significant. Yang (2006) commented that the entire organisation should work for improving

quality and support for quality improvement activities by implementing teamwork practice.

The formation of teams within an organisation is critical to an organization's TQM success. One feature of TQM is the total management which stresses that quality is the entire institutional effort. TQM places great emphasis on teamwork when it comes to facilitating in solving quality problems. The contributions of teams are considered vital to the success of an institution. One of the most common types of teams in the quality circle, a team of volunteer institutional staff, and their superiors whose purpose is to solve quality problems. The circle is usually composed of a number of members involved and decisions are made through group consensus. The teams usually meet weekly during work hours in a place designated for this purpose. They follow a preset process for analyzing and solving quality problems. Open discussion is promoted, and criticism is not allowed. Although the functioning of quality circles is friendly and casual, it is a serious business.

3. Design quality and service process management (technical system)

The technical system includes design quality management and service process management. The design of services is a relevant dimension of quality management and is vital in the sense that, it should meet or exceed the expectations and desires of customers and eventually leading to the enhancement of institutional performance. Designing quality into service insists on combining the precision, the integral attitude, and the customer-orientation of responsible stakeholders involved. Good service design results in an excellent quality of core

service with features that influence customer perceptions of service quality in an affirmative manner (Sureshchandar, Rajendran, & Kamalanabhan, 2001).

Service process management, on the other hand, refers to the procedures, systems, and technology that are required to streamline the service delivery. It is concerned with the non-human element of service delivery. A fundamental part of TQM is a focus on process thinking. A process is a series of steps that take inputs from suppliers (internal or external) and transforms them into outputs that are delivered to customers again, either internal or external. The steps required to carry out the process are defined and performance measures are continuously monitored to detect unexpected variation. Process management is a systematic approach in which all the resources of an institution are used most efficiently and effectively to achieve the desired performance (Sit *et al.*, 2009). In the view of Motwani (2001), process management stresses the value-adding to a process, increasing the productivity of every employee, and improving the quality of the institution. In many empirical studies, Prajogo and Sohal (2004); Flynn, Schroeder, and Sakakibara (1995), and Cua, McKone, and Schroeder (2001) systematically investigated the relationships between process management and quality performance.

4. Management information and communication system

i. Management information

The information and analysis cover a wide range of subjects about information and knowledge management, and measurement and analysis of organizational performance (Ju, Lin, Lin, & Kuo, 2006; Rampersad, 2005)

Concurrent competitive challenges induced by globalisation, liberalisation, and proliferation in information technology have forced institutions to focus on managing customer relationships, and in particular customer services (Stefanou, Sarmaniotis, & Stafyla, 2003). Quality information has to be readily available and the information should be part of the visible management system. Records about quality indicators have to be kept, including scrap, rework, and cost of quality.

Fulfilling customer needs and expectations are considered to be a baseline of any kind of business. When customers' needs and expectations are achieved, quality performance is improved and thus, satisfaction is established. Prajogo (2005), revealed the importance of information and analysis of TQM practice on service quality performance. Information and analysis also help an organization to ensure the availability of high quality, timely data and information for all customers, both internal and external (Teh, Yong, Arumugam, & Ooi, 2009).

ii. Communication system

Communication refers to the information sharing process between individuals/employees of the organization (Ooi, Arumugam, Safa, & Bakar, 2007a; Ooi, Bakar, Arumugam, Vellapan, & Loke, 2007). Managers and practitioners use effective communication to enlist the support of other employees towards achieving the organisation's objectives. Several studies reveal that effective communication influences the organization to move systematically towards employees' involvement and customer satisfaction and improves organization performance (Ooi *et al.*, 2007a; Yusuf *et al.*, 2007).

5. Systems quality culture

Zeitz, Johannesson, and Ritchie Jr, (1997) maintain that, while organizational culture and TQM are closely related, they are distinct. They argue that while practices such as TQM may reflect the culture within an organization, organizational culture itself is more embedded within the organization reflecting a pattern of shared and stable beliefs and values that are developed within the organization over time. Rather, it is asserted that the prevailing organisational culture can support TQM by providing an environment that is conducive to the successful implementation of TQM (Salaheldin, 2009). It was also pointed out by Prajogo and McDermott (2005) that, organizational culture is treated as an antecedent of TQM in their study. The quality office needs access to top management and autonomy, and also has to combine the work of other units of an institution. It is of relative importance to have management function whose sole routing activities are in quality management. Lakhal, Pasin, and Limam (2006), claimed that there is a significant relationship between quality approaches and institutional service performance. Gore (1999), emphasized that the quality culture of an organization is a strong basis for enhancing the organization's success. Generally, the culture of an institution could impact individual behaviour (Bose, 2004), knowledge sharing (Ooi, Lin, Teh, & Chong, 2012), job satisfaction (Ooi *et al.*, 2007b).

6. Tangibles of services (Servicescapes)

Tangible of service (Servicescapes) refers to the environments in which services are delivered and where the Institution and its customers interact (Bitner,

2000). Booms and Bitner (1981), defined a servicescape as the environment in which the service is provided, and in which the provider and customer interact, combined with tangible commodities that facilitate performance or communication of the service. The concept of a servicescape was developed by Booms and Bitner to emphasize the impact of the physical environment in which a service process takes place and therefore, seems relevant in the evaluation of service with comprehensive or tangible things (Bitner, 2000). As the service itself is not tangible, the peripheral evidence could be evaluated. Bitner is of the view that the physical settings may also influence the customer's ultimate satisfaction with the service. Her framework points to a complex mix of environmental and psychological factors that influence the internal responses and external behaviours of customers and employees.

The servicescape helps customers clarify both their expectations and their satisfaction with their service experience (Bitner, 2000; Nilsson & Ballantyne, 2014). In an institution, the evaluation of the buildings, the theatres, or the staff offices are necessary. The willingness to learn is higher for students in nice servicescape and their perception of the service is likely to be higher. The service is often produced and consumed simultaneously, therefore, the surroundings might have a strong impact on customer perception and consequently affect customer experience of the service. The three important aspects of the servicescape include; spatial layout and functionality; signs, symbols, and artifacts, and ambient conditions.

7. Social responsibility

Social responsibility is an important concept, which is probably missed out completely in the quality management literature, though it has repeatedly found due recognition and representation in the Malcolm Baldrige National Quality Award (MBNQA). Malcolm Baldrige National Quality Award (MBNQA) has been used by many organizations in the U.S. as a framework for developing quality initiatives and awards. It has become a model for the deployment of quality programs. The framework underlying the award has been used extensively by organizations, both for award and self-assessment (US Department of Commerce and Technology Administration, 1999). For instance, an educational institution that grants scholarships for the poor or loans to needy ones would certainly be revered and valued by the customers. Although this factor sounds highly complex and imperceptible, it improves an organization's image and goodwill thereby influencing customer perceptions of service quality.

In the context of education, it has been revealed that higher education institutions can cause significant environmental impacts (Jabbour, 2010). Alshuwaikhat and Abubakar (2008) iterated that, many of the Universities as a result of their big size, expressive movement of individuals and vehicles, high consumption of materials, and strong development of multifaceted activities, cause environmental impacts. Universities like manufacturing organisations are usually responsible for severe environmental degradation (Haden, Ornstein, Rudek, & Cameron, 2009; Hoffman & Woody, 2008). It is imperative, therefore, for the universities to be responsible for society and their stakeholders. Various

definitions have been offered for Corporate Social responsibility and simply put, social responsibility requires the Universities to commit to harmonising and improving environmental and social impacts without damaging economic performance. University institutions are not operating in a vacuum and apparently, their operation will affect their external environment.

8. Benchmarking

Benchmarking, one of the most important approaches to TQM, is widely used by many organisations including university institutions to help them become better in their field of performance. Benchmarking is the process of comparing performance information, within the institution as well as outside the institution. The concept of benchmarking is a systematic and continuous measurement process of continuously comparing and measuring organisational occupation processes against leaders in the industries anywhere in the world to take action to improve its performance (Tasopoulou & Tsiotras, 2017). The purpose of benchmarking is to provide a target for improving the performance of the organisation to achieve superiority in the market place. It also aims to measure an institution's operations or processes against the excellence performers from inside or outside its industry (Sit *et al.*, 2009).

For institutions to consider themselves well enough, they should have the ability to learn and study how others do their things. This is an important feature of continuous improvement. The benchmark institutions do not have to be in the same business as the ones they are observing. A benchmarking policy for key processes should be put in place to improve the performance of the institution and

to achieve a competitive advantage (Yusuf *et al.*, 2007). According to Bank (1992), the competitive benchmarking process has five steps, namely:

1. Decide what is going to be benchmarked. This may cover all departments and units in the University as well as customers.
2. Select the competitors who are the best in terms of the aspects that one's institution wants to measure.
3. Decide on the most appropriate measurements that will be used and develop a strategy for collecting data.
4. Determine a competitor's strengths and assess those strengths against one's performance.
5. Develop an action plan.

In the process, people must have the determination to learn from others because benchmarking involves finding gaps, problem-solving, and continuous improvement. The link between benchmarking and TQM is improving performance based on institution best practices and should directly contribute to meeting customer requirements.

9. Customer focus

Customer focus is the most important principle of TQM with regard to an institution's provision of services. The needs of customers and consumers and their satisfaction have always been the focus of all institutions. It is necessary to identify customers' needs and their level of satisfaction. TQM institutions must be knowledgeable in their customer requirements and be responsive to customer demands, and measure customer satisfaction through TQM implementation

(Zakuan, Yusof, Laosirihongthong, & Shaharoun, 2010; Zhang, 2000). Quality is defined as meeting or exceeding customer expectations.

Institutions are to identify and then meet customer needs. TQM recognises what the customer wants and therefore, we can say that quality is customer-driven. According to the review results from Hackman and Wageman (1995), obtaining information about the customer is one of the most widely used TQM implementation practices to improve the quality performance of the institutions. It is imperative, therefore, to assess the relationship between customer focus and service quality performance. It is imperative for institutions to continually gather information by means of surveys and interviews to listen to the voices of their customers. Institutions must always remember that they would not be in business if it were not for their customers.

10. Internal customer (staff) satisfaction

In a total quality context, customer satisfaction is the driving force for an organization to improve its performance (Zairi, 2000). Juran (1993) identified two different kinds of customers. These are the external (students, government regulatory bodies, alumni, societies, and communities) that defines the quality of the service delivered, and the internal (employees: Lecturers, Administrators and support staff) that defines the quality of the processes associated with the delivering of services. Both external and internal customers have needs and TQM philosophy stresses the importance of satisfying those needs (Sallis, 2014). To satisfy the customers, everyone within the organisation should consider continuous improvement as something normal and there should be a way of

receiving customers' information to the organisations and benchmarking to improve the customer orientation (Rampersad, 2001).

11. Continuous improvement and innovation

Another principle of the TQM philosophy is the focus on continuous improvement and innovation. Traditional systems operated on the assumption that once an institution achieved a certain level of quality, it was considered enough and needed no further improvements. Continuous improvement and innovation, which is the most important part of services, means searching for never-ending improvements and developing processes to improved methods in the process of converting inputs into useful outputs. It helps in reducing the process variability thereby continuously improving the output performance (Sadikoglu & Zehir, 2010). Corbett and Rastrick (2000), asserted that in TQM, the best way to improve institutional service performance is to continuously improve the performance activities.

Application of TQM in Education Context

The present literature suggests that every educational institution should have a customised model for the application of TQM (Prasad, 2017). The general model has characteristics like identifying the need for TQM with every unit of an institution, motivation for achieving higher standards, and continuous improvement. The following model is an attempt towards the development of steps for the implementation of TQM in educational institutions.

Step 1: Awareness and commitment of top authorities about TQM

It should include:

- a. Awareness of the need for TQM
- b. Awareness of successful TQM stories in educational institutions
- c. Awareness of the benefits of TQM
- d. Commitment for introducing, navigating and supporting the TQM

initiative

Step 2: Setting up the following groups formally

- a. Controller group (top authorities)
- b. Facilitators
- c. Quality Improvement Teams (QITs)

The controller group is responsible for overlooking the project and for setting up and monitoring policies and procedures of the Quality Improvement Teams (QITs) and facilitators. The controller group should communicate fortnightly with the QITs through the facilitators. The communication must be a two-way process. The management group, by example and by their action, is to provide the following four critical elements to the TQM prototype implementation.

- a. Commitment to the process.
- b. Recognition to those involved.
- c. Drive out the fear of being ignored or being laughed at, encourage the members to give new ideas, and do not threaten the members to give these new ideas.

- d. Delegate and drive decision making and problem-solving to the lowest practical level.

Step 3: Identify team leaders and facilitators

The TQM implementation will require the formation of several teams to include the Controller Group, the Facilitator Group, and the Quality Improvement Teams. While the “team concept” is critical to the TQM process, each team will need a team leader or “coach”. These leaders will provide “coaching” for each team and also serve as the communication link between each of the groups. The leaders or coaches must be identified first and early in the process.

Step 4: Train the identified members

It is necessary to provide the team leaders and facilitators with the training and skills to implement TQM. After being trained, it should be anticipated that all or a select number of the leaders will provide the same training to all other employees selected to participate in the process.

Step 5: Strengthening quality improvement teams

The basic foundation for the TQM process is the improvement teams. TQM advocates team sizes of 3 to 12 individuals. The research team would propose that each Quality Improvement Teams (QIT) consists of six individuals to include the team leader (coach). In selecting the QIT team members, the following should be considered:

- a. The teams should consist of members from a cross-section of job responsibilities, i.e., members from teaching staff, non-teaching staff and students can also be included.

- b. Team members should be willing to work with others.
- c. A team member should be willing to listen as well as instruct.
- d. A team member should have a basic knowledge of the process (no need for in-depth knowledge).
- e. Team members should be selected based on their ability to attend all or the majority of the meetings for 12 months.
- f. Team members should be creative and open-minded.

Step 6: Train Quality Improvement Teams

There is a need to provide the QIT members with the training and skills to implement TQM. Individual group members should be able to attend any of the training at different times and locations. However, all training should be completed before the collection of data for the prototype implementation phase.

Step 7: Sample implementation

Implement TQM in a pilot area, for example, it may be applied to one of the many colleges; it will act as a test for measuring the effectiveness of all the above steps.

Step 8: Review of sample and TQM implementation

After implementing the prototype model (step-6), it is anticipated that the top management will evaluate the benefit of the TQM application in terms of cost or effort. If difficulties were encountered during the prototype application, they are to be analyzed with the intent of either correcting them or considering them in the decision to proceed or not to proceed with TQM.

Step 9: Enforce full-fledged TQM implementation throughout the Education Institution

The successful implementation of TQM requires fortitude, perseverance, and tolerance as well as systematic planning. The model suggested can have several modifications and variations depending on various parameters relating to a particular institute.

TQM in Developed Countries

The application of the TQM concept in the developed world seems to be ahead of their counterparts in developing countries. In the 1940s, after the Japanese Union of Scientists and Engineers, extensive efforts were made to promote quality control through which provided educational programmes in quality control to Japanese organisations (Lakhe & Mohanty, 2002). In 1950, Deming was invited to teach on Statistical Quality Control (SQC). Deming who contributed most to the development of quality management in Japan and that led to the institution of the annual Deming Prize for quality in 1951.

The attention on quality increased widely in Japan when Deming (1986) and Juran (1986) gave a series of lectures to the leaders of Japanese companies. (Deming, 1991; Juran, 2003). It was in this period that quality control activities began to receive the backing of top management, and organisations began to institute programmes of company-wide quality control. Ishikawa (1985) identified certain aspects of the most important factors in implementing successful quality control programmes in Japanese companies. Japanese companies were the first

companies interested in issues of quality. They achieved significant success across the world as a result of directing more attention to quality.

At the end of the 1970s, American management began to recognise and accept that many successful Japanese products had gained access to American markets, which was, in fact, the result of high-quality products coupled with low prices. The realisation that quality management and quality control were critical elements in Japan's market success finally led the American industry to focus on quality management and statistical techniques (Lakhe & Mohanty, 2002). Garvin (1986) directed further attention to the management of quality as a critically important element for the potential successful recovery of market share by US organisations. These ideas brought about some conceptual changes in the traditional approach to quality management.

In terms of European countries, they have sought to achieve political and economic integration in European markets, which have led to an improvement in the quality of products and services, and increase the competitiveness of organisations. The focus is on a move towards quality improvement processes, the introduction of quality-related training, and concern for adapting the relationship of an organisation with the outside world through the pursuit of quality (Lakhe & Mohanty, 1994). For more than twenty years, one of the major issues of European policy was the promotion of strategies and a variety of quality programmes aimed at developing and improving countries in the European Union (EU). This was mainly achieved through community support frameworks. The self-assessment of quality is now being widely adopted in all kinds of organisations through the

developed world (Mavroidis, Toliopoulou & Agoritsas, 2007). While all EU countries share a similar motivation for the development of quality management, differences exist in the implementation strategies.

TQM in Developing Countries

Feigenbaum (1991) asserted that, in an increasingly competitive world, it is no longer acceptable to see quality as an extra or merely desirable goal, rather it must be regarded as an indispensable strategy and competitiveness, and even survival is not possible without it. Many developing countries have opened their doors to external competition. Crosby (as cited in Djerdjour, 2000) stated that the only means for developing countries to increase trade activities on a sustainable basis is to increase the quality of their products and services (Tentime, 2003). According to Camgoz-Akdag (2007), countries in the Middle East, South America, Africa, Arab countries, and nations such as Malaysia, China, India, and Singapore have embraced concepts of TQM to improve their productivity and competitiveness in international markets. Ghana is one of the Africa nations not exempted, with the establishment of many government agencies to promote quality management to improve the product and service to the consumers. Some of the agencies include those statistical quality control units established in both government and private institutions including the education sector

Benefits of TQM Implementation

According to many experts in research (Brigham, 1993; Zakuan *et al.*, 2012), TQM remains a minimum global requirement if any organisation is prepared to stay in the competition. From the related literature, the TQM

implementation has not achieved its intended purposes entirely (Koch & Fisher, 1998; Zakuan *et al.*, 2012). However, the research did not conclude that TQM philosophy is worthless, rather the suggestions were that it is the problem of its implementation. They attributed the failures to common mistakes made in implementing TQM in industries, which included lack of leadership, middle management muddle, misunderstanding of participation, obsession with process, and failure to include the customers. Those manufacturing industries that failed to listen to the voices of their consumers ended up not satisfying them. They had a notion that, once products are produced based on the required formulae, they will by all means satisfy the consumer.

Kohn (1993), pointed out that, in some of the higher education institutions, they look at achieving high grades graduates (Mishra & Pandey, 2013). TQM is not an end in itself, so to consider that measure alone as success in implementing TQM is a major misunderstanding of the principles of TQM. Therefore, the misinterpretation of TQM philosophy and the lack of understanding of the processes for the TQM implementation in education should be things of the past to institutional management. Literature support that the benefits of TQM for higher education institutions cannot be overemphasised (Houston, 2007). Through TQM, there could be an improvement in teamwork, improved focus on customer satisfaction and involvement, and participatory roles of staff. The improvement leads to improvement in the work ethic and morale of academic and support staff with the resultant improvement in quality (Venkatraman, 2007).

Characteristics of Service

The characteristics of services are more difficult to define than that of the product because it includes many subjective elements. Services differ from products in many ways. First, the services require direct contact with customers, meaning that there are a close relationship and unique interaction between service providers and beneficiaries. Secondly, in the case of the products, quality control is achieved at the end of the production, while it happens in the process as far as services are concerned. With the universities, the interaction with the customers offers multiple opportunities to evaluate the educational services being provided. It is also to provide feedback to recognise the essential dimensions of quality and continuous improvement of education (Sallis, 2014). Characteristics of services apply universally to any service and the most important characteristics of services are intangibility; heterogeneity; inseparability and perishability (Moeller, 2010).

The first characteristic of service is intangibility, which refers to the fact that services are performed, which cannot be touched or counted. Service intangibility means that services cannot be seen, tasted, felt, heard or smelled before they are bought. You cannot try them out. Thus, it is difficult for institutions to know how stakeholders perceive and evaluate the service quality of their institutions. The second characteristic is the heterogeneity, which indicates that there is variation in the perception of service quality from producer to producer, stakeholder to stakeholder, or even over time. Heterogeneity has been related to different aspects of services which include the outcome; production performance of different producers or persons and production performance over a

certain period, as well as being assigned to heterogeneous participation of customers in a transformation, hence, assuring uniformity in quality is difficult (Lovelock & Gummesson, 2004; Parasuraman, Zeithaml, & Berry, 1985). The third characteristic is the inseparability of production and consumption. The inseparability means that services are produced and consumed at the same time. It also entails that services cannot be separated from their providers. Services are first sold, then produced and consumed at the same time. In some service, organisations quality occurs at the time of service delivery, mostly in the form of the interaction between the stakeholders and the contact person from the service organisation. Perishability is the fourth characteristic of Services, which means that services cannot be stored for later sale or use. In other words, services cannot be inventoried.

General Characteristics of Service Quality

When it comes to the implementation of total quality management strategies, service industries mostly lag behind their manufacturing counterparts. This could be attributed to the features commonly associated with services, which include the inseparability of the provider and consumer. The peculiar aspect of services is that both providers and consumers have a role to play, in the provision and delivery processes. The intangible nature of services, their perishability, and heterogeneity also make the service evaluation differently from products. Services are also consumed at the same time as they are produced, with the consumer playing an integral part as the whole process unfolds. In many services, the consumer is required to contribute information and/or effort before the service

transaction can take place. In this regard, service provision and quality depend not only on the performance of the service providers but also on the involvement of the consumer.

Parasuraman *et al.*, (1985), described service quality (SERVQUAL) as the ability of the institution to meet or exceed customer expectations. Customer expectations may be defined as the “desires and want of consumers”. They refer to how customers feel a service provider should offer rather than what would offer. Definitions of service quality, therefore, focus on meeting the customers’ needs and requirements, and how well the service delivered matches the customers’ expectations of it. Currently, the emphasis has been placed on the need to understand the role of customers, given the fact that their expectations of quality are increasing.

In this regard, customers are becoming more discerning and critical of the quality of service that they experience. Expectations are pre-determined beliefs about a product or service of which most customers encounter when entering a service agreement with the provider. Whether or not these expectations are met will have a significant bearing on how they perceived service quality. Perceived service quality can, therefore, be defined as the discrepancy between what the customers are expecting and their perceptions of what the service provider offers. The information available on the quality of goods is not sufficient to understand service quality. The four well-documented characteristics of service provide a clear understanding of what service quality is (Parasuraman *et al.*, 1985).

In some cases, the inputs of stakeholders become important for the quality of service delivery. Prakash and Mohanty (2012) and Hill (1995), added a fourth characteristic, namely perishability. They go on to state that perishability refers to the fact that goods/services can be consumed only as long as the activity or the process continues. That means that services cannot be stored for a long period like products and are stopped when the organisation discontinues the process.

Determinants of Service Quality Dimension in Education

When talking about the quality management system and its relationship with service quality performance, there is a need to determine the relevant aspects of service quality dimensions. In this study, service quality can be defined as the difference between customers' expectations for service performed before the service encounter and their perceptions of the service received from an institution. According to Oliver (as cited in Asubonteng, McCleary, & Swan, 1996), service quality theory predicts that customers will judge that quality is low if performance does not meet their expectations and quality is high if performance exceeds expectations. Hence, customers' expectations serve as the foundation on which service quality will be evaluated by customers. The implication is that, as service quality increases, satisfaction with the service also increases.

In trying to investigate the dimensions of service quality, it is necessary to differentiate between quality associated with the process of service delivery and quality associated with the outcome of service, respectively judged by internal customers and the external customers after the service is performed. Concerning the assessment of quality on the process of service delivery in this study, eleven

TQM principles were identified. In the case of the quality on the outcome of service, five dimensions were identified. In this regard, the customer becomes an integral part of TQM implementation and the provision of services in the university institutions (Kang & James 2004).

Table 3 depicts the service quality dimensions used in determining the quality service performance in various organisations by some researchers who were identified in the literature review. They include Sasser, Olsen, and Wyckoff (1978), as they came up with seven quality dimension which they believe adequately embrace the concept of service quality; Lehtinen and Lehtinen (cited in Izogo & Ogba, 2015) came out with three forms of quality dimensions which affected the service quality level.

Grönroos (1984) in his article in the European Journal of marketing developed the first service quality model and measured perceived service quality based on the test of qualitative methods. Parasuraman *et al.* (1985) proposed 10 service quality dimensions and they offer the most widely reported set of service quality dimensions. They suggested that the criteria used by consumers that are important in molding their expectations and perceptions of delivered service fit into the ten dimensions. They simplified the ten dimensions of service quality into five dimensions as depicted in column 4 of Table 3 (Parasuraman *et al.*, 1988).

Owlia and Aspinwall (1996) interpreted the quality for higher education in terms of the quality dimension by using Garvin's (1987) eight quality framework, Watts' (1987) eleven software quality dimension and final five service quality dimension of Parasuraman *et al.*, (1988). However, many researchers are familiar

Table 3: Statistics on Service Quality Dimensions used in Previous Research

Sureschander et al. (2002)*, (5)	Core service or Service product	The human element of service delivery	Systematization of service delivery: non-human element	Tangibles of service (Servicescapes)	Social responsibility					
Johnston, et. al. (1990), (3)	Hygiene factors	Enhancing factors	Dual-threshold factors							
Parasuraman et al. (1988), (5)	Tangible	Assurance	Responsiveness	Reliability	Empathy					
Garvin's (1987), (8)	Performance	Features	Aesthetics	Reliability	Conformance	Durability	Serviceability	Perceived Quality		
Parasuraman et al. (1985) (10):	Tangibles	Competence	Responsiveness	Access	Credibility	Security	Reliability	Courtesy	Understanding	Communication
Grönroos (1984) (3)	Technical quality	Functional quality	Corporate image							
Lehtinen & Lehtinen (1982), (3)	Physical Quality	Corporate Quality	Interactive quality							
Sasser, et. al. (1978), (7)	Security	Consistency	Availability	Completeness	Condition	Attitude	Training			

*Note: *The current study adopted Sureschander et al. (2002) Dimensions defined*

with the most popular service quality delivery model of Parasuraman *et al.* (1988), the SERVQUAL, used to measure quality performance. The SERVQUAL quality dimension and their interpretation are: (a) Tangibility- Physical facilities, equipment, and appearance of personnel; (b) Reliability - Ability to perform the promised service dependably and accurately; (c) Responsiveness - Willingness to help customers and provide prompt service; (d) Assurance - (including competence, courtesy, credibility, and security). That is management and employees' knowledge, courtesy, and ability to inspire trust and confidence in the external customers and finally (e) Empathy - (including access, communication, understanding the customer). Comprising caring and individualised attention an institution provides to its customers.

Notwithstanding its widespread impact on business and academia, SERVQUAL has been subjected to several criticisms. But what is to be reconsidered is the fact that despite disagreement overuse of the expectations and performance measures as well as the dimensionality of the SERVQUAL instrument across different industrial settings, researchers and practitioners seem to generally agree that the 22 items are good predictors of an overall evaluation of service quality by consumers. However, it is noteworthy that, the completeness of the 22-item scale proposed by Parasuraman *et al.* (1988) in addressing the critical dimensions of service quality is a subject of further investigation because scrutiny of the scale items reveals that most of the items mainly focus on the human aspects of service delivery and the remaining on the tangibles of service (Sureshchandar *et al.*, 2002).

Sureshchander *et al.*, (2002) criticized that, the four of the five SERVQUAL's dimensions, namely, reliability, responsiveness, assurance, and empathy, correspond to the factor of the human element in the service delivery only. The fifth dimension, which is "tangibles", relates to the effect of the physical facility, equipment, personnel, and communication materials on customers. Although the importance and relevance of these SERVQUAL factors in predicting service quality are, without a bit of uncertainty, acclaimed by many, it is also worth noting that the highly subjective concept of service quality education, is not only confined to the realms of these two dimensions.

Other factors identified by Sureshchander *et al.*, (2002), namely; the core service or service product; systematization or standardisation of service delivery (the non-human element), and the social responsibility of the service institutions need to be evaluated. The five service quality dimensions are listed in Table 4 with the symbols used in this research, as well as an explanation of each of them. This study therefore in support, adopted the Sureshchander *et al.*, three identified quality dimensions in addition to the previous two of Parasuraman *et al.*, (1988). These five service quality dimensions could be used to measure levels of external customer perceived service quality and provide institutional management with a standard in which improvement efforts can be focused.

Table 4: Five Service Quality Dimensions used in the Study

Symbol of Dimension	Identified Dimensions	Explanation of the Dimensions
A	Core service or service product	The core service refers to the essence of service. Whatever service features are offered is as important as how it is delivered
B	The human element of service delivery	This factor refers to all aspects (reliability, responsiveness, assurance, empathy, moments of truth, critical incident and recovery) that will fall under the domain of the human element in the service delivery
C	Systematization of service delivery: non-human element	Systematization of service delivery refers to the non-human element in the service delivery in contrast to the human element. Service delivery processes should be perfectly standardized, streamlined, and simplified so that customers can receive the service without any disturbances
D	Tangibles of service (Servicescapes)	The tangible facets of the service facility (equipment, machinery, signage, and employee appearance) or the man-made physical environment, popularly known as the “servicescapes”
E	Social responsibility	Social responsibility is an important concept, which is probably missed out completely in the quality management literature. With the entire business community undergoing a service quality revolution this subtle aspect helps an organization to lead as a corporate citizen in encouraging ethical behaviour in everything it does.

Source: (Sureshchander *et al.*, 2002)

Characteristics of Education Services

Lovelock (1983), offered a useful conceptual foundation that involved five criteria, each of which can be examined in four dimensions. Using Lovelock’s framework, education services can be described as having the following characteristics: The nature of the service act, where the education service act is directed at the peoples’ mind and involves largely intangible actions (Chiu, 2002). The second is a relationship with the institutional customers in which education involves a lengthy and formal relationship with them and a continuous provision

of the service. Thirdly, is the level of customisation and judgment in service delivery, the extent to which a service provider exercises judgment in meeting the needs of individual customers is high particularly in the case with teaching staff. Finally, is the nature of demand relative to supply where the method of service delivery may move customers to a service provider or the reverse is the case?

In higher education, two categories of service are identifiable namely, the process of teaching and learning and other services rendered to customers of the institution, and the (Srikanthan, & Dalrymple, 2004). The process of teaching and learning are the courses, research, and outreach programme to ensure that quality product is achieved. The other services rendered include general administrative processes such as finance, staff training, and development, admission process, healthcare delivery, security, utility services, accommodation services management, and library services.

Relationship between TQM Practices and Service Performance

Previous researches have shown that organisations which adopted TQM practices have improved quality performance (Valmohammadi & Roshanzamir, 2015). TQM practices have been measured in various ways and found out that the quality management practices, is the best predictive of organisational performance, which varies across the world (Adams, Muir, & Hoque, 2014; Adam *et al.*, 1997; Prajogo & Sohal, 2006; Arumugam *et al.*, 2008). The research framework for quality management proposed by Flynn *et al.*, (1995), suggested that the inputs of this framework are the quality management practices while quality performance represents outcomes. Further, the product design process,

process flow management, and top-management support have a significant correlation with quality performance (Flynn *et al.*, 1995).

Parzinger and Nath (2000), examined the link between TQM and software quality and found that TQM implementation improves software quality and performance, and thus, increases customer satisfaction. Hasan and Kerr (2003) studied the relationship between TQM practices and organisation performance in service industries and discovered that TQM practices like a top-management commitment; employee involvement; training; supplier quality; quality costs; service design; quality techniques, benchmarking and customer satisfaction leads to higher productivity and quality performance. Prajogo and Brown (2004) conducted an empirical study within Australian organisations to investigate the relationship between TQM practices and quality performance, and the results indicated a strong and positive linkage. A study on ISO-9000 certified organisations of Taiwan performed by Jeng (1998) examined the linkage between six TQM practices and quality performance. He found customer focus as the most powerful discriminated practice of quality performance while the remaining five practices showed low discriminating powers.

Brah, Tee, and Madhu Rao (2002) examined the relationship between TQM constructs and organisation performance by measuring the quality performance of Singapore companies. They found that the implementation of TQM leads to quality performance and has a positive correlation. Another study (Prajogo, 2005) based on the comparative analysis of TQM practices and quality performance between Australian manufacturing and service firms, reported that

there exists no significant difference in the level of most of the TQM practices and quality performance between two sectors. A recent empirical study conducted by Arumugam *et al.* (2008) explored the relationship between TQM practices and quality performance on ISO 9001:2000 certified manufacturing organizations in Malaysia

Institutional Customers

Higher education institutions have diverse customer-groups. They are diverse and have different expectations and perceptions among themselves (Owlia & Aspinwall, 1996). Ishikawa was the first among the quality experts of TQM who introduced the importance of internal customers (Chen, 2012). According to Spanbauer (1995), there are two types of customers. Spanbauer sees students as external customers and also considers employers, parents, communities, alumni, and government as external. The internal customers are the lecturers, administrators, the senior and junior staff of the university education (Militaru & Drăgu, 2009).

Kanji and Tambi (1999) argue that the customers of HEIs are divided into many different groups, of which there are links to the educational process. The customers include the current students, potential students, employees, employers, government, and industries. They classified the customers according to the location (internal or external within an institution) and also according to the frequency of interaction that the institution has with the customers (into primary, secondary, or tertiary) being internal or external customers. According to them, the internal customers are those who work with management to the satisfaction of

external customers. Kanji and Tambi (1999) say the students can be internal or external, depending on the role developed. When students are regarded as educational partners, then they are the secondary internal customers to the university with employees being the primary. On the other hand, students are classified as primary external customers when they are regarded as learners of the University (Kanji & Tambi, 1999). The classification made by the authors is shown in Figure 3.

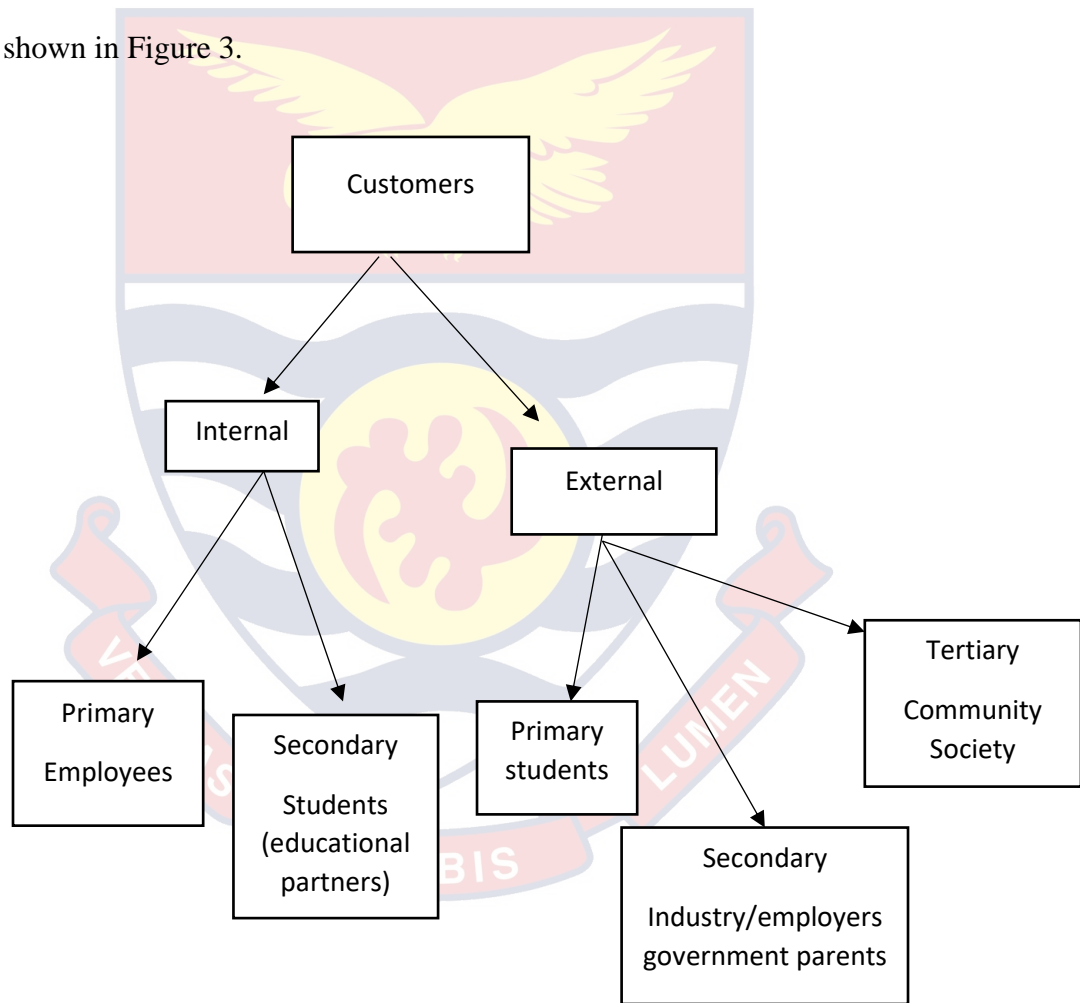


Figure 3: Customers of HEIs (Adopted from Kanji & Tambi, 1999)

Robinson and Long (1987), emphasised the necessity of internal marketing in the universities and underscore as, particularly important for this a bigger focus on the human. They also classify the customers in primary,

secondary, and tertiary, in accordance to what they understand to be an order of relevance. To them, the primary external customers are the students, while the same students could also be seen as secondary internal customers. The secondary external customers are the parents, employers/businesses while the tertiary customers are validating bodies, alumni, families, and government. They termed the education authorities and employees as the primary internal customers.

According to Kotler and Fox (1995), every educational institution has several customers (publics) and it is imperative to know how to manage responsive relations with most of them. To them, a public is a distinct group of people or individuals for institutions that has an actual or potential interest in effect on an institution. They identified sixteen major publics which include, the current students, prospective students, faculty members, parents of students, administration and supporting staff, alumni, suppliers, competitors, government agencies, the business community, mass media, foundations, trustees, accredited institutions, local communities, and the general public. Karapetrovic and Willborn (1997) also identified the students, their families, companies, university professors and staff, and the government as customers. They, however, emphasised that those who can effectively help to establish the requirements of a course are the employers, professional organisations, alumni, government, and education process. According to them, these are customers that can give useful information and feedback on the quality of the education process, through surveys. The concept of quality has therefore been changed and involves the

assessment and satisfaction of the needs and expectations of institutional customers (Seymour, 1993).

Reavill (1998), developed a specific methodology for the customers' identification of higher education, thinking on establishing the customers' requirements as the principal part in Total Quality Management (TQM). He also identified twelve stakeholders or customers that contribute to, or benefit from higher education, namely; students, employers, the family and dependents of the student, universities and their employees, the suppliers, the secondary education sector, other universities, commerce and industry, the nation, the government, taxpayers and finally professional bodies. Reavill (1998), affirm the difficulties in identifying an order of priority of the relative importance from these customers. Of these, Reavill, himself, came out to say that, the most important customers are the students, the employers, and the families.

Table 5 shows the number of researchers and various customer-groups they have been referred to in their research as customers of higher education institutions. In the context of this study, students are classified as external customers. One of the foci of Total Quality Management (TQM) is customer satisfaction which will eventually lead to customer loyalty. The Universities core mandate is to produce high quality graduates which could be achieved through the provision of service quality that has a relationship with TQM. To have a total evaluation of TQM implementation, there is the need to seek the views of the consumers of these services rendered by the institution, of which the students are the most beneficial of this education service.

Table 5: Customer Groups of HEIs used in Research by Previous Authors

Authors	Student	Employer	Lecturer	Soc./ Gov.	Family	Mgt./ Empl.	Others
Weaver (1976)	X	x	x	x	x	x	
Kotler & Fox (1985)	X	x	x	x	x	x	x
Robinson & Long (1987)	X	x	x		x	x	x
Ermer (1993)	X	x	x				
Owlia &Aspinwall (1996)	X	x	x	x	x		
Karapetrovic &Willborn (1997)	X	x	x	x	x	x	x
Rowley (1997)	X	x	x	x	x	x	x
Owlia & Aspinwall (1997)	X	x	x	x	x	x	x
Reavill (1998)	X	x	x	x	x	x	x
Kanji & Tambi (1999)	X	x	x	x	x	x	
Hewitt & Clayton (1999)	X	x	x	x			
Hwang & Teo (2001)	X	x	x	x			x
Prendergarst <i>et al.</i> (2001)	X	x	x	x	x		x

Sources: Pereira & Da Silva (2003).

It is imperative therefore to consider them as external customers being learners, paid to acquire knowledge rather than considering them as educational partners, being involved in decision making

Relationship between TQM Practices and Institutional Customer-groups

University institutions as mentioned earlier have numerous customer-groups and these customers of the education service are diverse and have different requirements, but their needs could be complementary or contradictory among themselves (Sallis, 2014). The word “customer” being used in this study has the equivalent meaning as institutional clients or stakeholders used by the previous

researchers, of which the terms are at times used interchangeably (Sahney, 2016). If quality is about meeting and exceeding customer needs and wants, it is important to be clear who the customers are (Sallis, 2014; Owlia & Aspinwall, 1996). Anyone who is affected by the service or by the process used to provide the service is a customer being external or internal (Juran, 1990; Eno, 2015; Mitra, 2016). In order to implement a TQM model in education institutions, it is essential to understand, through research, the needs of internal and external customers and to be able to accurately forecast these needs into the near future (Spanbauer, 1995). The feedback from customers has to be addressed so that shortcomings could be identified and improvements put in place to remedy these shortcomings. Another requirement for the implementation of TQM in education is that higher education institutions must ensure that they make the most effective and efficient use of limited resources. This is to ensure that they provide their customers with the best possible education in terms of technology, infrastructure, teaching methodologies, and support systems; and that the qualities of these are constantly and continuously improved.

The internal customers of an institution assist the management to provide services to their external customers (Madu & Kuei, 1993). Any University institution should negotiate and gather the views of its customers, which may differ from the customer-groups and manage the possible conflicts (Rosa, Sarrico & Amaral, 2012). Looking at it from the Consumer Behaviour Theory in Education, education is the provider of service with many diverse customers. The question is, how do we meet the needs of our customers?

For institutions to improve quality services to their customers, first of all, there is the need to understand TQM philosophy, acknowledge the principles, and implement them well enough to achieve its major objective, customer satisfaction. Obviously, in a situation where the concept of the customer has been agreed, many academic staff would still be uncomfortable with the priority which TQM gives to the customer's needs. Many have acknowledged and added to their operation, the performance measurement and quality assurance system, while TQM is being perceived as a strange system and inappropriately demanding. Meanwhile, quality assurance systems form a component in TQM practices. Despite all the arguments, Total Quality Management has been accepted in HEIs as an appropriate method (Hodgkinson & Kelly, 2007; Srikanthan & Dalrymple, 2004; Töremen, Karakus, & Yasan, 2009; Quinn, Lenay, Larsen & Johnson, 2009).

TQM has the potential to encompass the quality perspectives of customers whose perception is mostly determined by the satisfaction they get from the service (Becket & Brookes, 2008). According to Töremen *et al.* (2009), TQM ensures that the institution consistently meets and exceeds customers' expectations and involves all divisions, departments, and sections of an institution. Customers' satisfaction in TQM is viewed as a condition for quality, as the needs of the customers are considered and determined to achieve high service quality (Toremen, *et al.*, 2009; Vouzas, & Psychogios, 2007).

According to Eagle and Brennan (2007), HEIs are required to implement TQM principles to respond to the needs and expectations of customers. Again,

they advocate that the principles of TQM should be paid heed to by HEIs during the implementation stage. Applying these principles can help to achieve the aim of securing present and future customer satisfaction, as well as securing the participation and involvement of customers in deciding how to improve quality and how to motivate the customers through feedback. It is worth noting that, having knowledge of the current status of products or services and the scope for improvement, is extremely important.

There is some evidence that the practice of TQM is not restricted to manufacturing industries, but is also widespread in the service industries including education. The realisation that quality is not only related to product features but also to every aspect of the business, has given a real boost to the implementation of TQM in education institutions (Mbaka & Hood, 2017). Lawrence and McCullough (2001), proposed a system of guarantees designed to accommodate multiple stakeholders, the various and changing roles of students in the educational process. Their system of guarantees focuses on three customer groups: students, instructors of advanced courses that build on prerequisite courses, and thirdly organizations that employ graduates of the college. Sahney, Banwet, and Karunes (2004) consider the education system as a transformation process comprising inputs of students, teachers, administrative staff, physical facilities, and processes. The processes include teaching, learning, and administration. Outputs include examination results, employment, earnings, and satisfaction.

Roffe (1998), argued that due to open competition, students are becoming more customers as well as consumers and expected to pay a growing share of the costs of education. This leads to competitive forces that generate different programmes for different student groups. In their model for TQM implementation in higher educational institutions, Osseo-Asare and Longbottom (2002) proposed enabler criteria, which affect performance and help organizations achieve organizational excellence. These “enabler” criteria are leadership, policy and strategy, people management, resources and partnerships, and processes. They also suggest “result” criteria including customer satisfaction, people satisfaction, and impact on society and key service performance results for measuring the effectiveness of TQM implementation.

Many TQM objectives are in conjunction with the work of HEIs that have put into practice in their institutions and response to external quality assessment and audit. Nevertheless, TQM continues to be viewed by many as inappropriate to the culture of HEIs. A case study of one faculty from the Management School of Lancaster University shows that successful academic innovation can be compatible with TQM principles. Such principles seemed to be applied contrary to the old established traditional culture of an academic institution. The HEIs may differ from business organisations in that, for many of their members, excellence in satisfying the needs of their customers are not the most important form of excellence. Quality of output and reputation in academic research are most likely to be valued in many HEIs.

According to Walsh, Hughes, and Maddox (2002), the success of TQM depends on how the principles are put into practice, top management commitment, the empowerment, and involvement of the employees, trust, and support of employees in support of management and continuous training on the application of new techniques and methods. The implementation of TQM in HEIs, according to Walsh *et al.* (2002), is having a relationship with the service performance and there are possibilities to improve performance and reputation, increased efficiency, effectiveness, staff motivation, and customer satisfaction.

Although the TQM principles are being practiced in many of the HEIs, some problems have been identified in this regard, which includes Low management commitment, Employee resistance to new methods, a lack of confidence by the management to implement TQM, the failure of academic staff to accept teamwork and resistance amongst academic staff regarding market concepts and customer strategies when attempting university-wide implementation of TQM (Quinn, Lemay, Larsen, & Johnson, 2009; Walsh *et al.*, 2002).

For the implementation of the TQM principles to be successful as a method of ensuring quality in service provision, it depends largely on the institutional management level of awareness and understanding of the concept.

With the increase in national and international competition and greater customer expectations for quality education service, institutions are engaged in both quality assurance and improvement which will lead to customers' satisfaction (Gapp & Fisher, 2006; Koslowski, 2006). In the present competitive market, as well as the

massification and diversification of institutional programmes, the success of institutions depends on the quality of services rendered. In support of this idea, Smith, Smith, and Clarke (2007), proclaim that HEIs are facing challenges due to rapidly changing technology, growing international and national competition of students, staff, research output, accountability by accrediting agencies, and the governments. According to Giertz (2000), quality in higher education can be studied from two perspectives. Firstly, by clarifying what is meant by quality and understanding of the core values of HEIs? Here quality is associated with fitness for higher education.

Becket and Brooks (2007), explain that quality is at the centre of any educational system. It helps to determine the contents of the curricula, how well students learn, and what advantages they derive from their education. They looked at the importance of quality improvement in HEIs as a link to the vision and mission of HEIs, which are the provision of in-depth knowledge, satisfying the students and other customers, seeking academic development and the coordination of national development needs. Quality improvement is emphasised in HEIs for several reasons, which includes the expectations of institutional customers and the diversity of their expectations (Becket & Brooks, 2007).

Even though the reasons for quality improvement varies from one organisation to another, Johnston and Kong (2011), contended that the main objective for improving service quality in HEIs is a concern for the improvement of customers' satisfaction and winning their loyalty, increasing the confidence of these customers in the institutions and developing a strong attachment with them.

Arguably, the quality improvement that makes TQM systems complete helps HEIs to delight their customers and allow them to have good perceptions about service performance. This is to say that, for Universities to stay in the competition, both nationally and internationally, TQM implementation that emphasises quality improvement is a prerequisite.

Alumni Association

Universities are now dipping themselves into practices like branding as a mechanism for combating decreasing government funds and increasing engagement of alumni and potential donors (Stephenson & Yerger, 2014). In several studies, academic success shares a positive relationship with alumni who are more frequently involved with university activities (Weerts, Cabrera, & Sanford, 2010). Specifically, attendance at university reunions, which are typically planned and implemented by alumni associations, is positively related to alumni support to their institutions (Wunnava & Lauze, 2001). Alumni associations differ in varying degrees in institutions worldwide. Some are very structured and play an important role in supporting the institution and maintaining contact with the institution (Hanson, 2000; Holmes, 2008).

A study by Harrison (1995), reported that the single most significant factor in explaining fundraising success within the sampled institutions was institutional expenditures on alumni activities, which included not only events but also efforts at communications and other programs. Other factors related to alumni involvement that have a positive impact upon institutional support include loyalty and emotional attachment to the alma mater; willingness to recommend the alma

mater to others; reading alumni publications and seeking information about fellow alumni (Okunade & Beri, 1997; Taylor & Martin, 1995).

Where this is the case, inviting this group to evaluate their own institutional effectiveness will be appropriate. What is important is that the alumni should not be forgotten. The goodwill of this group impacts both recruitment and donations. The alumni also bring personal and professional expertise that can be very helpful to institutional leadership. The question of how well the campus is maintaining positive contact with this group is, therefore, an important one. The alumni are also important in another way, as they provide a very good resource for an institution wishing to evaluate its successes and its areas for growth.

Surveying alumni a few years after they have left campus will often provide a good understanding of the quality of the institutional programmes. Procedures to build and strengthen relations with former students (alumni) include the build life-long relationships with alumni in support of the institution; facilitate two-way communication between the institution and alumni; Leverage a powerful alumni voice on behalf of the institution and Maintain history and traditions and help secure a bright future for the institution (Newman & Petrosko, 2011).

National Accreditation Board (NAB) and Accredited Institutions in Ghana

The National Accreditation Board (NAB) listed about 186 accredited public and private tertiary institutions, offering one and two-year professional certificates, two and three-year diplomas, four-year degrees and post-graduate degrees. Currently, the country has twelve public universities, two of which are

newly established (National Accreditation Board [NAB], 2016). Ghana's tertiary institutions currently enroll over 300,000 students in a full range of academic and professional fields with the public universities enroll more than two-thirds of the total population.

The Ghanaian public universities have changed extensively in recent times. The number and the access capacity of degree programmes are increasing rapidly (NAB, 2016). However, the rapid increase in the gross enrolment rate has affected the overall quality of educational activities, particularly in the context of severely limited resources. Consecutive governments through their quality agent, NAB, have therefore made it one of their priorities to address the issues of quality in the education sector.

The External Quality Assurance, the National Accreditation Board (NAB) was established by the government of Ghana in 1993 with the enactment of the NAB LAW 1993 (PNDCL 317), to contribute to the furtherance of better management of tertiary education as an external quality assurance agency for the Government. It is responsible among other things for the accreditation of both public and private tertiary institutions, and to ensure the quality of higher education in Ghana. Immediately after independence, most states in Africa adapted a state-organised system of education. The case in Ghana is not different, the formal education structure modeled on the British system was set up during the colonial period. Since independence, however, the higher education system has gone through several reforms in an attempt to make it more modern, effective, and able to serve the socio-economic needs of the country.

Even though there have been many reforms in the Ghanaian higher education to make it more responsive to society, the system is still confronted with some challenges. Notable among them are the “iron triangle” of education (access, cost, and quality) in university education. There exists an increasing demand for tertiary education coupled with the rate of population growth (access), poor financial conditions and budgetary constraints (cost), and the quality management system (quality) (World Bank, 2000). The drive to increase enrolment in Ghanaian higher education institutions has, therefore, occurred at the expense of quality as pointed out by Awuah (2008). In such a situation, the question then is whether the national quality assurance agency is fulfilling its mandate in line with the intentions behind its establishment.

Theoretical Review

The study is guided by the theories of five quality experts namely: Crosby (1979); Deming (1982); Feigenbaum (1983); Ishikawa (1985) and Juran (1986) (Sallies, 2014). Their propositions are the foundation for understanding the concept of TQM. Oakland (2012) argues that the theories present perspectives to the needs of quality management, yet, in practice, they address the same basic principles of total quality management.

Crosby’s Approach to TQM (1979)

Philip Bayard Crosby has become known for his concept of “Zero defects” and “Do it right the first time” which he expects to be the only standard of performance. In 1957, Crosby joined the Martin Company in Florida as a senior quality engineer. In 1961, he started to create a zero defects concept. In

1965, Crosby received an invitation from the ITT Corporation to become its quality director. In 1979, he wrote his best-seller *Quality is Free*. Crosby makes it clear that quality has only to be defined as “conformance to requirements”.

The customer who talks about quality must define his expectations in specific terms. Then exact measurement can be taken continually to determine the conformance of the product or service to those requirements. Crosby sees quality as conformance to requirements. This approach reduces quality to a set of specified attributes or characteristics to achieve. For instance, most approaches to accreditation are based on this framework. Crosby’s definition of quality as conformance to requirements was focusing on the reduction of variation in repeatable processes that would lead to continuous improvement in quality management which is also reflective of Deming’s (1986) plan-do-check-act (PDCA) cycle.

Quality improvement begins with the four absolutes of quality management which Crosby recommends as the core concepts of the continuous improvement process, namely: quality is conformance to the requirements; the system of quality is prevention; performance standard is zero defects and the measurement of quality is the price of non-conformance.

1. Quality is conformance to the requirements: Crosby argues that the key to conformance is to ensure that clear requirements have been defined and that they are understood by all customers. It is then the responsibility of management to establish the internal requirements that the workers are to meet. Management has to provide the necessary means that the workers

need and make an effort to encourage and support the workers to meet those requirements.

2. The system of quality is prevention: this where an institution established procedures to eliminate errors before they occur. Training, discipline, examples, and leadership produce prevention.

3. The performance standard is zero defects: Do it right the first time. Leaders must help others in their pursuit of conforming to requirements by allocating resources for training, providing time and tools to all employees.

4. Finally, the measurement of quality is the price of non-conformance: it is a management tool for diagnosing an organisation's effectiveness and efficiency. These absolute help management focus on quality improvement. Management has to Crosby's philosophy focused upon reducing costs through quality improvement.

In case non-conformance is detected, it means the absence of quality. Crosby does not, however, believe that the employees are the only prime cause of poor quality. His first proposition is that management has to lead by example and the employees follow their example. The second erroneous assumption according to Crosby, is that quality originates in the quality office. He argues that many people are of the feeling that, quality professionals are responsible for quality in their business organisation. He further points out that quality is the responsibility of every employee in the organisation. It is not the quality office that is kept responsible for resolving problems over which this office has no control or

immediate access to the organisation's resources. He stressed that both high-end and low-end products could have high levels of quality.

His philosophy emphasized:

- a. Quality means conformance to requirements.
- b. There is no such thing as a quality problem.
- c. There is no such thing as the economics of quality; doing the job right the first time is always cheaper.
- d. The only performance measurement is the cost of quality, which is the expense of non-conformance.
- e. The only performance standard is "Zero Defects."

Crosby (1979), identified several important principles and practices for a successful quality improvement program, which include; management participation, management responsibility for the quality, employee recognition, education, reduction of the cost of quality, emphasis on prevention defects rather than detection through inspection, doing things right the first time, and zero defects. Crosby claimed that mistakes are caused by two reasons: Lack of knowledge and lack of attention. Education and training can eliminate the first cause and a personal commitment to excellence (zero defects) and paying attention to detail will cure the second cause. Crosby also stressed the importance of management style to successful quality improvement.

Understanding, commitment, and communication are all essential. Crosby presented the quality management maturity grid, which can be used by firms to evaluate their quality management maturity. The five stages are uncertainty,

awakening, enlightenment, wisdom, and certainty. These stages can be used to assess progress in a number of measurement categories such as management understanding and attitude, quality organization status, problem handling, cost of quality as a percentage of sales, and summation of firm quality posture.

Crosby offered a 14-step program that can guide institutional management in pursuing quality improvement. These steps are listed as follows:

1. Management commitment: To make it clear where management stands on quality;
2. Quality improvement team: To run the quality improvement programme;
3. Quality measurement: To provide a display of current and potential nonconformance problems in a manner that permits objective evaluation and corrective action;
4. Cost of quality: To define the ingredients of the cost of quality, and explain its use as a management tool;
5. Quality awareness: To provide a method of raising the personal concern felt by all personnel in the company toward the conformance of the product or service and the quality reputation of the company;
6. Corrective action: To provide a systematic method of resolving forever the problems that are identified through previous action steps;
7. Zero defects planning: To investigate the various activities that must be conducted in preparation for formally launching the Zero Defects programme;

8. Supervisor training: To define the type of training that supervisors need in order to actively carry out their part of the quality improvement programme;
9. Zero defects day: To create an event that will make all employees realize, through personal experience, that there has been a change;
10. Goal setting: To turn pledges and commitment into actions by encouraging individuals to establish improvement goals for themselves and their groups;
11. Error causal removal: To give the individual employee a method of communicating to management the situation that makes it difficult for the employee to meet the pledge to improve;
12. Recognition: To appreciate those who participate;
13. Quality councils: To bring together the professional quality people for planned communication on a regular basis; and
14. Do it over again: To emphasize that the quality improvement programme never ends.

In conclusion, Crosby's main point is that quality is achieved by preventing defects and conforming to requirements. Crosby philosophy focus on the establishment of requirements, measurement taking, a comparison is made and then the action is taken (Crosby, 1987). He finally iterated that, ensuring quality is the responsibility of every person in an institution hence preaching the Total Quality Management Philosophy which is the focus of this study.

Deming's Approach to TQM (1982)

The theory and method applied by Dr. Edwards William Deming are generally accepted worldwide, as numerous studies have used those proposed principles of TQM. Though Deming did not come out with a clear definition of quality, he believes that it is the customer's needs that determine and define quality. The theoretical essence of the Deming approach to TQM concerns the creation of an institutional system that fosters cooperation and learning for facilitating the implementation of process management practices (Deming, 1986). He asserted that it will eventually lead to the continuous improvement of processes, products, and services as well as to employee management to take the lead in changing processes and systems. While working in Japan in the 1950s, having learned from his experiences in the United State of America, Deming tasked top and middle management to become actively involved in their institutional quality improvement programmes.

Deming introduced the Japanese to a systematic approach in problem-solving which became known as the Deming cycle or PDCA (plan, do, check, action) cycle. The logic of Deming's cycle is based on the belief that every management system begins with planning, followed by necessary controls, then monitoring and examination is next, while, the necessary mechanisms for actions should be final. He iterated that, it is the top management's responsibility to create and communicate a vision to move the institution toward continuous improvement. Deming (1986), also emphasized the importance of identification and measurement of customer requirements, creation of external customer

partnership, use of functional teams to identify and solve quality problems, enhancement of employee skills, the participation of employees, and pursuit of continuous improvement. In this regard, Deming proposed the following 14 points as the principles of TQM (Deming, 1986; Aquilani, Silvestri, Ruggieri, & Gatti, 2017).

1. Create constancy of purpose towards improvement of product and service, with the aim of in competition. It is the responsibility of management to create an environment of stability and continuous improvement of services through a long-term plan, vision, and mission.
2. Adopt the new philosophy: We can no longer live with commonly accepted levels of delays, mistakes, defective workmanship. The first point could be achieved if the management adopts the new philosophy of change, commitment, and dedication to continuous improvement. There is the need to replace the old management procedures which are ineffective in today's business environment with the new method of management.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product/service in the first place. There should be a mechanism to check the processes and systems rather than waiting until the product or service is done before detecting the non-conformance to the customers' wants. Prevention is better than detection as implies.
4. End the practice of awarding business on the basis of the price tag. Instead, minimise total cost and establish a long-term relationship of loyalty and trust

with customers. Avoid doing selection based on one particular criterion. An institution with more diversified programmes will survive more than those looking at one.

5. Continuous improvement: Improve constantly and forever the system of production and service. Deming believes in quality out of obstacles of administration, and focusing on the human resources aspect.
6. The need to Institute training for the employees on the job, by the establishment of educational programmes and training of internal customers.
7. Institute leadership: The aim of supervision should be to help internal customers to do a better job. New management methods required and managers should lead, guide and support staff properly.
8. Drive out fear, so that everyone may work effectively for the organisation. That will help remove fears from working staff in the case of new eliminate punishment and establish a safe environment that all ideas will be discussed.
9. Remove barriers that rob people pride in workmanship. Through teamwork, problems associated with the production process could be avoided.
10. Eliminate slogans, exhortations, and targets for the workforces that ask for zero defects and new levels of productivity. There is the need to go beyond achieving quantitative goals and hammer on quality. Eliminate work standards (quotas) and management by objectives, substitute leadership instead.
11. Remove barriers that rob people in management and the hourly workers of their right to pride of workmanship.

12. Institute a vigorous programme of education and self-improvement, to ensure the acquisition of new skills and good execution both for workers, middle and top management. Management is to have a long term commitment to the implementation of all the above-mentioned points.
13. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job and therefore by creating a structure in top management.
14. Management of an institution should define an overall quality framework, which allows for the successful implementation of and compliance with his previous 13 points. Management is required to organise itself as a team to implement the quality management system. (Deming, 1986; Anastasiadou, 2015).

In conclusion, the theory of Deming emphasised on the management commitment and other principles of TQM which informed the study focus of evaluation the TQM practices being practiced in the University institution, whether it is in conformity to the laydown principles of the Quality experts.

Feigenbaum Approach to TQM (1983)

Dr. Armand Vallin Feigenbaum (born in 1919) can be designated as the originator of the concept of total quality management. Feigenbaum's concept of Total Quality Control is initially made in Japan quality system (Feigenbaum, 1991). Perhaps, the origin of the term TQM could be a substitution in his previously used term of Total Quality Control (TQC), the word "control" by "management" with the reasoning that quality is not just a matter of control, it has

to be managed. He emphasised that the term “control” is sometimes understood as meaning control over the workforce activities, and this is clearly not the aim of TQM (Neyestani, 2017). Feigenbaum (2002), defined TQM as an effective system for integrating the quality development, quality maintenance, and quality improvement efforts of the various units in an organisation so as to enable production and service at the most economical levels which allow for full customer satisfaction. According to him, effective quality management consists of four main stages, namely:

- i. Setting quality standards;
- ii. Appraising conformance to these standards;
- iii. Acting when standards are not met;
- iv. Planning for improvement in these standards.

Feigenbaum developed his approach to TQM, based on the elements like management of quality; the system for total quality; management strategies and quality; engineering technology and quality; statistical technology and the application of total quality in the organisation. Feigenbaum contributed two new aspects to the concept of quality. First, he iterated that, quality is the responsibility of everybody in the organisation ranging from top management to the unskilled worker. TQM shall provide the fundamental basis of a positive commitment to quality for all employees of the business organisation, from management to junior workers and it involves everyone.

It is the total participation of all employees and the total integration of all the Institution’s technical and human resources that will lead to the long-term

success of an organisation. Feigenbaum believed that TQM is the most effective method for integrating the various quality activities of multiple groups in an organization while enabling products and services to deliver customer satisfaction at its most economical level. Furthermore, he believed that in the typical non-TQM organisation environment, there is so much extra work being performed in correcting mistakes that there is essentially a “hidden” plant within the factory. Most importantly, he believed that quality is everyone’s job, and without upper management actively and visibly involved, no one would do it.

Feigenbaum (2002), emphasized that efforts should be made toward the prevention of poor quality rather than detecting it after the event. He argued that quality is an integral part of the day-to-day work of the line, staff and operation of a firm. There are two factors affecting product quality: The technological, which constitute the machines, materials, and processes. Second, is the human aspect, that is, management and staff. Of these two factors, the human aspect of service delivery is of greater importance by far. The fact is, managing the human aspect well could transform all of the other factors of production. Feigenbaum considered top management commitment, employee participation, supplier quality management, information system, evaluation, communication, use of quality costs, use of statistical techniques to be an essential component of TQM.

Secondly, Feigenbaum recognised that the costs of non-quality have to be categorised if they are to be managed. Costs of control and costs of failure of control have to be minimised by a quality improvement programme. Feigenbaum stressed that quality did not mean the best performing or the best technical option.

Instead, it means the best for the customer's usage. The following tenets sum up the essences of Feigenbaum's system of TQM:

1. Quality is an institution-wide process.
2. The customer defines quality.
3. Effective quality requires both individual and team effort.
4. Quality is a management philosophy.
5. Quality and innovations are mutually dependent.
6. Quality is an ethical standard.
7. Quality requires continuous improvement.
8. Quality is the most cost-effective method for improving productivity.
9. For quality to work properly, it must be implemented as a total system and involving both customers and suppliers.

In conclusion, Feigenbaum's ideas totally informed a quality-oriented institution to adopt TQM approaches. His theory emphasised on the TQM principles needed to be practised in any institution focusing on customer satisfaction. The total evaluation of TQM implementation should, therefore, be based on these set of tenets being provided.

Ishikawa Approach to TQM (1985)

With regard to the works of Juran and Deming, Kaoru Ishikawa (born in 1915) substantially influenced the Japanese understanding of quality. Ishikawa became known through his work in particular, on the four aspects of TQM, namely, quality circles; the question of continuous training; the quality tool "Ishikawa diagram" and the quality chain (KruÈger, 2001).. His approach to

TQM comes very close to today's understanding of TQM. According to Ishikawa, to practice quality control is to develop, design, produce and service a quality product or service which is most useful, and always satisfactory to the consumer. To meet this goal, everyone in the organisation must participate in and promote quality control, including top executives, all divisions within the organisation and all employees (Ishikawa, 1985; KruEger, 2001).

In this definition, Ishikawa covers a number of key elements of total quality. TQM emphasises a clear customer orientation, both internal and external. The needs of the customer have to be satisfied. TQM is not limited to the quality managers or offices, it rather involves all units within the business organisation. The top management has to lead by example and to demonstrate actively that they are serious about quality. TQM involves everyone within the organisation; every internal customer (staff) should contribute his or her ideas of how to improve the working processes.

Ishikawa considers the implementation of quality circles as an effective way of getting the bottom floor involved in the quality issue. In the early 1950s, Ishikawa and the Union of Japanese Scientists and Engineers started to organise training programmes for shop-floor supervisors (Sallis, 2014). They were initially called "Workshop Quality Control Study Groups". In April 1962, these groups were renamed "Quality Control (QC) Circle" activities. Since that time, this concept has spread rapidly in Japanese industry. It became one of the important reasons for Japan's business success and has been exported worldwide. A quality circle is a voluntary group of six to eight employees from the same Department.

They meet regularly in order to discuss aspects of their immediate job environment. It is the aim to improve the work processes these workers are responsible for. Thereby the full expertise, job knowledge and human capabilities of each employee can be fully used. The entire human resources are drawn out. This involvement increases and strengthens the commitment of the individual employee to the quality objectives of an institution (KruÈger, 2001). This involvement of all employees in the company's problem-solving process requires continuous education and training of everyone in the company. Ishikawa claims that TQM "begins with education and ends with education" (Dale, Bamford, & Van der Wiele, 2016; Ishikawa, 1989; KruÈger, 2001). Because the workforce of a business organisation is constantly changing, Ishikawa argued that, when new employees are starting, education and training must be continuous. The widening of understanding which Ishikawa undertakes is remarkable. He describes the importance not only of meeting the requirements of the external customer but also of paying attention to "internal" customers and internal relationships. He develops a continuous line of internal customer relations.

Even though Deming, Juran, Crosby, and Feigenbaum are the most famous of the quality experts (gurus), it was Ishikawa who laid the foundations of TQM by initiating a Company-Wide Quality Control (CWQC) system. His vision for CWQC held that quality was not just about the conformance or performance of the product, but also included after-sales service, quality of management, the organisation itself and quality of the individual. He believed that quality improvement is a continuous process that could always be taken one step further.

He emphasised that quality is important throughout the product's life cycle. Ishikawa believed that the creation of standards is important, but did not believe that they were the ultimate source of decision making. Rather, it is customer satisfaction which he endorsed that, standards should be constantly evaluated and changed to ensure customer satisfaction.

Juran's Approach to TQM (1988)

Dr. Joseph Moses Juran lectured in the 1950s in Japan and was the first to broaden the understanding of quality control and TQM, emphasising the importance of the managerial aspect. Where Deming advocated major changes to an organisation's culture, Joseph Moses Juran believed in working within the organisation's existing system to improve quality. His approach focused on fitting quality changes into the institutions' strategic planning process. Juran believed that the main quality problems are due to management rather than workers. The attainment of quality requires activities in all functions of an organisation. Organisation-wide assessment of quality, supplier quality management, using statistical methods, quality information system, and competitive benchmarking are essential to quality improvement.

Juran's approach places emphasis on teamwork which can promote quality improvement, improve communication between management and employee coordination, and improve coordination between employees. He also emphasized the importance of top management commitment and empowerment, participation, recognition, and rewards. According to Juran, it is very important to understand customer needs. Juran's main contribution was that quality control must be

conducted as an integral part of the management function. It thus becomes increasingly necessary for management to delegate. Juran argued that managing quality issue need to be delegated to the subordinate hierarchy. Managing quality is no longer considered to be vital for the top management of an institution to participate personally.

The main tenets of Juran's philosophy are that there is an optimal level of quality, based upon a trade-off between quality and costs. Juran believed that the definition of quality has something to do with the acceptability of the products or services which has a direct connection with customer satisfaction (Stefanatos, 2000). Juran's argument was that quality is not for free and it is the management which is 80 percent responsible for continuous improvement of quality (Juran, 1992; Juran & Gryna, 1993).

This progressive removal of the organisation's management from managing the quality issue led to negative effects on quality. In the end, nobody in the company felt responsible for quality. It is the responsibility of management to establish a Quality Council. This Council plays a central role in coordinating the company's various activities regarding quality; for instance, quality improvement teams, TQM awareness activities, and training programmes. Moreover, management should establish a Quality Policy. Quality policies are guides to managerial actions. The management of the company has to identify the need for quality policies, to assign the responsibility for preparing a draft, to review the draft, to approve the final version, and to implement the quality policy.

Since the worker orientates, Juran finally advocated for a company-wide cultural shift.

Juran considered quality management as three basic processes called the Quality Trilogy: quality planning, quality control, and quality improvement. In his view, the approach to managing quality consists of having the periodic identification of quality issues and setting of quality objectives, thus planning; acted upon by the process of quality control; the issue requires a different process, called, quality improvement which is traceable to an inadequate quality planning process (Ruben, 2018). Recognising the interdependent nature of business processes, customer feedback is one of the constructs to be considered in quality evaluation.

According to Juran, it is very important to understand customer needs. Identifying customer needs requires more vigorous analysis and understanding to ensure the product meets customers' needs and is fit for its intended use, not just meeting product specifications (Johari & Zainab, 2017). TQM is the system of activities directed at achieving delighted customers, empowered employees, higher revenues, and lower costs (Juran & Gryna, 1993). Juran believed that the main quality problems are due to management rather than workers. Juran's ten steps to quality improvement are listed as follows:

1. Build awareness of the need and opportunity for improvement.
2. Set goals for improvement.
3. Organize to reach the goals (establish a quality council, identify problems, select projects, appoint teams, designate facilitators).

4. Provide training.
5. Carry out projects to solve problems.
6. Report progress.
7. Give recognition.
8. Communicate results.
9. Keep score.
10. Maintain momentum by making annual improvement part of the regular systems and processes of the company.

Outcome of the Quality Experts (Gurus) Theories that Informed the Study

Crosby (1979); Deming (1982); Feigenbaum (1983); Ishikawa (1985) and Juran (1988) can be considered as the most important experts (gurus) of the quality management movement. In summary, a lot could be inferred from the established theories of the five quality experts, regarding the total evaluation of TQM implementation. Their approaches are seen as primarily focused on securing the competitiveness of an institution by making full use of its resources. The main ideas of the quality experts indicated their different approaches to ensure quality yet, they have something in common. Nevertheless, the principles and practices of TQM proposed by these quality experts do provide a better understanding of the concept of TQM, its implementation and therefore underpin the total evaluation of TQM practiced being practised in education institutions.

Deming was opposed to some of the TQM elements like “zero defects” and “quality costing”, however, he was considered by many authors as one of the main supporters of the TQM concept (Davis & Fisher, 1994, Tamimi & Gershon,

1995). Crosby and Deming were preaching on the continuous improvement and customer satisfaction which constitute the main focus of TQM philosophy. Feigenbaum believed that all Departments in an organisation has some responsibility for the achievement of quality. His concept of Total Quality to be managed instead of control made his definition of TQM laudable, even though he did not include some of the elements like employee empowerment and teamwork that are now considered among the TQM principles. Ishikawa was mainly responsible for shaping the Japanese quality system focuses on the Company-Wide Quality Control (CWQC) which aims at getting all the units of an organization working together to ensure quality (Ishikawa, 1985).

In considering the Feigenbaum's and Ishikawa's explanations of the quality management concept, it can be seen that there are no major differences. Looking at the work of Feigenbaum 1983, it can be seen that the focus was on the participation of employees and management responsibility for improving quality. The Ishikawa's term "CWQC" also includes four principal elements, namely: the involvement of functions other than manufacturing in quality activities; the participation of employees at all levels; the goal of continuous improvement and careful attention to customers' definitions of quality (Garvin, 1988). TQM, therefore, has developed from the Feigenbaum's TQC and Issakawa's CWQC concepts inclusion of appropriate management theory as demonstrated by the TQM philosophy mentioned earlier.

English (1996), associated Juran with TQM, while Drensek and Grubb (1995), saw Crosby as a TQM theorist. Hackman and Wageman (1995) were of

the view that Deming, Ishikawa, and Juran are founders of the TQM philosophy since it was found in their works. Surprisingly, they do not mention Feigenbaum, the originator of the term TQC, which has many similarities with the term TQM. Their contributions offer a solid foundation for conducting this total evaluation of TQM implementation study in a University with seventeen years' experience in quality matter and issue. Many organisations have introduced TQM needs to follow the ideas of these quality experts (gurus). Their approaches are implemented as an acceptable standard and institutional management is considering the relevance of quality experts' (gurus') approach to the institution's needs and values. Even though their approaches to TQM are not totally the same, they do share some common points clearly stated as follows:

- a. Top-managements have the responsibility for commitment, leadership, empowerment, encouragement, and the appropriate support to technical and human processes. It is their responsibility to determine the environment and framework of operations within an institution. It is imperative that management brings in the participation of their staff in quality improvement, and develop a quality culture by changing perception and attitudes toward quality.
- b. The strategy, policy, and institution-wide evaluation activities are emphasised.
- c. The importance of internal customers (staff) education and training is emphasised in changing employees' beliefs, behaviour, and attitudes; enhancing employees' abilities in carrying out their duties.

- d. Internal customers should be recognised and rewarded for their quality improvement efforts.
- e. It is very important to control the processes and improve the quality system and design. The emphasis is on the prevention of product defects, not inspection after the event.
- f. Quality is systematic institution-wide activities that involve all customers and management.

The five quality experts have contributed and formed a number of important ideas to today's understanding of TQM. Although, Deming himself never used the term TQM, his attempt to recognise a holistic quality management system supported the quality improvement systems (Vinzant & Vinzant, 1996). Again, the role of the human resource issue in an organisation was not fully covered by Deming, his 14 points are widely recognised as the fundamentals of TQM which can apply to any organisation, being manufacturing or service industries. In adopting TQM, it is imperative to note that, successful implementations of TQM in educational institutions have been widely recognised (Sohel-Uz-Zaman, & Anjalin, 2016). Juran also did not use the term TQM in his first books, however, he uses less than a page in his later book “a History of Managing for Quality” to explain TQM and is considered to be the best definition of TQM found in the “criteria used to judge the applications for the United States’ Malcolm Baldrige National Quality Award” (Juran, 1995). In a similar manner, Crosby never mentioned TQM in his books “Quality is Free” (1979), “Quality without tears” (1987) and “Completeness: Quality for the 21st century” (1992).

The greater expansion of university education opportunities, the change management of higher educational systems, the new demands for tighter linkages between universities and economic development, and the emerging international competition among universities are the causative factors in the modern concern for quality management systems in higher education. These dynamics are always drawing public attention in every country to the relative efficiency or value for money of tertiary education. These concerns of the varied institutional customers with efficiency, variation, and specialisation are very similar to the concerns that motivated the five quality experts to seek to improve quality in the industries (Yang, Tai, & Kuo, 2016).

According to De Jager and Nieuwenhuis (2005), TQM was initially developed within the manufacturing environment, yet, the benefits are equally applicable to service institutions such as Banking, Insurance, and Education (which include Universities). The TQM theory elaborated by quality experts to better the management of manufacturing industries could also be applied to the education sector on condition that the particular institution should be well understood and adapted to what tenets are applicable to the education sector. When applying TQM in education, we must take into account not only the content but also the system, the environment, the style and the processes that are necessary. Obviously, the study literature has shown tremendous adoption of TQM principles by manufacturing industries, many service industries like insurance, banking, tourism, and education did not opt-out.

Although the educational institution is not a "factory" and the student is not "a manufactured product", the TQM theory relies on the philosophy that starts from the belief that all humanity could be educated, and that they could be made to do good things and deserve respect. The way in which people respond to the managerial actions is of utmost importance for the success of TQM. In this regard, the quality gurus lay emphasis on the need for managers to understand the fundamental principles of the TQM, so as to find out how to attract them. At the beginning of the 1990s, the TQM philosophy that aims for customer satisfaction and continuous improvement in the processes of the organisation was introduced into Higher Education Institutions (HEIs) quality management systems (Pratasavitskaya & Stensaker 2010; Sallis, 2014). The strategic planning of quality is one of the constructs of a programme for improving quality in view of implementing the principles of TQM.

According to Lemark and Reed (2000), whenever institutions implement TQM concept, they increase the efficiency and effectiveness of the institutional performance. The implementation of the general principles of TQM in HEIs has been strongly advocated by some authors including (Sallis, 2014; Lemark & Reed, 2000; Pratasavitskaya & Stensaker, 2010). They all believe that TQM is to some extent applicable to education. TQM, as defined by Demings (1995); Sallis (2002) and Tannock (1991), is a philosophy of working, and is concerned with a process of continuous improvement, based on human factors, teamwork, and motivation, with customer satisfaction as driven-objective from the highest level in an institution. These elements (principles) are considered so essential to TQM

that many institutions define them as a set of core values and principles on which the institution is to operate. The methods for implementing this approach come from the teachings of Philip Crosby, William Edwards Deming, Armand Feigenbaum, Kaoru Ishikawa and Joseph Juran (Sallis, 2014).

TQM principles are relevant to a dynamic and changing environment of any organization which is a characteristic of modern Higher Education Institutions (HEIs) as observed by (Koch & Fisher, 1998; Houston, 2007). In two different studies by Venkatraman (2007), and Mehta, Verma, and Seth (2014), it has been found that TQM is a managerial instrument to resolve the issues associated with services as well as conforming to the standard of academic institutions. According to Williams and Cappuccini-Ansfield (2007) and Zakuan *et al.* (2012) continuous quality improvement; quality consistency; participation of academics, students and non-academic staff; satisfaction of the clients; and the existence of management procedures that reinforce quality are a number of quality management programs that nobody would consider irrelevant in the context of higher education.

Relevancy of the Principles, Tools, and Techniques of TQM

The Deming's 14 points and his system of plan, do, check, act/study cycle, Crosby's absolutes of quality management (conformance to requirements, prevention, zero defects and cost of quality), Feigenbaum's three steps to quality (quality leadership, modern quality technology, and organizational commitment, Ishikawa's cause and effect diagram and his terminology of TQC and Juran's quality trilogy (planning, control, and improvement) constituted the most

important aspects of the TQM framework that quality gurus have recommended. Although there were different opinions about the concept of TQM practices, what these gurus came out with, now constitute what is called the TQM principles (“soft side” of TQM) and TQM tools and techniques (“hard side” of TQM). Despite the divergence of views on what constitutes TQM, there are a number of common elements running through the various definitions (Fotopoulos & Psomas 2009).

Fotopoulos and Psomas (2009) first identified “soft side” and “hard side” of TQM, in their study, where the “soft side” refers to management concepts and principles such as leadership, employee empowerment, and quality culture. The hard side of TQM deals with quality improvement tools and techniques. They suggested that “soft side” of TQM includes: leadership, strategic quality planning, employee management and involvement, supplier management, customer focus, process management, continuous improvement, information and analysis, and knowledge and education, and the “hard side” comprise quality tools and techniques. Shahin and Dabestani (2011) continued the work of Fotopoulos and Psomas (2009) and proposed a framework based on the soft side of TQM. Many studies have proven that the soft side of TQM (principles) is more important in quality improvement of institutions (Abdullah, Uli, & Tari, 2009; Arumugam, Mojtahedzadeh, & Malarvizhi, 2011; Rahman & Tannock, 2005; Lewis, Pun, & Lalla, 2006). However, they also asserted that soft side TQM elements need time to flourish and should be supported by the hard side of TQM elements.

In a study literature, Sureshchandar, Rajendran, and Anantharaman (2002), came out with 17 TQM principles which include: Top-management commitment (TMC), Customer Focus (CF), Training and Education (TE), Continuous Improvement and Innovation (CII), Supplier Management (SM), Employee Involvement (EI), Management Information and Analysis (MIA), Process Management (PM), Quality Systems (QS), Benchmarking (BM), Quality Culture (QC), Human Resource Management (HRM), Strategic Planning (SP), Employee Encouragement (EE), Teamwork (TW), Communication (COM) and Product and Service Design (PSD).

Sila and Ebrahimpour (2002) studied the evolution of the 347 survey-based research articles published between 1989 and 2000; their findings revealed that the most frequently covered TQM principles are applicable to both the manufacturing and service industries. TQM principles being practiced and investigated by previous researchers are also shown in Table 6.

Table 6: Most Covered TQM Principles used in Previous Research

TQM Principles	Number of times covered in the research
1. Customer focus and satisfaction	285
2. Employee training	260
3. Leadership and top management commitment	244
4. Teamwork	231
5. Employee involvement	220
6. Continuous improvement	216
7. Quality information and performance measurement	213
8. Flexibility	191
9. Strategic planning	181
10. Process management	174
11. Employee appraisal, rewards, and recognition	141
12. Employee empowerment	131

Sources: Sila&Ebrahimpour, (2002)

Thus, many of the studies conducted previously used these same factors, or in combination with others to better understand the implementation of TQM principles.

However, this current study went beyond the number indicated in Table 6. The TQM principles like employee training, teamwork, employee involvement, employee empowerment, and employee appraisal, rewards, and recognition were all considered under Human Resource Management as one principle. Others included in the current study which was not specifically mentioned in Table 6, are Tangibles of service (Servicescapes); Social Responsibility; Benchmarking; Internal Customer (Staff) Satisfaction and Innovation.

Service quality has become a key concern in higher education. Quality is one parameter that makes differences among institutions and forms the basis of their survival (Aly & Akpovi, 2001). Defining a way to measure quality in higher education is a complex issue (Rouf, Rahman & Uddin, 2016; Huq, 2005). As services offered by education are intangible and difficult to measure, yet, implementing TQM principles bring an institutional transformation change as far as human aspects are concerned (Lakhe & Mohanty, 1994) With regard to this, it is necessary to understand the customers of Higher Education and their needs from the institutions when TQM is being implemented. TQM is a philosophy of working and largely concerned with a process of continuous improvement, based on human factors, teamwork, and motivation, with customer satisfaction as driven-objective from the highest level in an institution (Tannock 1991; Demings, 1995; Sallis, 2014).

There are some attributes of educational institutions that have implemented the principles of TQM and are particularly different from those that have not introduced them. The TQM institution could be differentiated from the one not practicing based on the following:

- a. Optimisation of the activity of faculties: Each faculty, starting with deanships and professorships must work taking into account well-defined standards of quality, respectively written procedures to help them organise the whole activity.
- b. Vertical alignment: Every institutional worker must understand the policy of the university in the domain of quality and its mission. The need for quality in Higher Education is experienced by everyone involved in it.
- c. Horizontal alignment: There must not be competition between different faculties, since all from the same university. There should be certain functional mechanisms to solve efficiently any problem, especially if the system of quality management is implemented.
- d. A single command for all activities: Key-procedures for all syllabuses or administrative programmes must be organized so that all processes should be controlled by just one series of commands.

The elaboration of the procedures must be done starting from the question: Who is the customer of each process? In education, TQM has a significant role in empowering internal customers to improve what the students learn and the way they learn. The creation of a culture of quality is an essential condition for implementing the principles of TQM in a university. The managerial staff is

responsible for creating such culture so as to obtain performance in the quality of educational services; performance can rest above similar service offered by the competition.

In the education field, the process of teaching/learning and other services must be regarded as the essential mission of the institution, one that has to be continually improved. The fundamental philosophy of managerial aspects in education and teaching must remain the same over a long period of time, irrespective of trends and of changes taking place in the social environment. In education, TQM should be holistic and should consist of the following seven elements none of which should be missing. The seven elements are philosophy, vision, strategy, aptitudes, resources, rewards, and organization. Each element has a function that must not be omitted. For instance, when there is no philosophy, the system has no results; when vision is missing, there is confusion; when there is a lack of aptitudes, there is cause for alarm; when resources are missing, there is frustration; when there are no rewards, there is bitterness. All functional activities, being it from external or internal customer-groups or institutional management should be involved in quality improvement efforts as have been indicated in the conceptual framework.

Critique of Total Quality Management (TQM)

Despite the existence of several experiences of successful implementation of Total Quality Management in different organisations all over the world, there exists a situation where there are some failures or difficulties to benefit from the implementation of Total Quality Management. In some cases, some have found it

impossible to succeed due to the numerous barriers towards the full implementation of TQM. For example, Wilkinson and Witcher (1991) mention some of the basic barriers of total quality management practices in the United Kingdom (UK), according to a survey of 250 United Kingdom firms. The findings were that few firms appreciate the fact that TQM is a total effort and requires culture change and management behaviour. They mentioned that the segmentation of some organisations, reluctant managers, resistance to change by internal customers and industrial relations are some of the barriers to TQM implementation in the UK, despite the benefits TQM brings. TQM is a long-range organizational transformation that requires building new competencies and destroying existing ones. Thus, it involves high risk and requires high commitment (Lam & Reshef, 1999). Lam and Reshef render the successes of TQM as long-term achievements because once the TQM as the programme has been launched, the management needs to be updated to avoid a way that threatens the institution's existence.

Moreover, practising TQM means that all employees and management are to be involved in a lot of processes (training, measurement, presentations and team meeting) which are not directly related to the institution's core mission and it puts more strain on employees and management towards achieving the TQM implementation. Again, training and education on continuous improvement programmes are very costly and not feasible in some organisations.

Nwabueze (2001), clarifies some of the barriers to TQM implementation including: resistance to change, which makes it difficult and in some cases

impossible to change organisational culture; lack of management commitment; teamwork and strategic planning which may not well be developed; poor measurement techniques; lack of education and training programmes; high employee turnover and employees' fear of losing their job, especially after receiving training programmes which give them more stress to apply what they have learned and take responsibility toward TQM achievement.

Summary

This chapter has reviewed the literature on the fundamentals of the quality concept, Quality Management System (QMS) and Total Quality Management (TQM), in order to understand the theory informing the conceptual framework. The literature review focused on the various definitions and history of the quality concept, evolution of quality and the quality approaches. Further, how quality is managed and the influence of quality experts (gurus) theories was discussed. The knowledge and ideas that contributed significantly to the philosophy and principles of TQM were also reviewed. A review of the movement towards TQM in developed and developing countries was also discussed to ascertain how far along they are in establishing quality procedures, and also what lessons can be learned and transferred.

CHAPTER THREE

EMPIRICAL LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Introduction

An effort has been made to connect to the present study the previous researchers' contribution to the quality field under review. The review of related literature on the previous research will explain the relevancy of this current study. According to Frankfort-Nachmias and Nachmias (2007), all social, education and scientific research are mostly based on the findings and insights of previous researchers. By implication, the production of new knowledge is fundamentally dependent on past knowledge.

Many research studies have been undertaken in the field of TQM implementation and its associated organisational performance. The evaluation of TQM implementation is still ongoing across the world, especially in the developing countries, which they are lagging behind their counterparts in the implementation of TQM (Tentime, & Solomon 2002; Gilbert, & Sia, 2001; Samat, Ramayah, & Mat-Saad 2006). However, many evaluation studies have been conducted in both manufacturing and service organisations and ascertained the successes and failures of the TQM organisations of which the education sector was not left out.

Studies on TQM Awareness and Implementation in Organisations

Apart from the numerous definitions for quality concept, the number of research studies have been conducted to investigate TQM implementation in

different manufacturing and service organisations (Bohanty & Behera, 1996; Burcher *et al.*, 2008; Cruickshank, 2000; Davis & Fisher, 2002; Guimaraes, 1996; Kaluarachchi, 2010; Reed, Lemak & Mero, 2000; Mohanty & Behera, 1996; Ooi, Arumugam, Teh, Yee-Loong & Chong, 2008; Psychogios, 2007; Psychogios, & Priporas 2007; Mosadegh Rad, 2005; Salaheldin & Mukhalalati, 2009; Silvestro, 1998; Talib, Rahman, Qureshi, & Siddiqui, 2011; Valmohammadi, 2011; Psychogios, Wilkinson, & Szamosi, 2009; Vouzas 1997; Vouzas & Psychogios, 2007).

These studies aimed to investigate the implementation of TQM in various organisations and its associated service quality delivery with the view of improving performance. The studies revealed that institutional management' awareness of the TQM philosophy is essential to the success of TQM implementation. The previous studies on TQM used either the quantitative or qualitative procedures or both, which they all focused on TQM as a managerial philosophy (Vouzas & Psychogios, 2007). Guimaraes (1996) was of the view that, in order to attain successful implementation, several aspects of TQM should be understood clearly and well in advance. Obviously, a limited number of rigorous research studies have been done toward assessing the awareness of TQM and understanding of the concept of TQM in the service industries.

Psychogios, and Priporas (2007), in their study, address management awareness and familiarity with Total Quality Management (TQM). Eighteen (18) semi-structured, in-depth interviews were conducted with managers working in a variety of service organizations in Greece. The major argument of the study is that

although the acronym TQM and some of its concepts and practices are known by a range of public and private sector managers, actual awareness of its “soft” side of TQM (TQM principles) is often superficial, and managers have a relatively poor understanding of it. TQM is neither resisted nor directly absorbed by them, but they tend to see it from the technical point of view, being aware only of the importance of its “hard” aspects (TQM tools and techniques).

Vouzas and Psychogios (2007), conducted another study on cultural forces that affect the awareness and application of TQM. The study was performed on 73 interviewees conducted with managers of Greek public and private organisations. They analysed the rationale and development of a measure that can be used in assessing managerial awareness of TQM in the Greek service industry. The analysis provided a distinctive and consistent measurement of the “soft” side of TQM. They reported that there are two antithetical business cultural forces which are the conservatism and reformism that affects the awareness and application of TQM concepts.

Psychogios, Wilkinson, and Szamosi (2009), also made further study thereafter in Greece. The purpose of their study was to address the generic research question of the effects of the awareness and application of the Total Quality Management (TQM) approach on management performance. It was a further study of the one performed by Vouzas (1997), which reported that particular interest on the awareness and perceptions of management on TQM is related to middle management level. The study focuses on TQM effects on Middle Management self-sufficiency. Through a multimodal research approach

based on a combination of quantitative and qualitative methods, it is argued that the implementation of TQM programmes has a positive impact on Middle Management self-sufficiency. Nevertheless, it is related mostly to the tools and techniques rather than the TQM principles. The strong impact of TQM practices on middle management responses to aspects related to their work, as compared to the small impact of the TQM principles implies a pragmatic view of TQM. Management perceive a somewhat linear road to quality improvement through the use of tools and techniques and giving less importance to the TQM principles and concepts, such as empowerment and total employee involvement.

Mohanty and Behera (1996), conducted their study and underlined the dominance of the service sector in the future global economy and explained the characteristic features and elements of a service organisation. They explained that with the growing maturity of society with respect to education, culture and standards of living, the user expectations and demands for improved quality of service are increasing. This is part of the pressure causing service organisations to explore total quality management (TQM) as a means of driving quality improvement into all their activities.

Burcher *et al.* (2008) compared and contrasted the career experience and development needs of British and Australian quality managers. They found that quality managers in both countries brought wide functional experience to their roles. Also, British and Australian managers show little awareness in terms of their development needs for a broader background in quality.

Talib *et al.* (2011) in their study conducted the assessment of the awareness of TQM programme in the Indian service industries. By means of a literature review and empirical data collected using a self-administered instrument distributed to selected Indian service organisations, and the awareness of TQM was investigated. The study sampled from the Indian service organizations including health care, information and communication technology (ICT), banking, and hospitality industries. A total of 172 useable questionnaires were included for the final analysis and the data were analysed using descriptive statistical and correlation analysis. The analysis revealed the significance and usage of TQM in Indian service industries. The results also suggested that the Indian service industries are well aware of the TQM principles, though more efforts need to be focused on proper implementation. The findings show stronger familiarity with TQM principles and concepts among Indian service managers and they believe that TQM is a way of guaranteeing high quality products and services.

Studies on the Relationship between TQM and Organisational Performance

Several studies have also looked at the relationship between TQM implementation and organisational performance and the numerous studies in this field establishing a positive correlation between the implementation of TQM and organisational performance (Appiah-Fening, Pesakovic, & Amaria 2008; Al-Marri, Moneim, Baheeg, & Zairi, 2007; Fening, Amaria, & Frempong, 2016; Jun, Cai, & Shin, 2006; Kaynak, 2003; Ketikidis *et al.*, 2006; Kumar, Garg, & Garg, 2011; Lin, Chow, Madu, Kuei, & Yu 2005; Mensah, Copuroglu, & Fening, 2012; Mellahi & Eyuboglu, 2001; Prajogo, 2005; Prajogo & Hong, 2008; Prajogo &

Sohal, 2006; Sadikoglu, & Zehir 2010; Sila, 2007; Tsang & Antony, 2001; Chung Woon, 2000). The argument was that the implementation of TQM practices enhances organisational performance.

Appiah Fening *et al.* (2008) investigate the relationship between quality management practices and Small and Medium Enterprises (SMEs) performance in Ghana. They examine the relationship of each of the Seven TQM principles with the five SME performance indicators of profitability, customer satisfaction, sales growth, employee morale, and market share. A survey comprising 80 questions was administered to a sample of 200 small firms employing fewer than 50 workers and covering all sectors in Ghana. The questionnaire asked the participants to indicate on a five-point Likert scale the extent to which each quality management practice was evident or was practiced of those that influence their firms' performance. Statistical analyses were conducted using SPSS to calculate descriptive statistics, reliability analysis, correlation and regression. Overall, their study found a number of significant relationships between the quality management variables and firm performance. It also found support for the argument that quality management practices improve organisational performance in small businesses in any part of the world. These findings have added to the body of knowledge that quality management practices improve organizational performance.

Jun *et al.* (2006) in their study, investigated the transferability of TQM practices to offshore manufacturing firms by validating direct and indirect relationships among top management commitment, Human Resource focused on

TQM practices, employee satisfaction, and employee loyalty. The purpose of their study was to isolate critical TQM practices that would enhance employee satisfaction and loyalty among maquiladora workers. The on site surveys were conducted at two leading maquiladora firms that have long implemented TQM.

The statistical results indicate that employee empowerment, teamwork, and employee compensation have a significant and positive influence on employee satisfaction. The improved employee satisfaction leads to a higher level of employee loyalty. In addition, the results indicate that the effects of top management commitment on employee empowerment and teamwork are significantly mediated by employee training, implying that the success of employee empowerment and quality teams can be dependent upon the level of employee training.

Prajogo and Sohal (2006), studied the fit of total quality management (TQM) practices in mediating the relationship between organisation strategy and performance. By examining TQM in relation to organisation strategy, the study seeks to advance the understanding of TQM in a broader context. It also resolves some controversies that appear in the literature concerning the relationship between TQM and differentiation and cost leadership strategies as well as quality and innovation performance. The empirical data for this study was drawn from a survey of 194 middle and senior management from Australian firms. The analysis was conducted using structural equation modeling (SEM) technique by examining two competing models that represent full and partial mediation. The findings indicate that TQM is positively and significantly related to differentiation

strategy, and it only partially mediates the relationship between differentiation strategy and three performance measures (product quality, product innovation, and process innovation). The implication is that TQM needs to be complemented by other resources to more effectively realize the strategy in achieving a high level of performance, particularly innovation.

Lin *et al.*, (2005) in their study identified through the use of empirical data collected from Taiwan and Hong Kong, the factors that influence supply chain quality management. The data was collected from practicing managers. The findings for the two sets of data were consistent. The data showed that Total Quality Management (TQM) practices are significantly correlated with the supplier participation strategy and this influences tangible business results, and customer satisfaction levels.

Sila (2007), used the institutional theory and contingency theory as the basis to test a number of such formulate propositions of the potential effects of contextual factors on TQM and TQM and performance relationships. Using the survey data, the effects of five contextual factors that comprises; three institutional factors and two contingency factors on the implementation of TQM practices and on the impact of TQM on key organisational performance measures were analyzed within a TQM and performance relationships model framework. The results show that the implementation of all TQM practices is similar across subgroups of companies within each contextual factor. In addition, the effects of TQM on four performance measures, as well as the relationships among these measures, are generally similar across subgroup companies.

Fening *et al.*, (2016), examined the linkages between total quality management and organisational survival in manufacturing companies in Ghana. The quantitative approach and the survey method of collecting data were used. The questionnaire was administered through the face-to-face method of collecting data. A sample of 250 manufacturing firms within the metropolis of Kumasi, the second largest city in Ghana was selected. A Structural Equation Model (SEM) was proposed to examine the relationships between the seven organisational linkages and five practices of TQM impact on the Ghanaian companies. The findings showed significant positive effect of the seven Total Quality Management (TQM) elements on organisational performance. This study demonstrated that Ghanaian and foreign owned manufacturing companies believe that total quality management is a key-contributing factor to a firm's survival.

Sadikoglu, and Zehir (2010), studied the relationship between Total Quality Management (TQM) and firm performance. The objective of this study was to investigate the relationships between TQM practices and multiple performance measures and to examine the mediating effects of employee performance on the relationship between TQM practices and firm performance. The study used a cross-sectional survey methodology and questionnaires were sent to 500 randomly selected ISO 9001:2000 certified firms in different industries in the Marmara region in Turkey in 2005 and 2006, while 373 usable questionnaires were obtained. After confirming the validity and reliability of the latent variables with confirmatory and exploratory factor analyses, the results of the study support the proposed hypotheses that employee performance and

innovation performance partially mediate the relationship between TQM practices and firm performance. The study also provides managerial and research implications, research limitations, and suggestions for future studies.

Ketikidis *et al.* (2006) investigated the relationship between TQM implementation and organisational performance. Their study was to determine the critical factors of total quality management (TQM) and to measure their effect on organisational performance of Small and Medium Enterprises (SMEs) operating in Turkish textile industry. Data for this study was collected using a self-administered questionnaire that was distributed to 500 SMEs in textile industry in the city of Istanbul in Turkey selected randomly from the database of Turkish Small Business Administration (KOSGEB). Of the 500 questionnaires posted, a total of 163 questionnaires were returned. Using exploratory and confirmatory factor analyses, seven empirically validated dimensions of TQM were identified.

The structural equation modelling technique was employed to investigate the relationship between the implementation of TQM practices and organisational performance. Data analysis reveals that there is a strong positive relationship between TQM practices and non-financial performance of SMEs, while there is only weak influence of TQM practices on financial performance of SMEs. With only a mediating effect of non-financial performance that the TQM practices has a strong positive impact on financial performance of SMEs. The sample is restricted to only a single region and a single industry, so it would be strongly recommended that data be gathered from various parts of Turkey including both various manufacturing and service industries. /implications

Mensah *et al.* (2012) studied on the Total Quality Management (TQM) in Ghana, by looking at the critical success factors and model for implementation of a quality revolution. They aimed to identify the critical success factors and challenges of TQM implementation and propose a model for the successful implementation of a quality revolution in Ghana. The approach in this study was to review existing literature followed by case studies of 15 firms. Three employees the quality manager or director and any two other staff were interviewed to identify the critical success factors that would be appropriate for the implementation of a quality revolution in Ghana as well as the main challenges of quality management they face. Findings revealed that top management commitment, empowerment and involvement of employees, resource availability, competition and increased customer awareness, and a well-functioning quality network are the major factors that are critical and essential if any TQM programme is to be successful. Three main problems: management resistance, employee resistance, and resource paucity were identified as principal impediments to TQM programmes.

Prajogo and Hong (2008), studied the effect of TQM on performance in Research and Development (R&D) environment from the South Korean firms' perspective. Their paper presented an empirical study, which examines the effectiveness of Total Quality Management (TQM) practices in R&D environments by demonstrating the effect of TQM practices on R&D performance in terms of product quality and product innovation. The study used data from 130 R&D divisions of Korean manufacturing firms. Two research questions were

posed, with the first pertaining to the implementation of TQM principles in R&D environments and the second focusing on the effect of TQM on R&D performance. TQM practices were measured by six criteria of Malcolm Baldrige National Quality Award, and R&D performance measures consist of quality and innovation aspects. Using structural equation modelling techniques, the findings showed the integration of the implementation of TQM practices in R&D divisions as well as the significant contribution of TQM to R&D performance. These findings suggest that TQM as a set of generic principles can be adapted in environments other than manufacturing or production areas.

Ooi *et al.* (2008) investigated the relationships between TQM principles and employee attitude in a large Malaysian organization. The purpose was to investigate the multidimensionality of total quality management (TQM) practices and its relationship with production workers' job satisfaction in the Malaysian electrical and electronics (E&E) industry context. Data for this study were collected using a self-administered questionnaire that was distributed to 520 production workers in three major E&E organizations in Malaysia. Out of the 520 questionnaires posted, 173 usable questionnaires were returned, yielding a response rate of 33.26 percent. The correlation and multiple regression analyses were applied to test the theoretical model and the relationship between TQM practices and job satisfaction. The results revealed that not all TQM practices enhanced production workers' job satisfaction. Only organization culture and teamwork showed a positive relationship with the production workers' job satisfaction.

Al-Marri *et al.* (2007), examined the critical success factors of total quality management (TQM) implementation in the United Arab Emirates (UAE) banking sector involving 250 banks in UAE that have embarked on TQM successfully. Unlike this current study where the mixed method was used in the education context, their data was quantitatively collected from the banking institutions. Their findings indicated that sixteen factors were found to be critical to TQM implementation success. Nevertheless, the TQM principles they considered were also portrayed in my study, namely; top management support, continuous improvement, benchmarking, customer focus, quality system, human resource management, service design, employees, servicescapes, service culture, and social responsibility.

Tsang and Antony (2001), conducted a survey of 25 service companies on TQM in UK service organisations. The results presented focused on 11 critical factors (TQM Principles) of quality management. It was found that customer focus is the most successful driven factor for TQM programs in UK service organisations. Moreover, supplier partnership or supplier management is the least important factor. The outcome depicted that, customer focus is the most successful driving principle for TQM programmes in UK service organisations. Others like continuous improvement, top management commitment, recognition, employee involvement and teamwork were found amongst the highest ranking concerns in these organisations. They also used quantitative methods only contrary to the mixed methods used in this current study. Their investigation was

done in other service industries other than educational institutions. However, they did the ranking of the TQM principles as it was also done in this study.

Chung Woon (2000), conducted a comparative study to identify TQM implementation levels in service and manufacturing organisations. The analysis makes use of secondary data obtained from the pioneer batch of 240 organisations in the Singapore Quality Award programme. The study revealed no significant difference between the two with respect to the TQM principles. The finding was that the service organisations had a lower level of TQM tools and techniques, which is the “hard side” of TQM. There was an indication that the TQM principles are more applicable to service organisations than the hard side TQM. This study focuses on the soft side of TQM which is also found to be applicable to education context. However, the study used the secondary data as compared to this current study which collected primary data for the analysis.

Mellahi and Eyuboglu (2001), investigated the success factors for TQM implementation in the Turkish banking sector. The purpose of their study was to suggest that quality management practices with total quality management (TQM) approach can be implemented successfully in developing countries despite high cultural and organizational barriers. On six case studies, to examine the key factors that led to successful TQM implementation in the Turkish banking sector, their findings revealed that successful TQM implementation requires TQM principles more especially the management commitment to TQM. This current study is of the view that educational institutions like banking sector could also be successful in TQM implementation.

In a similar study, Prajogo (2005) and Kumar et al. (2011) studied the implementation of TQM and quality performance in service institutions and manufacturing organisations in Australia and India respectively. Observation made in these two studies was that the implementation of TQM success principles was critically important for both sectors, however, they ranked differently in manufacturing and service institutions. Prajogo (2005) noted that this positive result supports and confirms the applicability of TQM principles and practices in the service institutions in spite of many differences in the nature of operations of service and manufacturing industries. Similarly, this current study has proved that the TQM principles are strongly applicable to the education sector which is also a service institution.

Again, Talib *et al.* (2016) conducted an empirical investigation of relationship between total quality management practices and quality performance in Indian service companies. The empirical data collected using a self-administered instrument distributed to selected Indian service companies, on the awareness of TQM was investigated. A total of 172 useable survey instruments were included for the final analysis. This study sample consisted of a group of selected Indian service companies from healthcare, banking, hospitality industries, and information and communication technology (ICT). The results also suggested that the Indian service industries are well aware of the TQM program, though more efforts to use TQM models and frameworks, and continuously improving for the ongoing TQM practices. They also found eight TQM factors including top management, customer focus, and satisfaction.

Studies on TQM Implementation Successes in Higher Education Institutions

Obviously, managing quality in education could begin at any of the institutional units, as well as the institution in general, similar to that of manufacturing and other service industries (Koch & Fisher, 1998). Total Quality Management (TQM) is one of the most known Quality Management models that have been implemented in HEIs. Since the education sector is considered as a service industry like Healthcare, Banking and Automobile services, operating total quality management system in the sector is necessary and applicable as well (Al-Tarawneh & Mubaslat, 2011). TQM philosophy focuses on continuous improvement of the education services delivered to their institutional customers.

Many education institutions that began the TQM implementation in the early 1990s have had successful stories to tell (Tsinidou, Gerogiannis, & Fitsilis, 2010). For example, the Total Quality Management (TQM) philosophy has been applied to Faculties/Schools and Colleges in the United Kingdom, United State of America (USA) and other European countries (Kanji, Tambi & Wallace, 1999). In the European countries, quality has always been the centre of the action, being regarded as one of the success factors of the Bologna process (Berlin-Communiqué, 2003; Reinalda, & Kulesza, 2006). The practical suggestions for TQM implementation have filled numerous books and research studies (Conca, Llopis, & Tarí, 2004; Demirbag, Tatoglu, Tekinkus, & Zaim, 2006; Fotopoulos & Psomas, 2009; Ishikawa, 1985; Kanji, Tambi & Wallace, 1999; Salaheldin, 2009; Sila & Ebrahimpour, 2005; Vinni 2011;).

The authors and researchers found many informative reports on successful TQM applications in USA Higher Education Institutions (HEIs). In the case of HEIs in the United Kingdom, the progress of TQM is rather gradual, more especially with only a few newly established universities. However, these institutions have benefited from the TQM process similar to their counterparts in the USA, such as improved student performance, better services, reduced costs, and customer satisfaction.

Kanji, Tambi, and Wallace (1999), conducted exploratory research on quality practices at higher education institutions in the USA and Malaysia. The participants of the study were the Quality Directors of each institution. They were sampled from a list of 216 and 294 institutions of Malaysia and USA HEIs respectively. The focus of their study was to examine the implementation of TQM in HEIs and its contribution to the institution's performance and business excellence in both countries. The authors believed that TQM can be used to achieve continuous improvement in educational institutions regardless of whether or not the institutions encounter any challenges. They are of the view that TQM implementation is influenced by certain TQM principles and core concepts that are critical for institutional success. These principles can be regarded as critical success factors as described by Daniel (as cited in Brotherton, 2004). Their research findings were divided into five parts, namely: some general information of institutions and extent of TQM implementation; reasons for TQM; approach to critical success factors; TQM and institutional performance and implementation of quality control circles.

TQM elements have also been applied in education context of Asian countries such as Malaysia, the Middle East, China, South East Asia, Australia and New Zealand (Becket & Brookes, 2007; Mokhtar, Abdul Rahman, Othman & Mat Ali, 2014; Srikanthan & Dalrymple, 2004). For instance, Becket and Brookes (2007), examined the quality management approaches adopted in HEIs in response to three environmental forces identified, namely; political, economics and socio-cultural having 18 common forces driving change (TQM principles).

The countries comprise Australia, China, Hong Kong, India, Japan, Korea, Malaysia, New Zealand, Taiwan, and Central Asia. Their review exercises conducted discloses that the most popular response is the implementation of quality management models developed for the service industry. While there are benefits gained from using these models, they were related predominantly to the efficiency and effectiveness of management functions, which are also reported to encourage a culture of management in higher education institutions. However, the effectiveness of these models in managing the quality of teaching and learning has been questioned. This current study is of the view that evaluation of quality management should be total which includes assessing the quality of teaching and learning the enterprise.

In the case of Africa, TQM has not been practised rigorously, except for some isolated cases. Few attempts of TQM implementation have been seen in some Higher Education Institutions, while the rest are still contemplating on its implementation (Ahmed & Ali, 2016; Ogachi, 2009; Strydom, & Strydom, 2004). It is over 20 years (1999) now, as the Association of African Universities (AAU)

has been much concerned about universities to establishing Internal Quality Assurance (IQA). The IQA goes beyond the Quality Control (QC) aspect of managing quality and it is to put confidence into the management and customers of the services being provided by the institution that quality service will be met as required.

Cheruiyot and Maru (cited in Cheruiyot & Maru, 2013), set out to examine the TQM implementation at Makerere University, Mbarara University of Science and Technology, and Uganda Martyrs University. Their study was conducted in 2002 and was a cross-sectional survey consisting of 90 administrators, 90 members of the academic staff, 800 students and 60 members of the support staff, selected through stratified-probability sampling techniques at the selected Universities. Data were collected mainly through a set of questionnaires and an interview schedule. The data gathered was analysed using descriptive statistics of the frequency distribution. One of the findings was that Universities in Uganda are basically bureaucratic. Nevertheless, the factors conducive for the integration of Total Quality Management, though not fully operational, the said institutions are in some aspects endeavouring to tread the path of TOM culture.

Cheruiyot and Maru (2013), again, conducted a study on Service quality and relative performance of three public universities in three countries including; Kenya, Uganda, and Tanzania. It was an exploratory survey of three public universities in East African countries namely Moi, Makerere, and Dar es salaam, with students as the only participants. Student perceptions are elicited on service quality and relative performance with a sample size of 450 respondents from a

targeted population of 450,000 which is derived using a multistage sampling technique. Relative variation in service quality and relative performance across the three universities was found to be significant. Finally, the significant effect of service quality on the performance of universities was also established. The study provides insights on the relative importance of service quality dimensions and their effects on relative performance.

Anwowie, Amoako, and Abrefa (2015) investigated students' satisfaction with service quality at the Takoradi Technical University, in Ghana. The study was conducted using the SERVQUAL instrument for measuring expectations and perceptions according to the five quality dimensions. One hundred and eighty-eight students were sampled using the SERVQUAL questionnaire. The study shows that students' perceptions of service quality exceeded their expectations on four service quality dimensions namely tangibility, responsiveness, assurance, and empathy, while their expectations for reliability exceeded their perceptions.

Cheruiyot and Maru (2013), study failed to involve the institutional management and also considered the students as stakeholders not as learners. Again, Cheruiyot and Maru, (2013) and Anwowie et al., (2015), used one customer group, the students, for the study and also adopted the SEVEQUAL dimensions which have been seen by focusing on only two quality dimensions as iterated by Sureshchander *et al.* (2002). Their findings seem to cover the total evaluation of TQM implementation in the institutions. However, the major difference is the participants involved in the study. One participant group they used cannot give enough information as far as the total evaluation of TQM

implementation is concerned. On the contrary, the current study focused on total evaluation of TQM which considered the three distinct assessment procedures, involving three major set of participant groups, the management, internal and external customers. The TQM practices should transform the staff of an institution and also satisfy the external customers (the final consumers of the products) in the five quality dimensions different from the SEVEQUAL model. It is imperative therefore to seek their views separately when discussing the total evaluation of TQM practises.

Abubakar, Sighn, and Mohammed, (2018), in their study, assessed total quality management practices in three selected Ghanaian public Universities. The driving force for this investigation includes issues like the lack of TQM framework and inefficient influences of external quality assurance bodies within the Ghana Higher Education Institutions in monitoring the teaching and learning enterprise. The mixed method approach was adopted for their study and analyses were performed on three universities involved, namely: University of Cape Coast, University of Ghana, and University of Mines with 36 respondents.

The findings from the study indicated the average level at which the critical success factors are adopted to achieve effective quality management in the institutions 2.56 (51%). This percentage according to the researcher's judgment shows that the level at which the critical success factors are practiced to achieve effective quality management in the universities is relatively low since 51% of the respondents disagreed to that. The findings from the interview responses led to the conclusion that there is absence of TQM philosophy in public HEIs and it was

concluded that management attitude towards TQM is partial. It revealed that management only show commitment towards Quality Assurance and Quality Control which are aspects of TQM and not Total Quality Management.

Nonetheless, their study did not verify the situation from the group of Institutional customers apart from management to ascertain the total evaluation of the TQM implementation. Again, the TQM operation involves the quality control and quality assurance system in addition to quality improvement. In the case of TQM philosophy, it is questionable to say that the three universities with their core mandate to provide services to satisfy their primary external customers and other customers lack the TQM philosophy, which includes the customer satisfaction.

Studies on TQM Implementation Failures in Higher Education Institutions

Despite the numerous supports for the TQM implementation in both manufacturing and service organisations, the implementation has had a remarkably small impact on the Higher Education Institutions (HEIs). According to Koch (2003), many of educational institutions that began TQM implementation in the 1990s abandoned them because the vast majority has been failures. The failure institutions argued that TQM has failed to address the most important issues and because of the nature of academic culture and the difficulty of defining the precise nature of HEIs, it is likely to happen.

The most difficult thing about applying TQM approach is the implementation process. In order to have continual improvement in quality education, output must be clearly defined as iterated by Motwani, and Kumar

(1997). This can sometimes be a hard task to accomplish in certain areas of education. Most universities do not know where to begin, what level to start at, how long it will take, and who will be involved in the process. Some of the other universities who have implemented TQM have done so in several ways.

Academic institutions in Africa are mostly familiar with the TQM tools and techniques, which mostly are the set standard and have been put into practices than the soft side (Cruickshank, 2003). The tools and techniques widely applied to educational institutions to improve performance include the European Framework for Quality Management (EFQM), School Excellence Model (SEM), ISO 9000-2015, Singapore Quality Award (SQA), and Malcolm Baldrige National Quality Award (MBNQA). Academia is also familiar with the most popular service quality delivery model, SERVQUAL, used to measure service quality performance (Parasuraman, Zeithaml, & Berry, 1988).

Pratasavitskaya and Stensaker (2010), mentioned resistance to change; insufficient administration commitment; high time investment due to personal training; difficulty in the implementation of TQM in HEIs environment; lack of quality awareness and commitment; little experience of teamwork constitute some factors contributing to the TQM implementation failures in Higher Education Institutions. Rosa and Amaral (2007), added the absence of effective communication channels; the difficulty in measuring HEIs results; the co-existence of several purposes and objectives for HEIs; an emphasis in the individualism and significant degree of internal competition; the bureaucracy decision-making circuits; and the absence of a strong leadership, highly

committed to the ideas and principles it wants to implement and capable of involving all the institution's members.

Notably, the HEIs in Africa are still focusing on the Internal Quality Assurance approach since the year 2000, which creates suspicion about stakeholders' level of awareness of TQM. Nevertheless, quality assurance is necessary, but it is insufficient in ensuring quality unless supported by the transformational quality that talks about continuous improvement (Mosadeghrad, 2014; Harvey, 2012; Dubey & Singh, 2012). It is often said that while the procedural notions of quality (taking care by quality assurance) are essential and necessary, they are by themselves not sufficient to ensure customer loyalty (Sallis, 2014). Whereas the procedural concept is about proving, the transformational approach is about improving. In this regard, the TQM needs to be practiced and the end of it all, it is about doing things right the first time, not just doing the right things (Sallis, 2014).

Common Barriers that Hindered the TQM Implementation in Organisations

Many organisations have improved their production and service performance through the implementation of TQM, while others faced difficulties in its implementation (Claver-Cortés *et al.*, 2008; Sunder, 2016; Lakhali *et al.*, 2006). Previous researchers observed some barriers which hindered TQM implementation in organisations and due to these barriers both manufacturing and service organisations were facing difficulties in TQM operationalisation. In the light of this, many are contemplating about the TQM as a satisfactorily and efficient model for ensuring quality (Jun *et al.*, 2004).

Further identification of the causes of these failures were made by those researchers which mostly attributed them to difficulties in the implementation procedures of those organisation. Various reasons have been given for their failure, and majority of the cited reasons were on management's inability to have full implementation system of the approach (Zabada *et al.*, 1998). Some TQM practitioners' also claim that if an organisation's culture is not conducive to total quality management, the culture must be changed before total quality programme can be implemented (Bhat & Rajashekhar, 2009).

Tamimi and Sebastianelli (1998), in their study, found 25 factors that worked against TQM implementation. The major barriers cited includes: not linking management's compensation to achieve quality goals and lack of training in areas such as teamwork discussions, communication techniques, quality improvement skills, problem identification and problem solving techniques; inadequate resources to work with.

Bhat and Rajashekhar (2009), identified 21 obstacles for their study which were adopted from the findings of Tamimi and Sebastianelli (1998). Further, they found five most important TQM barriers out of 21 listed by them in Indian industry. They included: non-benchmarking, staff resistant to change, inadequate resources ineffective mechanism for measurement, and lack of training and education on quality.

Amar and Zain (2002), established 11 factors that seem to be the barriers against the successful implementation of TQM in Indonesian organisations. Notably among them are ineffective human resource management, lack of quality

culture; resistant to change; ineffective communication and information, unavailable materials, machines, equipment, and quality training. Helms and Mayo (2008) in their exploratory study on customer service dissatisfaction examined four categories of service failure. They are: rude employees/poor attitudes, overall poor service, employees socialising and not paying attention to customers, and slow service.

Jun *et al.* (2004) in their study, investigated barriers that firms in the Mexican industries experienced based on 25 potential obstacles to TQM success adopted from Tamimi and Sebastianelli (1998) and compared the findings with prior research done in the US firms. The findings of their study suggest that a prevalent TQM barrier in Mexican industries is 'high employee turnover'. Other factors that were common to both Mexican and US firms were: lack of employee training, failure to tie management's compensation to achieve quality goals, and employee resistance to change.

Whalen and Rahim (1994) and Liu (1998) identified nine barriers. The main barriers were: lack of top-management support and lack of proper training. They concluded that these barriers will show up in all sectors-manufacturing, services, government and education. Therefore, it is important for all organisations to understand and avoid these barriers both before and during TQM implementation. In another study conducted by Huq (2005), on service industries found that the following factors led to the failure of TQM during implementation: unrealistic expectations of employee commitment, absence of process focus, lack

of organisation around information flow, loopholes in education and training, and failure to create a continuous improvement culture.

In another study on work-development-oriented TQM strategy, Ljungstrom and Klefsjö (2002), identified the following main obstacles: limited resources, lack of knowledge and management's perspective concerning work development. Soltani et al. (2005) also identified some fundamental causes of unsatisfactory results during TQM implementation program, they are: lack of senior management commitment and their visible participation, lack of knowledge of TQM philosophy, mobility of management, and avoiding taking risk and radical changes through TQM initiatives. In a recent study by Raj and Attri (2010) on quantifying barriers of TQM implementation attempted to develop a mathematical model of identified barriers using graph theoretic approach (GTA) and proposed an index of barriers. Another study by Kounis and Panagopoulos (2007) addressed the difficulties associated with benchmarking techniques and the implication of TQM tools in companies of the public and private sector of Athens, Greece.

Ali *et al.* (2008) discussed the people resistance in TQM implementation in Malaysian universities. A qualitative survey on seven universities in Malaysia suggested that the main reason for people resistance are lack of knowledge and information on quality program, lack of motivation and complacency attitudes, and the quality program was being perceived as burden rather than benefits.

Rad (2005) identified barriers of successful implementation in healthcare service organisations in Iran and found the following five TQM barriers: human

resource barrier, performance appraisal problems, strategic problems, structural problems, and process problems. From above review of literature, it is concluded that in most of the cases the implementation of TQM does not result in a significant improvement in performance. Besides this, the other probable reasons for TQM failure are: lack of suitable corporate climate (Longenecke & Scazzero, 1993), poorly defined performance measurement (Brown & Koenig, 1993), lack of management support and lack of long-term planning and misunderstanding of quality at the management level (Lee & Leung, 1999). The managers of the industries should understand these barriers and develop some remedies to overcome these barriers.

Researchers like, Bilen (2010); Curkovic *et al.* (2008); Chou and Chou (2007); Salegna and Fazel (2000); and Chin and Pun (2002), deserved to be mentioned as they also discussed the TQM implementation barriers in their studies. The identified potential and common barriers for TQM failure in many organisations and their causes are shown in Table 7.

Table 7: Common TQM Barriers Identified from the Literature and their Causes

TQM barriers	Their causes
1. Lack of Top Management Commitment	Lack of awareness, experience and training, little competitive pressure, resistance to change by the management, and hesitant to initiate improvement programmes.
2. High turnover at management level	The structural problem, leadership instability, and lack of training and reward system to motivate them.
3. The attitude of employees towards quality	Difficult in the change of mindset with regard to quality, quality adds costs, failure to create a sense of TQM/CQI, and urgency among employees.
4. Lack of proper training and education	Insufficient training on quality management related training was absent or low, and no training in problem identification and problem-solving techniques.
5. Lack of coordination between the department	Wide difference of opinion between the quality and production/service department, and absence of quality circle concept.
6. Human resource barrier	Insufficient levels of education, lack of skill, lack of understanding of quality management, low work morale, and absenteeism, non-conformance with procedures, etc.
7. No benchmarking	No targets, no attitude to attain higher productivity and efficiency, and best practices of other companies are not benchmarked.
8. Poor planning	Limited priority on quality strategy concepts, considered too theoretical to be practical, no strategy, inadequate resources to effectively employ TQM, quality action plans are often vague.
9. Employee's resistance to change	Poor training, no involvement of employees in the planning and implementation phase of TQM, the majority felt that TQM is not relevant to their situation and many felt that their jobs are threatened.
10. Inadequate use of empowerment and teamwork	Lack of consensus, lack of employee empowerment, lack of feedback, low utilisation levels, management causing confusion, cross-functional teams are not employed, and lack of direction and purpose.
11. Lack of continuous improvement culture	Failure to create a sense of CQI, urgency among employees, lack of shared leadership, and inadequate rewards and incentives.
12. Lack of communication	Poor inter-organisational communication, employees were informed on an ad hoc basis, no single point of contact was provided, use of media/portal, etc. was minimal, and feedback/suggestion system was absent or minimum.

Conceptual Framework of the Study

Based on the theories of the five quality Gurus and the existing gaps in the total evaluation of the TQM implementation, a conceptual framework has been developed for this current study. A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought (Shields & Tajalli, 2006). Conceptual frameworks can act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potential and so close to empirical inquiries, they take different forms depending upon the research question or problem. A conceptual framework is, therefore, a flow chart which in situations it is referred to as flow diagrams or relationship maps.

Figure 4 illustrates the conceptual framework of this current study, by first identifying the Quality Management System of the academic institution to be in operation to ensure quality services delivery. The quality management system (QMS) is expressed as the institutional structure, policies, procedures, processes, and resources needed to implement the four elements of quality management (Chakrabarty, Whitten, & Green, 2008). In all areas that can impact the institution's ability to meet customer requirements, the QMS depends mostly on all institutional stakeholders. By implication, the management group, the internal customer and the external customer groups must work collaboratively for TQM implementation as an approach towards quality management system.

The eleven TQM principles used, have their acronyms indicated in the conceptual framework. They are: Top-Management Commitment and Visionary Leadership (TMV); Human Resource Management (HRM); Design Quality and

Process Management (Technical System) [TSM]; Management Information and Communication System (MIC); Service Quality Culture (SQ); Tangibles of service (Servicescapes) [TS];

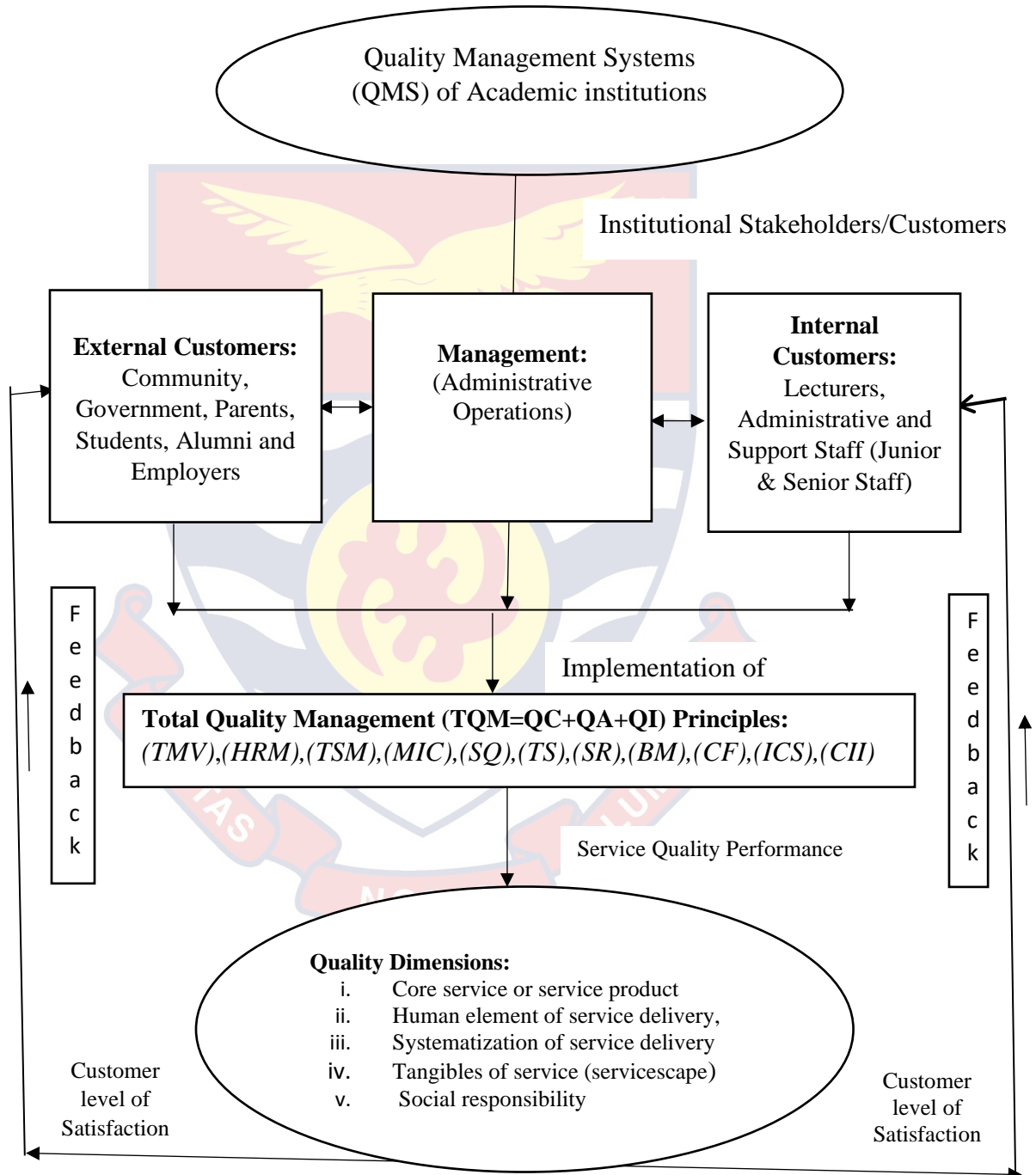


Figure 4: Conceptual Framework for TQM Implementation and Service Quality Performance.

Source: (Field work, 2017)

Social Responsibility (SR); Benchmarking (BM); Customer Focus (CF); Internal Customer (Staff) Satisfaction (ICS) and Continuous Improvement and Innovation (CII). For example, Human Resource Management (HRM) used in the study, encompasses some TQM principles such as staff training, employee involvement, employee empowerment, teamwork, employee appraisal and reward of staff, while the employee (staff) satisfaction treated as one of the eleven latent factors. This was done to ease comparison, contrast and to gain multiple perspectives on the key principles that impact TQM implementation and the accepted practices at the University.

The framework further depicts the relationship between the TQM practices being practiced (as the independent variables) and the service quality performance (as the dependent variables). It also defines the feedback from the consumers of the services which formed the complete evaluation of Total Quality Management implementation. The feedback from the institutional customers could be known through investigations like perception surveys, tracer studies, staff appraisals, staff motivation, and self-assessment as well as management in-depth interviews. In this regard, the feedback will then inform stakeholders in their decision making on the university service delivery status. The five service quality dimensions are also listed in the framework and explained under the conceptual review section.

The conceptual framework (model) explains the responsibilities of all stakeholders in the implementation of the TQM strategies. The evaluation of TQM implementation focuses primarily on the TQM model. The research

assesses the extent to which management listens to the voices of institutional customer-groups in the University and their effects on service delivery. Several studies have examined what constitutes TQM and what are the key principles for the success of TQM (Tort-Martorell, Grima, & Marco, 2011; Wiengarten, Fynes, Cheng, & Chavez, 2013). These studies have provided different sets of principles that are considered essential to the success of TQM implementation. Further, it has been noted that the terminology of TQM constructs used across various studies may be different. In some studies, TQM constructs are referred to as “practices”, while in other studies, these are either mentioned as “critical success factors” (CSFs) or even “principles” but the meanings of these constructs remain the same (Mishra & Pandey, 2013).

It is worth noting that, the eleven TQM principles used in the study have been used frequently by different researchers in the service industries. Secondly, these principles have been identified as the key practices in TQM implementation in both the manufacturing and service industries (Saraph et al., 1989; Antony et al., 2002; Zhang, Waszink, & Wijngaard, 2000; Khamalah & Lingaraj, 2007). Again, they are associated with both the principles and tools and techniques components of TQM. Finally, they are significantly associated with education services and in the promotion of service quality (Ueno, 2008; Osayawe Ehigie, & McAndrew, 2005). Hence, it is believed that these TQM principles are suitable to be used in the a case study university in Ghanaian education sector.

Summary

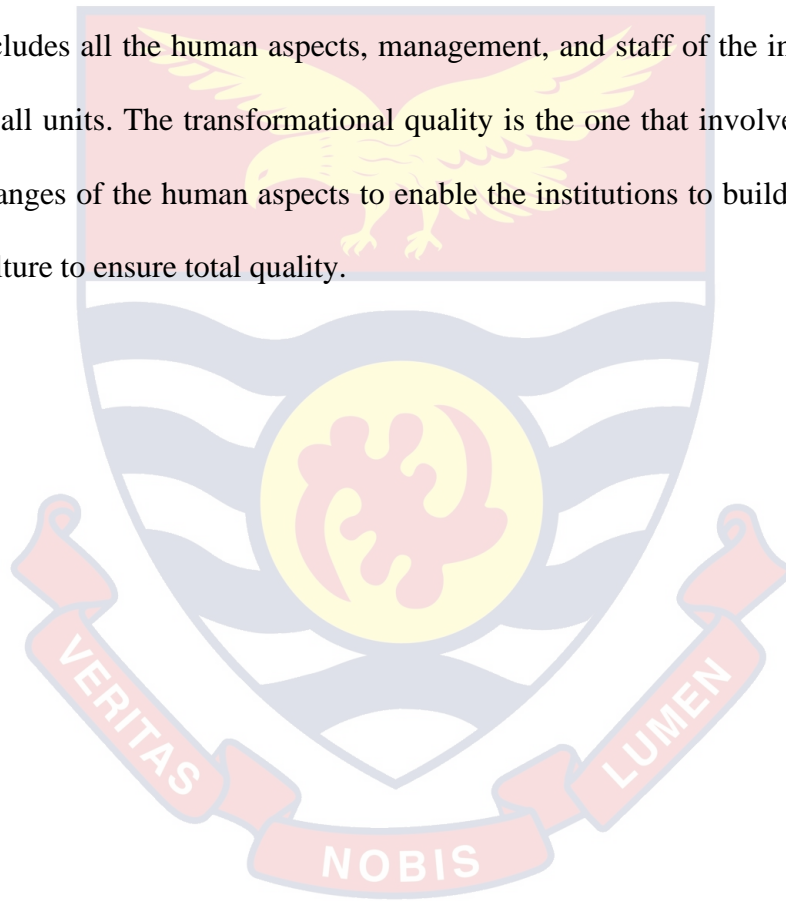
This chapter reviewed the literature on the empirical studies of Total Quality Management (TQM) practices in both manufacturing and service organisations and how the various organisations have adopted the TQM as means of continuous improvement in their production processes. Gaps that exist in the context of total evaluation of TQM implementation in the developing world were identified. The conceptual framework was finally developed based on the theories of the five quality experts existing theories.

Institutional management' awareness of the TQM philosophy is essential to the success of TQM implementation. However, the review revealed the scanty understanding of the concept of TQM in the service industries. The actual awareness of TQM principles (soft side of TQM) is often superficial, and managers have a relatively poor understanding of it. All studies mentioned above clearly indicate that TQM principles and tools and techniques are applicable to both manufacturing and service organisations. Again, the previous studies revealed significant positive relationships between TQM principles, tools and techniques and organisational performance. Their contention was that the TQM implementation actually plays number of roles in the performances of many organisations. The TQM principles which are more of human resource management constitute the most used one for all organisations.

However, none of the previous studies examined the total evaluation of TQM implementation by looking at the three distinct assessments simultaneously as done in this current study. The existing gap is the assessment of management

awareness of TQM that informs its implementation strategies, together with the assessment of process criteria from internal customers (staff/employee) perspective and the assessment of outcome criteria from the external customers' perspective.

The TQM concept does not only talk about the quality aspects, but more important those to be involved to achieve the total quality which in this sense includes all the human aspects, management, and staff of the institutions, as well as all units. The transformational quality is the one that involves the institutional changes of the human aspects to enable the institutions to build their own quality culture to ensure total quality.



CHAPTER FOUR

RESEARCH METHODS

Introduction

The research carried out is descriptive research. The descriptive research is a study designed to depict the participants in an accurate way by describing the characteristics of the population or phenomenon that is being studied. This study intended to collect information regarding the total evaluation of Total Quality Management (TQM) implementation at the University of Cape Coast, Ghana. This chapter describes the research procedure, research design, study population, sample and sampling procedure, instrumentation, reliability, and validity of instruments, mode of data collection and data analysis procedure.

Research Procedure

The research presented in this thesis has been carried out according to the following steps depicted in Figure 5

1. The first step in the research procedure was a clear identification and formulation of the research problem where the total evaluation of TQM implementation of the University of Cape Coast was the core of the research problem.
2. The second step was the formulation of the main purpose of the study and the research problem. With the research problem in mind, looking at the iron triangle challenges of education; the Access, Cost, and Quality, of which the Universities in Ghana are facing, the aim of conducting the investigation has been established.

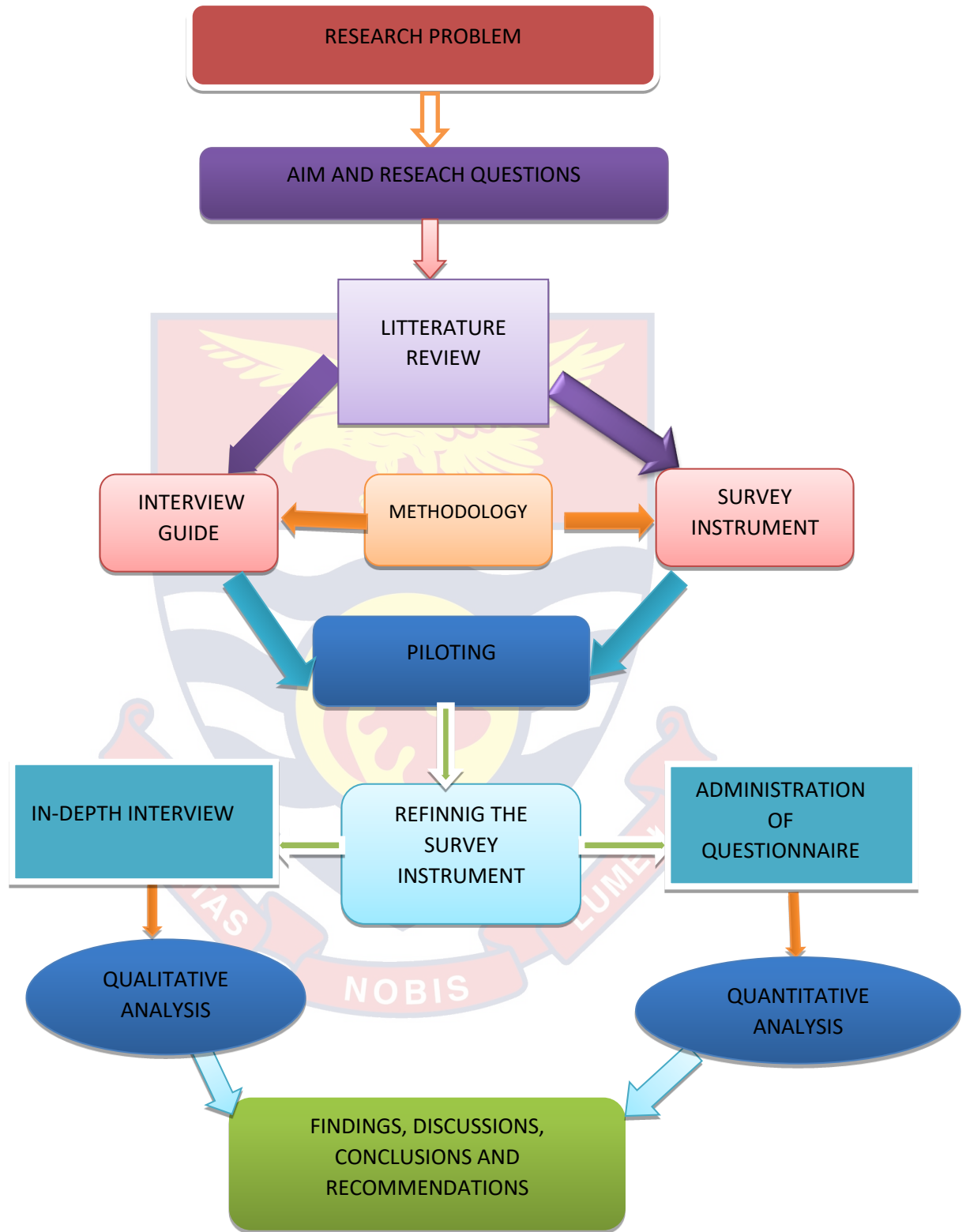


Figure 5: Research Procedure

Source: (Fieldwork, 2017)

3. The next step was the establishment of a clear understanding of the existing body of knowledge in the quality management area, which should come through an extensive literature review (Moxham, 2009). A thoughtful literature review was conducted in order to get a well-informed knowledge of the research on TQM.
4. In order to accomplish the research questions, there was the need to employ suitable methodologies. At the preliminary stage, the problem was identified, the aims and research questions of the research were clearly determined and the next was to decide on the methods to use (Plomp, 2013). The methodology selected for any research project should be appropriate to the goals or purpose of the research and answering the research questions.
5. The next step was the pilot survey which is the pre-testing of a particular research instrument such as a questionnaire or interview guide. Pilot studies are a crucial element of good study design and help define the research question; test the proposed study design and process; prompt researcher to issues that may negatively affect the research and also determine the feasibility of the research study.
6. Both the interview guide and two survey instruments were revised based on the feedback from the pilot-test survey conducted, making the instruments more refined and clearly worded. The refined instruments were then administered to the participant and solicited the needed information, while interviews were carried out from the three major groups of the study, management, internal and external customers

7. Both the qualitative and quantitative data were captured, analysed, and discussed. Finally, the summary of findings, conclusions, and recommendations was also drawn.

Research Design

According to Mertens (2007), the nature of the definition of any research is influenced by the kind of theoretical framework which is referred to as the paradigm, meaning the knowledge claims. Researchers are urged to locate their research in a selected paradigm. Morgan (2007), defined a paradigm as the set of beliefs and practices that guide a field and could be used to summarise the beliefs of researchers. A paradigm differences influence how we know, our interpretation of reality and our values and methodology in research (Hanson, Creswell, Clark, Petska, & Creswell 2005). Paradigm will influence the questions that researchers will pose and the methods they employ to answer them (Morgan, 2007; Creswell & Clark, 2007; 2011).

Research design is the specific procedures involved in the research process including: define the population, sampling procedures, data collection, data analysis, and report writing (Creswell, 2012). With regard to the pragmatic knowledge claims, the underlying philosophical framework for mixed method design was adopted in this study (Creswell, Clark, Guttman, & Hanson, 2003; Morgan, 2007).

The mixed method designs are procedures for collecting, analysing, and mixing both quantitative and qualitative data in a single study or a multiphase series of studies (Creswell, 2012). The type of mixed method design adopted in

any study should be determined by a number of factors which include; the purpose of the research or research questions; timing; mixing, theorising and weighting which is the relationship of the qualitative and quantitative samples, given priority to one or the other (Creswell, 2009; 2012; Denzin & Lincoln, 2000). The combination of the two research methods is very useful in gaining insights and results, and assisting in making inferences and drawing conclusions (Amaratunga, Baldry, Sarshar, & Newton, 2002; Creswell, 2012).

The mixed method research takes advantage of using multiple ways to explore a research problem in order to overcome the weaknesses, biases, and limitations that tend to occur when just one method is used (Amaratunga et al., 2002; Creswell & Clark, 2007). Whatever quality dimensions are being evaluated, it is necessary to consider whether a quantitative or qualitative approach is more appropriate given the purpose of a particular quality assessment. Nevertheless, there is merit in using both quantitative and qualitative approaches. A quality management programme that utilises a mixture of both types of data would seem most appropriate for both TQM implementation and service quality delivery purposes (Brookes, 2003). In support of this, Teddlie and Thahakkori (2009) urged that mixed method are useful if they provide better opportunities for the researcher to answer research questions, as well as allowing the researcher to better evaluate the extent to which the findings can be trusted and inferences can be made from them.

It is imperative therefore to rely on a combination of both quantitative and qualitative methods, including a survey instrument for quantitative aspect and in-

depth interviews for the qualitative side. The choice of a mixed method approach for the total evaluation of TQM implementation is not new globally. It has been mostly used by other researchers who have conducted studies related to TQM and organisational performances in different countries. Meanwhile, those researchers in TQM practices found that a mixed-method approach combining questionnaires and interviews is the most applicable and acceptable research method in this field (Al-Marri, Moneim, Baheeg & Zairi, 2007; Jabnoun & Sedrani, 2005; Lagrosen, 2003; Mellahi & Eyuboglu, 2001; Prajogo & McDermott, 2005; Salaheldin, 2009; Stock, McFadden & Gowen III, 2007; Vecchi & Brennan, 2011; Yong & Pheng, 2008; Zu, Robbins & Fredendall, 2010). However, it appears developing countries including Ghana are lacking such investigations, more especially in the field of Higher Education Institutions.

In this regard, this study included some variables on service quality dimensions to establish relationships between the TQM implementation and these variables. The total evaluation of TQM implementation provides an ideal opportunity for mixed methods studies to contribute to learning about best practices in how to implement a TQM as well as TQM effectiveness in achieving the aim of internal customers' involvement in quality management and providing what the external customers expect.

The study ascertained qualitatively the experiences of institutional managers with regard to the TQM practices being practised at University, while the customers' perception (quantitative data) was to inform the level of TQM principles being practised in the University and the outcome of its implementation

(Warren & Karner, 2005; Silverman, 2000). Thus, the quantitative data solicited from both internal and external customers perspectives on TQM implementation and service performance, respectively, provided information on the level of acceptability and benefits of TQM concept by the University. It was an attempt to depict how institutional managers acknowledge and implement the TQM Principles, and what the institutional customer-groups experience and perceive the service being provided.

Therefore, to understand the processes or the how, what, when and why of a given phenomenon, both quantitative and qualitative research provides the necessary in-depth and exploratory tools to achieve a clear picture of the process, hence the mixed method approach (Creswell, 2012; Denzin & Lincoln, 2000; Silverman, 2013). With the mixed method design, the research problem to be investigated, involved the description, explanation and analyses of the participants' experiences in a phenomenon under study. The respondents procedures developed are in response to the need to clarify the intent of mixing quantitative and qualitative data in a single study.

The study adopted the embedded mixed method design, specifically the concurrent embedded strategy. This strategy of mixed method is identified by its use of one data collection phase, during which both quantitative and qualitative data are collected within the same period (Creswell, 2009). Researchers that collect both qualitative and quantitative data (mixed method) normally provide a priority to one form of the data or the other (Creswell & Clark, 2007; Creswell, 2007; 2012). The embedded mixed method design could begin with either

convergent or sequential procedure types, with some important differences (Creswell, Plano, Guttman, & Hanson 2003). The purpose of the embedded design was to collect quantitative and qualitative data simultaneously or sequentially, while one form of data plays a complementary role to the other.

Even though most examples in the literature studies which applied this method, added qualitative data in support of quantitative design, the reverse is the case for the current study (Creswell, 2009). Within this type of outcome study, the researcher collected and analysed both quantitative and qualitative data. The quantitative data was incorporated into the study to explore how institutional customers perceived the outcomes of the TQM principles being practiced in the University. In this way, the quantitative data augment the outcomes study, which is a popular approach within implementation and dissemination research (Palinkas, Horwitz, Chamberlain, Hurlburt, & Landsverk 2011). From Figure 6, the quantitative in a small box within the qualitative in a bigger box indicates that the quantitative data embedded within a qualitative framework, thus given more priority to the latter of which this study adapted.

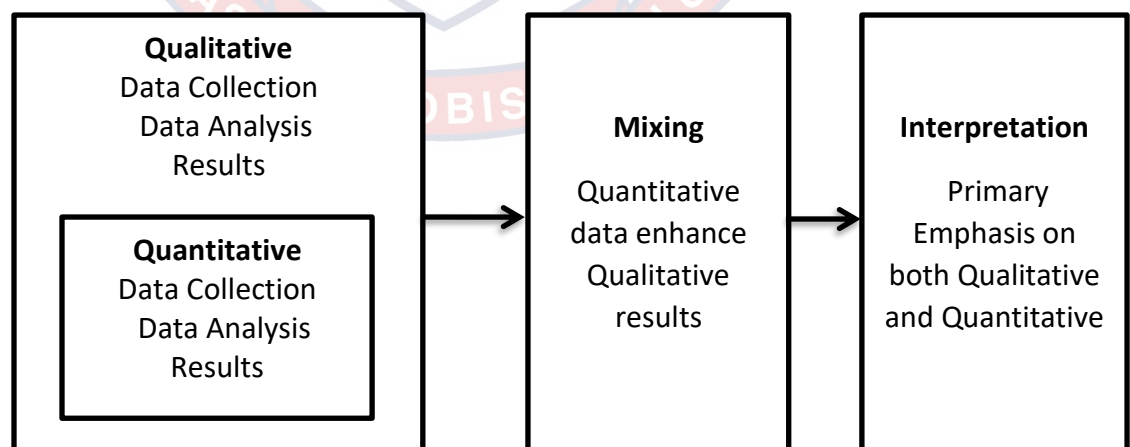


Figure 6: Concurrent Embedded Design; (adapted from Creswell, 2009)

The two results were analysed differently to answer different research questions. However, the quantitative analysis at the end, informed how the qualitative analysis is about, hence the embedded.

This current study is phenomenological in nature, since it focused on top and middle institutional managers' experiences in TQM implementation and the provision of quality services to their customers (Creswell, 2003). Phenomenological research is a form of qualitative research in which the researcher attempts to identify commonalities in the views of several individuals regarding a particular phenomenon (Teddlie & Tashakkori, 2009). A phenomenological study is the systematic, rigorous investigation of a situation or problem in order to generate new knowledge or validate existing knowledge (Bell, Bryman & Harley, 2018).

Embedded Case Study

A case study research strategy was adopted and it is often used as a pragmatic research tool in order to understand thoroughly the complexity of a given problem and to support decision making (Yin, 1994). It may be both descriptive and explanatory and often require an interdisciplinary approach and teamwork. The use of the case study design allowed the researcher to gain an in-depth and sharpened understanding of the research problem under investigation. The case study design was used because of the practicality of the study as it involves gathering respondents' understanding, experiences, opinions, and attitudes at one University institution in Ghana (Creswell, 2003; 2009). The study utilised different groups of participants (various customers and management of

the university) who differ in the variable of interest (management acknowledgment and customer perception) but share common characteristics such as socioeconomic status, educational background, and ethnicity.

This current study presented the results of the embedded case study conducted in University of Cape Coast, a public University in Ghana. However, a decisive distinction must be made between holistic and embedded case studies. A holistic case study is shaped by a thoroughly qualitative approach, while Embedded case studies involve more than one unit, or object, of analysis and usually are not limited to qualitative analysis alone. Nevertheless, embedded case studies could be one main unit (one university) with the multiplicity of evidence being investigated at least partly in subunits, which focus on different salient aspects of the case. For instance, in an institutional case study, the main unit may be a selected institution as a whole, and the subunits may be departments or even groups of individuals, such as management and employees.

The embedded case design allows for both qualitative and quantitative data and strategies of synthesis or knowledge integration. It is worth noting that an embedded case study allows for a multiplicity of methods that may be applied within the subunits. For example, themes and hypotheses may be formulated, quantitative data sampled, or statistical analyses applied. The study preferred the embedded to the holistic case study since the criteria of objectivity may not be applied in holistic case studies. The holistic case studies are a highly subjective affair and include the personal value system of the case study researcher.

An embedded case studies particularly are considered an appropriate approach to real, complex, current problems that cannot be treated simply by one known methods, such as experiment, observation or survey.

Population of the Study

The population of interest was the public Universities in Ghana. During the study period (2014-2017), there were nine fully accredited public Universities including; University of Ghana (UG), Legon; Kwame Nkrumah University of Science and Technology (KNUST), Kumasi; University of Cape Coast (UCC), Cape Coast; University of Education (UEW), Winneba; University of Development Studies (UDS), Tamale; University of Professional Studies (UPSA), Accra; University of Mines and Technology (UMAT), Tarkwa; University of Health and Allied Sciences, (UHAS), Ho; and University of Energy and Natural Resources (UENR), Sunyani. The study focused on the public universities in the country instead of the private ones because, the current unbearable challenges facing educational systems, appears to be more serious on public university institutions as compared to the private ones. The Universities are expanding rapidly (wide access) and should be affordable (low cost) and academically credible (high quality).

The management and the respective institutional customer-groups of UCC constituted the targeted population. Table 8 depicts the population of the various categories of management and customer-groups of UCC as of 2017. At the time of data collection, the University had three persons at the top-management. These were the Vice-Chancellor (VC), Pro-Vice-Chancellor and the Registrar. There

were five persons who constituted the middle management and the five were the Provosts of the Five Colleges. Provosts were selected because they are both academic and administrative Heads of academic units, while other middle managers in administration and support unit worked directly under the top-management. Table 8 depicts the working population in different functional units in both the academic, and administrative and support units of the University.

Table 8: Targeted Population of Participants by Groups and Gender

A. Management	Gender		
	Male	Female	Total
Top Management (VC, Pro-VC and Registrar)	3	0	3
Middle Management (College Provost)	4	1	5
Total	7	1	8
B. Internal Customer-group	Male	Female	Total
Lecturers (Faculty members)	760	201	960
Administrators (Senior Members)	143	86	229
Senior staff (Support staff)	1276	559	1835
Junior staff (Support staff)	1878	401	2279
Total	4057	1247	5,304
C. External Customer-group (Student & Alumni)	Male	Female	Total
Student (Regular)	11,943	5,922	17,865
Registered Alumni (Last 5 years: 2013-2017)	1,948	672	2,620
Sub-total	13,891	6,594	20,485
Employers/Businesses (Last 5 years : 2013-2017)			50

(Source: Basic Statistics, UCC, 2017)

During the study period, the University had 5,304 internal customers with the breakdown shown in Table 8, while its regular students' population for 2017/2018 academic year stood at 17, 865. The registered Alumni for the last five years were 2,620, with 50 Employers/Businesses engaging the Graduates from UCC for the last five years according to the Registrar General Department Directory (2017). In order to seek for participants' perspectives on the current

phenomenological study, the last five years were used for both Alumni and Employers groups.

Sample and Sampling Procedures

Multisampling procedures were used in this study, including purposive, stratified, proportional to the size and systematic random sampling. In a sampling of cases, purposive sampling logic was relied upon, of which the first public university established Quality Management Systems, University of Cape Coast (UCC) was selected.

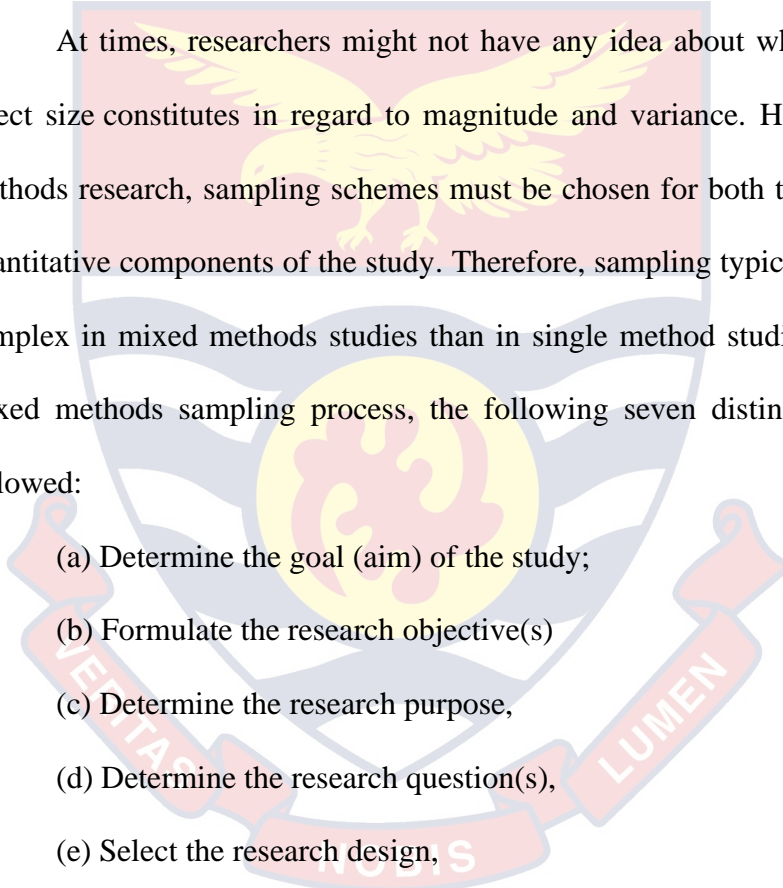
A stratified sampling method (a probability sampling technique) was also used in this study. This method was considered appropriate to collect sufficient information from the total population to make statistical inferences. The major objective of stratified sampling is to increase precision without increasing cost (and above all, many studies on TQM have employed stratified sampling method for data collection (Arumugam et al., 2009; Lakhali et al., 2006; Malhotra, 2007; Ooi et al., 2008; Sit et al., 2009; Sila & Ebrahimpour, 2005). This study stratified the targeted population into three namely: the management, the internal customers and external customers. The selection of the University management with its internal and external customer groups was that together, they could yield more robust, generalisable and valid findings than a single stakeholder group research. Three top-management and five middle managers were purposively selected for a face-to-face in-depth interview. These sample participants were chosen for the following reasons:

- a. Both top and middle management of the University are expected to have a high level of education and the best understanding of TQM practice being practiced in the University. They are required to initiate the implementation strategies, as well as integrating them into strategic planning, policies, and decision-making. They also help in understanding the barriers that affect the implementation of TQM and issues related to institutional culture.
- b. The internal customers had to be involved to support the management to deliver quality services to external customers. They play an important role in institutions, as well as all the influential factors such as organisational culture, and barriers that could affect the effectiveness of TQM practices. This group was targeted to establish their perspectives on the level of TQM implementation in the University.
- c. The selected external customers have an important role in the operation of a quality management system in the institution. They ensure the success of the performance of TQM functions through their voices and promote awareness of customer requirements. They have a wide range of experience and knowledge about the output from the institution.

Therefore, the involvement of both the internal and selected external customer-groups in addition to institutional management in the study was essential. In this regard, the practical relevance of the findings would be increased as pointed out by Barratt, Choi, and Li (2011) and Fisher (2007). It facilitated a comparative analysis of their similarities and differences with regard to the

managerial approaches to the TQM implementation, the entire service quality delivery, and more importantly, customer satisfaction (Fisher, 2007; Peprah, 2014). The ever-increasing demand for research has created a need for an efficient method of determining the sample size needed to be representative of a given population. In order to calculate sample size, researchers have to know what type of effect size they are measuring for in their study.

At times, researchers might not have any idea about what their proposed effect size constitutes in regard to magnitude and variance. However, in mixed methods research, sampling schemes must be chosen for both the qualitative and quantitative components of the study. Therefore, sampling typically is much more complex in mixed methods studies than in single method studies. In fact, in the mixed methods sampling process, the following seven distinct steps could be followed:

- 
- The logo of the University of Cape Coast is a watermark in the background. It features a shield with a yellow eagle at the top, a yellow sun in the center, and a red banner at the bottom with the Latin motto 'VERITAS LIBERABIT VOS A OMNI LUMEN'.
- (a) Determine the goal (aim) of the study;
 - (b) Formulate the research objective(s)
 - (c) Determine the research purpose,
 - (d) Determine the research question(s),
 - (e) Select the research design,
 - (f) Select the sampling design, and
 - (g) Select the sampling scheme.

First, the importance of sample size in qualitative research must be understood. There is a misconception that the sample size does not matter for qualitative studies. However, the size determination in qualitative studies takes a

different approach. One approach is to continue to include further participants or material until saturation is reached. The number required to reach saturation can, therefore, be regarded as the maximum sample size. It is generally a subjective judgment taken as the research proceeds. However, some methodologists have provided guidelines for selecting samples in qualitative studies based on the research design, sampling design or data collection procedure (Sandelowski, 1995).

Sample sizes in qualitative research should not be so small as to make it difficult to achieve data saturation, theoretical saturation, or informational redundancy. At the same time, the sample should not be so large that it is difficult to undertake a deep, case-oriented analysis. This study was Phenomenological in nature, it involved subgroup sampling design and a data collection procedure for qualitative data from in-depth interviews. In considering these, eight management level persons of the UCC comprising three top managers and five Provosts of Colleges in the University were targeted for in-depth interviews (Creswell, 2009; Onwuegbuzie & Leech, 2007). The top management performed their responsibility as policymakers on behalf of the University Council, while the middle managers supervised the activities of the frontline managers (Sandelowski, 1995). The five College Provosts were purposively selected because they were line managers in charge of the various academic units (the Colleges)

In the case of quantitative data collection, estimating an appropriate sampling size is a very important aspect of a research design to allow the researcher to either describe or make inferences from the sample statistics to the

actual population. When undertaking quantitative data collection, it is important to consider the study population and the determination of the sample size (Teddle & Tashakkori, 2009; Collis & Hussey, 2003). The power of a sample survey lies in the ability to estimate appropriate sample size to obtain the necessary data to describe the characteristics of the population.

On one hand, the internal customers of the university categorised in four subgroups were involved in the study. They were grouped into Lecturers, Administrators (senior members), Senior Staff and Junior Staff. The internal customers were supposed to be involved in the implementation of the TQM concept, since they assisted the management to deliver services to the external customers. On the other hand, three randomly selected external customer subgroups participated in the research. The three selected external customer subgroups for the study were, students (primary customers); employers/businesses (secondary customers) and Alumni (tertiary customers) who are beneficiaries of education services.

Before selecting the sample, the population must be divided into parts that are called sampling units, or units. These units must cover the whole of the population and they must not overlap, in the sense that every element in the population belongs to one and only one unit (Cochran, [sited in Kotrlík, & Higgins, 2001]). The construction of this list of sampling units, called a frame, is often one of the major practical complications which need to be addressed. The sample frame has been depicted in Table 9, indicating the subgroups of external customers under the three strata. The institutional external customer participants

were then randomly selected from each stratum (Students, Employers and Alumni). In the case of institutional customers by the frequency of interaction, the students' group is the only primary external customers, hence selected, while the other two, the Alumni and Employers, were randomly picked from their secondary and tertiary categories.

Table 9: Sample Frame for the External Customer Subgroups

Primary	Secondary	Tertiary
Students	Parents	Government
	Employers/Businesses	Local Community
	Students family members	Alumni
		Society

(Sources: Sallis, 2014; Kanji and Tambi, 1999)

In the case of employers/businesses group, according to figures from the Registered General Department Directory, Ghana (2015), 50 Organisations with many branches all over the country were engaging the UCC graduates from 2013 to 2017.

In this regard, the study considered a commonly used approach in estimating sampling size, the Krejcie and Morgan Table for determining sample size (Krejcie & Morgan, 1970). Krejcie and Morgan's table for determining the sample size for categorical data was used to arrive at an accurate sample size study. Krejcie and Morgan's formula, which assume an alpha of 0.05, the population proportion (assumed to be 0.50 since this would provide the maximum sample size) and a degree of accuracy of 0.05 gave a sample size of 357 and 377

for internal and two external customer sub-groups respectively (students and Alumni) [see Table 10]. However, taking into consideration the avoidance of high non-response rate, the sample sizes allocated to the internal and the two external sub-groups were increased by small margins to 370 and 384, respectively.

Table 10: The Sampled Participants Targeted for Interview and Survey

A. Institutional Management	Gender		Total
	Male	Female	
Top Management (VC, Pro-VC and Registrar)	3	0	3
Middle Management Academic (College Provost)	4	1	5
Total for interview	7	1	8
B. Internal Customer Sub-group	Male	Female	Total
Lecturers (Faculty members)	53	14	67
Administrators (Senior Members)	10	6	16
Senior staff (Support staff)	89	39	128
Junior staff (Support staff)	131	28	159
Total sampled	283	87	370
C. External Customer Sub-group	Male	Female	Total
5. Student (Regular)	214	120	334
6. Alumni (Last 5 years: 2012-2016)	38	12	50
Sub-total sampled	252	132	384
7. Employers/Businesses (Last 5 years: 2012-2016)			50
D. Grand Total for Internal and External customers			804

(Field Data, 2017)

Finally, 50 Employer/Business organisations which have engaged the products of the University within the last five years were added to the two external customer sub-groups to give a subtotal of 434 external customers as shown in Table 10.

In research, when subpopulations within an overall population vary, it is good to sample each stratum independently (Naing, Winn, & Rusli, 2006; Tambay & Catlin, 1995). From each of the customer-groups (strata), probability proportionate allocation was used in the selection of the participants for each of

the sub-groups. This explains how the study determined the sample size for each customer-group and sub-groups of the university with an overall sample of 804 for the survey (quantitative data collection).

Data Collection Instruments

The study sought to determine the total evaluation of TQM implementation at the University of Cape Coast. With this, the intended generic instruments with the help of literature review developed to suit the evaluation of TQM education institution were refined and modified after pilot-tested. The three instruments used were the Interview guide, internal customer and external customers' questionnaires. With regard to mixed methods, survey questionnaires and in-depth interviews are probably the most common methods (Teddlie & Tashakkori, 2009). This combination allowed for the strengths of each strategy to beneficially combine with the other.

Data gathered using interviews were based on a relatively small number of respondents, who generate more in-depth information in response to probes from the researcher. Seidman (2013), was of the view that, in trying to investigate an educational institution or any education service process, the experiences of the top and middle management in the affairs of the institution were the most important information. He further points if the purpose of the research is to understand how the individuals spearhead a process in education and their experience in the system, then interviewing provides a necessary, if not always completely sufficient means of inquiry.

Interview Guide

An interview is defined as a method of collecting data in which participants are asked questions in order to find out what they do, think or feel (Collis & Hussey, 2003). According to Teddlie and Tashakkori (2009), an interview is a data collection research strategy that involves one person (the interviewer) asking questions of another person (the interviewee). In-depth interviews define as interviews conducted face to face with the respondent, in which the subject matter of the interview is explored in detail. The in-depth interview is considered a very strong and effective tool for collecting qualitative data due to its characteristics of extensive probing. It provides the ability to discuss specific and deep topics to generate valuable data.

An interview guide was developed on the basis of the literature. It focused on the area of the concept of quality; quality management system in the University; approaches to quality (Quality Inspection, Control, Assurance, and TQM). It also considered the TQM implementation strategies; TQM principles being practiced in the University; TQM tools and techniques and the barriers to TQM implementation in the university. Through literature review, inquiries were made on the best practices of TQM being practiced in the education context elsewhere in the world. A valid and reliable range of responses for the qualitative study was obtained through the institutional management educational background, their level of experiences by the number of years spent with the university and their years of work in the particular position.

Survey Instrument

Two different survey instruments were developed to elicit quantitative data from institutional customers to support or complement the analysis of qualitative data. First, a questionnaire for the internal customer group was designed to elicit information on the level of TQM implementation in the University from the employee perspective. One hundred and seven items instrument were developed while, 39 items instrument each were also developed for the external customers expectations and perceptions. It was done through the help from literature review and previous researchers instruments on the TQM principles in manufacturing and other service organisations. The interview guide also developed, together with the survey instruments were pilot-tested in a public University, University of Education, Winneba campus. The results were then subjected to Exploratory Factor Analysis (EFA) procedures. Finally, the internal customer instrument had items reduced to 60 and grouped under 11 latent factors (TQM principles), while, the external customer instruments also reduced to 26 items. All the remaining items were having very high item reliabilities which made the instruments reliable for the main survey. The names assigned to the latent factors indentified are selected from those identified by the quality experts and have been commonly used by the previous researchers in service industries which is applicable to education service as well.

The first part of the internal customer instrument consisted of seven items on the respondents' background information and the second part had the 60 items under the eleven TQM principles selected on a 5-point Likert-scales ranging from

1 (extremely low) to 5 (very high). The external customer instrument was in three parts and the first part had items ranging from 3 to 6, with respect to each customer sub-group on respondents' background information. The questions posed related to the respondents' gender, occupation, and education, as well as the period in which they had been associated with the University institution. The second section was about customer's expectations from the university while the third part asked the customer's perception of an institution's service quality delivery. The second and third parts with 26 items each, focused on the customers' expectations and perceptions on service performances respectively.

Options to the items on expectations part were made on 5-point Likert-scales ranging from 1 (highly unimportant) to 5 (very important), while those on perceptions ranged from 1 (very unsatisfactory) to 5 (very satisfactory). An ordinal measurement scale, which is a ranking of rating data that normally use integers in ascending order, was used in this study. The numbers assigned to the agreement scale (1, 2, 3, 4, 5) did not indicate that the intervals between the scales were equal, nor did they indicate absolute quantities (Naoum, 1998; Shahin, 2010). The internal customer respondents were asked to rank the items on TQM concepts according to the degree of their knowledge that the TQM principles were being implemented by management as they exist. The external customers were also asked to rank how important and satisfactory they were, on the items under service quality dimensions.

Pilot Testing

Before using a questionnaire to collect the required data, it was imperative to conduct a pilot-test to ensure avoidance of any mistakes and irrelevant information, and to ensure that the items will provide the right answers and not misleading (Malhotra & Birks, 2003). A pilot-test refers to the idea of distributing the questionnaire on a small sample of respondents before using it to collect the main data for the study so that it can be refined or modified (Teijlingen & Hundley, 2010). Following this procedure will enable the researcher to obtain some assessment of item validity and the reliability of the collected data.

The research instrument was pilot-tested at the University of Education, Winneba (UEW), which was randomly selected from the other public universities in Ghana. The Registrar of the UEW was interviewed, while 123 internal customers and 135 external customers were surveyed on the level of TQM implementation and the outcome of the implementation of the service quality performance. The in-depth interview was conducted with the help of an interview guide developed. A hundred and seven items were developed for the internal customer instrument, with the help of the literature reviewed on TQM implementation.

Another 39 items were also adapted for the assessment of service performance in education from the 41 items under the five service quality dimensions used in the banking industries by Sureshchandar et al., (2001). The data collected were subjected to factor analysis. The Exploratory Factor Analysis (EFA) was used after pilot-tested the instruments since the study sought to

establish the relationship between the observed and the scale variables (TQM principles) which were uncertain. Through the EFA, 11 TQM principles (latent factors) were identified which were applicable to University education.

The most common method of factor analysis used was Principal Component Analysis (PCA), and the most common method of factor rotation adopted was the Varimax rotation (Gray & Kinnear, 2012; Zikmund, Babin, Carr & Griffin, 2013). The varimax Exploratory Factor Analysis under SPSS version 21 was used. The mode adopted to determine the appropriateness of factor analysis in the pilot-tested was examined on the correlation matrix. A statistical test for the presence of correlations among the variables was computed. Items with low correlations (less than 0.30) usually will not have high loadings on the same factor. Any correlation values found greater than 0.3 are considered to be significant loadings and there is the need to have at least 3 items being loaded to each of the latent factors identified (Suhr, 2006).

Nonetheless, the visual inspection of the correlation matrix revealed a substantial number of correlations among the items as 2,602 out of 2,794 counts had loadings greater than 0.30. It provided the statistical probability that the correlation matrix has significant correlations among most of the variables, hence, there were sufficient correlations to justify the application of factor analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy test with KMO value of 0.866 indicated sufficient items for each factor (TQM principles) and Bartlett test of sphericity value of 0.00 (less than $\alpha = 0.01$) indicated that the correlation

matrix is significantly different from an identity matrix, in which correlations between variables are all zero.

As a result of the pilot-tested, there was refinement and rewording of the interview guide and the two survey instruments in consultation with the research supervisors and other experts in quality management systems contacted in the University of Cape Coast (see Table 11).

Table 11: Item Reliabilities for the 11 TQM Principles being Practised

No	Factors/Measure	Original number of items	Original alpha (reliability)	Items deleted	Final refined items	Final alpha (reliability)
1	Top-management commitment and visionary leadership	8	0.951	4	4	0.804
2	Human resource management	17	0.977	10	7	0.868
3	Design quality and process management (Technical system)	9	0.964	4	5	0.839
4	Management information and communication System	9	0.932	3	6	0.902
5	Service quality culture	8	0.884	1	7	0.858
6	Tangibles of service (Servicescapes)	8	0.949	3	5	0.872
7	Social responsibility	6	0.906	0	6	0.880
8	Benchmarking	6	0.908	1	5	0.896
9	Customer focus	22	0.956	15	7	0.920
10	Internal customer satisfaction	9	0.964	4	5	0.832
11	Continuous improvement and innovation	5	0.891	2	3	0.898
Total		107		47	60	

(Field data, 2017)

On one hand, some of the 107 items were found to have similar meaning and some were too loaded for the respondents to complete at the scheduled time. With assistance and advice gained from the supervisors and those contacted, the items on TQM principles were modified, reworded and reorganised, which eventually were reduced to 60 items as shown in Table 11, with their final Coefficient's alpha values.

The fundamental core values and principles applicable to education were selected for the TQM framework as defined in the survey instrument. The final alpha values when items are deleted under the TQM principles were found close to the original alpha values and therefore the removal of some of the items has no effect on the interpretation of the factors (TQM) principles. Again, the 39 items of the service performance instrument were reduced to 26 and grouped under the five service quality dimensions identified in the study, as shown in Table 12.

Table 12: Item Reliabilities for the Five Service Quality Dimensions

No	Quality Dimension	Original number of items	Original alpha (reliability)	Items deleted	Final refined items	Final alpha (reliability)
1	Core service or service product (A)	4	0.815	0	4	0.798
2	Human element of service delivery (B)	17	0.942	9	8	0.907
3	Systematization of service delivery: non-human element (C)	5	0.828	1	4	0.854
4	Tangibles of service (Servicescapes) (D)	6	0.944	1	5	0.854
5	Social responsibility (E)	7	0.942	2	5	0.858
	Total	39		13	26	

In similar situation, the final alpha values were closed to those of the original alpha values, hence no loss of information by using the 26 items instead of the 39. The Confirmatory Factor Analysis (CFA), the second type of factor analysis sought to determine if the number of factors and the loadings of measured items on them conformed to what was expected on the basis of pre-established theory. The CFA plays an important role in determining the significance of the developed instruments used in the study. The CFA tests whether a specified set of constructs is influencing responses in a predicted way. In a typical CFA model, the structural assumptions which were tested are concerned with: (a) the appropriate number of factors, (b) the specific pattern of loadings of each observed variable on these factors, and (c) the relations among the factors (i.e. uncorrelated or correlated factors).

Data were analysed using Microsoft Excel and SPSS version 21 software and the discussion revolved around the Confirmatory Factor Analysis (CFA) of the eleven TQM principles and five service quality dimensions that formed the pillar of the study. In using the Confirmatory Factor Analysis (CFA) in this study, a number of important decisions with respect to how the analysis is performed were made. Specifically, there were major methodological issues that were considered when conducting the factor analysis. First, was the variables (items) included in the study, as well as the size and nature of the sample on which the study was based. Secondly, CFA was found to be the most appropriate form of analysis once the purpose of the analysis was to confirm the existing TQM Principles (Factors).

Prior to the main data collection, items in the survey instrument of internal customers were reduced from 107 to 60 items. Also, the external customers' instruments originally with 39 items were also reduced to 26. The computation of the CFA was to confirm to achieve practical significance of the items used (Arumugam, Ooi, & Fong, 2008; Stevens, 2012). It was also analysed to ensure that the items used in the main fieldwork are correctly placed and applicable in the context of university education services (Priporas, Gatsoris, & Zacharis, 2005).

Data Collection Procedures

The research operated within the cross-sectional design, as data were collected from the institutional top management, middle management in-charge of academic units (the College Provosts), the internal customers (lecturers, administrators (senior members), senior and junior staff and three randomly selected external customers; the students being the Primary customer, employers/business, secondary customer and alumni the tertiary customer of the university. Sekaran (2003), pointed out that the proper selection of data collection methods depends mainly on enhancing the value of the research. In particular, the selected methods should enable the researcher to answer the research questions of the study. Data can be collected in a variety of ways, in different settings and from different sources. When deciding to conduct research, regardless of the type of research, it is important for a researcher to choose the best method of collecting data.

The interviews took place in the interviewees' workplaces (offices). All interviews were conducted face-to-face and throughout the interview, a tape recorder was used, with the approval from the respondents to avoid any ethical concerns and dilemmas (Malhotra & Peterson, 2001). Both the top and middle management were contacted through protocol booking and scheduled appointments for the interviews. The duration of the interviews ranged from 40 to 60 minutes. Seven out of eight targeted management personnel with highly knowledgeable informants were interviewed.

In the case of quantitative data collection, the survey instruments which had been fine-tuned through the assistance from the research supervisors and quality experts I contacted was finally administered to both internal and external customer groups. The instruments developed with references to the University education were then personally administered to targeted participants with the help of two experienced senior research assistants from the Directorate of Academic Planning and Quality Assurance (DAPQA), UCC. The senior research assistant were given training before they were engaged for the exercise. The questionnaires were administered to all the 804 participants selected for the survey.

A total of 370 questionnaires on TQM implementation were administered to the randomly selected respondents of internal customers who were general frontline administrators, lecturers, senior and junior employees. Also, 434 questionnaires on service performances were administered to randomly selected respondents from external customer sub-groups namely, the students (334), alumni (50) and employers (50). The face to face interview of the institutional

management and the administration of the questionnaires to participants were conducted between January and July, 2017, concurrently.

Determining the Validity and Reliability of the Research Instruments

Measurements of validity and reliability constitute the most important criteria in assessing the accuracy of findings obtained in any research (Bryman & Cramer, 2004). It is generally agreed that when a means of measuring a concept is proposed, it must be both valid and reliable. The current study used mixed methods, the qualitative (face-face interviews) and quantitative (survey instrument). Prior to the collection of the data, it was imperative to first evaluate the validity and reliability of the instruments. It is only on the basis of valid and reliable measurement scales that hypothesis testing can be conducted. Neuman (2003), has drawn attention to the importance of the validity and reliability issues in social theory because the constructs that are involved are usually wordy, uncertain and not directly observable.

There were two reasons for making the analysis of validity and reliability very necessary. First, the analysis provided assurance of the responses and findings that they were truthful, credible and therefore convincing (Neuman, 2003). Secondly, the valid and reliable instrument allowed others to replicate the use of the instrument for other comparative studies and with other populations (Flynn, Schroeder, & Sakakibara, 1995). Each instrument developed had some measurement factors (scales). The next section provided methods for empirically testing and validating the validity and reliability of the measurement scales.

Strategies for ensuring trustworthiness in the qualitative research data

Measurements of validity and reliability constitute the most important criteria in assessing the accuracy of findings obtained in any research (Bryman & Cramer, 2002). The trustworthiness of qualitative research generally is often questioned by positivists, perhaps because their concepts of validity and reliability cannot be addressed in the same way in naturalistic work. (Shenton, 2004). Nevertheless, several writers on research methods, have demonstrated how qualitative researchers can incorporate measures that deal with these issues, and investigators such as (Fossey, Harvey, McDermott, & Davidson, 2002; Silverman, 2006) have attempted to respond directly to the issues of validity and reliability in their own qualitative studies. For a more complete discussion of trustworthiness qualitative research is concerned with the accuracy and truthfulness of scientific findings.

In terms of the trustworthiness of the data collected in the qualitative aspect, there are several ways I combated threat to it. First I acquired credibility and dependability, through the developed interview guide and interview procedure used which was ethnically sensitive. Another way I ensured credibility and dependability of the interview data was working with the participants in the same institution as I perfectly understood the caliber of groups they involved in the research. I also ensured credibility, consistency and accuracy by associating myself with many quality experts in the University, including my two research supervisors and lecturers who handled the taught courses in my first year at the institution I offered the PhD. Programme.

Validity and reliability in quantitative research

Validity

The validity of a scale refers to the degree of a contest between the latent factors' conceptual and operational definitions. There should be a relevant association between a concept that a factor (scale) attempts to represent and the empirical indicators that are developed to purportedly measure the concept. Although there are a number of validity measurements, there is no validity in a test unless its reliability is consistent (Ary, Jacobs, Sorensen, & Razavieh, 2010). Numerous types of validity tests are identified, however, in this current study two of the measures of validity were determined namely; the content validity and construct validity (Sekaran, 2003).

The Content validity of a scale refers to the degree to which the items represent the intended field of the concept that the scale is supposed to measure and that the items in the scale cover all aspects of the concept being measured (Neuman 2003). Since content validity is not evaluated numerically, it is subjectively judged by the investigator(s). Thus, content validity depends on how well the researchers created the measurement items to cover the content domain of the variable being measured. Content validity ensures that the measurement scale includes an adequate and representative set of items that represent the concept (Sekaran, 2003). Content validity can be determined by a careful definition of the research topic, and the items included in the measurement scale (Cooper & Schindler, 2001).

Again, content validity is usually ensured through subjective expert reviews and pilot-testing (Narang, 2012). To meet the content validity requirements for this study, an extensive literature review was undertaken to define and clarify the scales and measures used in this research. Many items concerning the implementation of TQM principles and the service quality dimensions were identified based on an extensive review of the existing literature that ensured very high content validity (Sureshchandar et al., 2001, Wong, Sim, Lam, Loke, & Darmawan, 2010). The items in the survey instrument were first pre-tested and reworded to judge the content validity of the instrument. All the suggestions which have been made by experts in quality management were taken into consideration and represented adequately as mentioned earlier.

Construct validity assesses the degree to which the operationalisation of the construct reflects its theoretical meaning (Kim 2006). There is no best or single way to measure construct validity; it is an accumulation of knowledge over time and repeated use with different groups and in multiple settings (Van der Wiele, & Brown, 2000). Thus, Construct validity represents the degree to which the multiple indicators in a scale operate in a consistent manner. If the items it contains all measure the theoretical construct with which the scale is designed to measure then a scale is said to have construct validity (Saraph, Benson, & Schroeder, 1989; Neuman 2003). The reviewed literature about the theories of the five quality experts mentioned in chapter two, and previous investigation conducted on the quality concept and TQM philosophy, as well as advice from the

research supervisors and lecturers contacted ensured the construct validity of the instruments.

Reliability

The reliability of a measure specifies the extent to which it is without bias, hence, ensures consistent measurement across various items in the instrument (Sekran, 2003). Reliability is the degree to which measures are free from error and therefore yield consistent results (Zikmund, 2003). It is defined as the extent to which a test produces consistent, accurate results when administered under similar conditions (Golafshani, 2003). A survey instrument is consistent if the items are highly correlated with each other; therefore, they are likely to measure the same homogenous variable (Moncrieff, Churchill, Drummond & McGuire, 2001).

Although, there are several approaches to measure an instrument's reliability, the most applied method used in this study was the internal consistency method (Saraph et al., 1989), with the Cronbach's alpha coefficient being the most common indicators (Pallant, 2001). Cronbach alpha coefficient is a widely used measure of internal consistency or reliability in all research disciplines. The Cronbach alpha technique is usually used to measure internal consistency reliability, which involves computing mean reliability coefficient estimates, in which the reliability coefficient ranges from zero to one. The instrument has a high degree of reliability if the values of Cronbach's alpha obtained are as follows:

1. If Cronbach's alpha ≥ 0.90 = very high reliability

2. If Cronbach's alpha ≥ 0.70 = high reliability
3. If Cronbach's alpha ≥ 0.50 = quite high reliability
4. If Cronbach's alpha < 0.50 = low reliability

In support of this, George and Mallery (2003), provided the following rules of thumb: if the value of Cronbach's alpha " ≥ 0.9 it is "Excellent"; ≥ 0.8 it is "Good"; ≥ 0.7 is "Acceptable"; ≥ 0.6 is "Questionable"; ≥ 0.5 is "Poor" and ≤ 0.5 is "Unacceptable". However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. In order to ensure reliability the instruments were pilot-tested.

Factor Analysis

Factor analysis is a statistical technique that can be used to analyse interrelationships among large data. When it is done, it will make the data manageable without losing any of its important information, thereby making it easier to test theories (Field, 2009; Tabachnick & Fidell, 2007). The purpose of the factor analysis model is to reduce multiple variables to a lesser number of underlying factors that are being measured by the variables (Suhr, 2006). Field gave three main reasons for using factor analysis. These are:

- i. an understanding of the structure of a set of variables;
- ii. construction of a questionnaire to measure an underlying variable; and
- iii. reducing the variables to a manageable size while retaining as much of the original information as possible.

There are basically two types of factor analysis: exploratory and confirmatory. The Exploratory Factor Analysis (EFA) attempts to discover the nature of the constructs influencing a set of responses. The EFA seeks to uncover the underlying structure of a relatively large set of variables.

Total Response Rate Calculated

At the top management level, one person was unable to participate in an in-depth interview within the stipulated period for data collection (see Table 13). However, the absence of one out of the eight could not have much effect since the saturation point was reached.

Table 13: Total Response Rate Calculated.

Customer-Group	Respondent	Sample Size	Eligible resp. (a)	Ineligible resp. (b)	Total resp. (a + b)	Total Resp. rate (%)
Management	Top-Mang.	3	2	1	3	66.6
	Mid-Mang.	5	5	0	5	100.0
Subtotal		8	7	1	8	87.5
Internal customers (I)	Lecturer	67	52	2	54	80.6
	Admin.	16	13	1	14	87.5
	Senior Staff	133	106	2	108	81.2
	Junior Staff	154	88	3	91	59.1
Subtotal		370	259	8	267	72.2
External customers (II)	Alumni	50	45	1	46	92.0
	Students	334	268	2	270	79.4
	Subtotal	384	313	3	316	82.3
	Employer	50	48	0	48	96.0
Subtotal		434	361	3	364	83.9
Grand Total (I and II)		804	620	11	631	78.4

I had the opportunity also and visited the member participants twice for further probe which helped much in getting almost all I needed about the phenomenon studied. In the case of quantitative respondents, 631 questionnaires out of the total (804) were returned, of which 620 were completed and usable, while 11 questionnaires were either incomplete or ineligible. The overall response rate was 78 percent, which was considered high enough for the study. According to Bell and Bryman (2007), and Saunders et al. (2007), the response rate is calculated by using the following formula: **Total response rate** = Total number of responses/ Total number in sample = $(631/804)*100 = 78.4$ percent or completed response/total number in sample less ineligible, which is equal to $(620/(810-11))*100 = 77.6\%$ approximately 78 percent. The 78 percent was therefore high and adequate to carry out the data analysis.

Data Processing and Analysis

Qualitative data analysis

In the case of the qualitative data analysis, information obtained through the in-depth interview method was subjected to the content analysis processes, which is one of the common approaches for analysing qualitative data (Barnett-Page & Thomas, 2009). Prior to that, the qualitative validity which is the means that the researcher checks for the accuracy of the findings by employing certain procedures was considered. The qualitative reliability indicates that the research approach is consistent across different researchers and other different evaluation projects (Creswell, 2009). The interview procedures were documented

and many steps of the procedures were also documented. Checking of transcripts was made to ensure that they do not contained obvious mistakes.

Content analysis

Qualitative content analysis is defined as a research analysis for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon, 2005). Hsieh and Shannon came out with three approaches to qualitative content analysis, based on the degree of involvement of inductive reasoning. They are conventional, directed and summative qualitative content analysis. In the case of conventional, coding categories are derived directly and inductively from the raw data. For the directed content analysis, the initial coding starts with a theory or relevant research findings. Then, during data analysis, the researchers immerse themselves in the data and allow themes to emerge from the data. The purpose of the directed approach usually is to validate or extend a conceptual framework or theory. The third approach is summative content analysis, which starts with the counting of words or manifest content, then extends the analysis to include latent meanings and themes.

The unit of analysis in this example is in-depth interview text to ascertain the institutional management awareness (knowledge and understanding), the TQM implementation strategies and process being practiced, as well as the implementation barriers of TQM principles at the University of Cape Coast (UCC). The context consists of a larger study aimed at total evaluation of the TQM practices being practised in the University. A total of seven, made up of two

top management and five Middle management (College Provosts) were interviewed. In conventional content analysis (Anfara, Brown, & Mangione, 2002), adopted in this study, the coding categories were derived directly from the text data and involves six steps. They are: getting to know the data; labeling relevant pieces; creating of coding (themes); labeling of themes and interpretation of the themes.

Step 1: Getting to know the data, by reading the transcripts (Patton, 2002). I read through all the transcripts and made notes about the first impression I had. I continued reading carefully and also read line by line.

Step 2: I started the labeling of relevant pieces with the help of reviewing the purpose of the research and the research questions pertaining to the qualitative aspects of the main research. This process is called coding or indexing. I had 21 codes from the transcript data.

Step 3: After the data had been coded, the most important codes were identified and also several codes brought together and formed categories. I went through all the codes created in the previous step and had eight groupings. I got the themes by putting comparable codes together to have one meaning. The themes are:

- i. Management awareness with the concept of quality and Quality Management Systems (QMS);
- ii. Management awareness with TQM and other quality approaches;
- iii. Institutional management understanding of quality maintenance and continuous improvement;

- iv. University management recognition of the various institutional customers;
- v. The familiarity of management with internal customers' involvement in QMS;
- vi. Management recognition of the significant relationship between TQM practices and service performance;
- vii. How TQM is being practiced in the University of Cape Coast; and
- viii. Barriers to TQM implementation in University of Cape Coast

Step 4: The next action was the labeling of the themes or categories and taking the decision on which of the themes were the most relevant and how they were connected to each other. It is worth noting that the categories and the connections were the main results of the study in question.

Step 5: At this stage, there were some options to make a decision on. Look through the themes if there is a hierarchy among them or if it was possible to see one theme being more important than others. From the information gathered, I did consider the seven themes all relevant according to the research questions 1 and 2.

Step 6: The final stage was the interpretation which is the process of bringing all together and looking at the meanings for the categories and patterns. This is where I wrote up the results by expressing them under the heading "results". I described the themes and how they were connected and discussed the results. I tried always to compare them to similar researches done and published in journals, as well as theories and concepts I am familiar with.

Nvivo software procedure

In order to fulfill the step two and subsequent steps as discussed, there was the need to get the software to enable me to complete the qualitative analysis to have meaning. In this regard, Nvivo versions 8 and 11 procedure was studied and followed. After handwritten notes were taken, when all the in-depth interviews and discussions were transcribed and completed, the coding techniques were followed with the Nvivo procedure. However, the seven interviewees were considered not to be too large. The responses were then put under themes. Finally, with the help of Microsoft Excel, the analysis was done following the Nvivo process. The processes were as follow:

Nvivo coding process and terms used

In Nvivo, one needs to create containers to put all the identified relevant information from the transcribed data into them. They are called Nodes, hence all the relevant information identified was put in their respective Nodes. With regard to my work, I had 21 nodes, labeled them and put them in statement form and wrote a memo for each. From this point, I used Microsoft Excel 2010 to create 25 columns. The first four columns were for the background information of the interviewees. They were: ordered number, the symbol used to represent the interviewee, current position and number of years spent with the university. The next 21 columns were for the Nodes created, while seven rows were also created with a row for each interviewee.

Type of nodes

After identifying the 21 Nodes, I merged some of them in order to have a meaning. All the time, I was focusing on how to address the research questions pertaining to the qualitative data. In Nvivo, putting some Nodes with similar meaning can be put together in other containers to give the name Parent Node. The Nodes that are put together are called child Nodes. The parent nodes are referred to as the categories or the themes. The Nvivo procedure helped me to have eight parents Nodes (Themes). I then went back to the Excel software and created one row above the existing data computed and labeled the names given to the seven parent nodes to each grouped child Node accordingly.

Deciding on how to generate data

The Nvivo software gives three options in deciding how to generate and label nodes or codes. I chose the first option (Bazeley & Jackson, 2013). The first is to identify relevant information in the transcribed data. Secondly, you assign a word or phrase (a concept) that best represent the relevant information. It is imperative to make sure it is consistent with the research question(s). The last action is to document why the information or Node is important (by taking note of your thought about the code-using memo option).

Quantitative data analysis

Data analyses for the quantitative aspects were done in two steps, the preliminary analysis, and the main analysis. For preliminary analysis, the demographic characteristics of the respondents were outlined. This was done with descriptive statistics, namely: frequencies, a pictorial form of presentations and

means to summarise the data. The second part of the main analysis of the study involved the techniques concerned with describing and characterising quantitative data collected. The evaluation of validity and reliability of the instruments used through factor analysis and descriptive statistics such as means, standard deviation, and frequency tables. The mean differences between customer sub-groups, important index, effect sizes, and service gaps calculations were determined.

Descriptive statistics

Selecting the right statistical methods depends on the nature of data and the nature of the relationship between the method and the research questions. Therefore, this study used what is relevant to research questions 3 and 4 which focus on the quantitative aspect of the study. The descriptive statistics such as means, standard deviation, and frequency tables are techniques which are concerned with describing and characterising the main data collected. This is accomplished through the ordering and manipulating the raw data collected (Sekaran 2003).

Homogeneity Test of Customer Perception on Quality

The chi-square goodness-of-fit test was used to determine whether a distribution of data or scores for one nominal (categorical) variable matches expectations for that distribution. The chi-square goodness-of-fit test is a single-sample nonparametric test, also referred to as the one-sample goodness-of-fit test or Pearson's chi-square goodness-of-fit test. I used to determine whether the distribution of cases (e.g., participants) in a single categorical variable follows a

known or hypothesised distribution. When you carry out a chi-square goodness-of-fit test, "hypothesising" whether you expect the mean of cases in each group of your categorical variable to be "equal" or "unequal" is critical.

This analysis will determine how the chi-square goodness-of-fit test is carried out in SPSS Statistics, as well as results interpretation. For the SPSS Statistics procedure and interpretation of the chi-square goodness-of-fit test, first, there is the need to understand the different assumptions that the data must meet in order for a chi-square goodness-of-fit to give you a valid result. When you choose to analyse your data using the chi-square goodness-of-fit test, part of the process involves checking to make sure that the data you want to analyse can actually be analysed using a chi-square goodness-of-fit test. The first assumption is to have one categorical variable being dichotomous, nominal or ordinal. The data of the study are dichotomous variables (expectation and perception), nominal variables (the customer groups) and ordinal variables (the five-point Likert-type scales). The second assumption has to do with the independence of observations, which means that there is no relationship between any of the cases (the respondents). The third assumption is that the customer-groups of the categorical variable must be mutually exclusive and the respondents could only be in one of the four sub-groups that is the external customers. The final assumption is that there must be at least five expected frequencies in each group of the categorical variable.

The homogeneity test of customer-perceived service quality using a chi-square distribution was conducted to test if there are differences in perceptions

among the various customer-groups. After collecting data from expected individual participants of the various customer-groups in the university, the Chi-square test of association was applied to assess if the relative means of perceived service quality with respect to the dimensions of service quality is associated with the selected customer-groups of the universities. The Chi-square test was done to determine whether there are significant differences between the customer-groups and their perceived service qualities. The Chi-square test was utilised to determine whether customer-perceived service qualities could be associated with their groups.

The following statistical hypotheses were explored:

The null hypothesis (H_0): $\mu_1 = \mu_2 = \dots = \mu_5$ and the alternative hypothesis (H_1): $\mu_1 \neq \mu_2 \neq \mu_3 \neq \dots \neq \mu_5$; where μ_i is the mean of the customer-groups level of agreement to the statements made under each of the five dimensions of service quality, $i = 1, 2, \dots, 5$

Test Statistics:

$\chi^2 = \sum \left(\frac{P_{\mu_i} - E_{\mu_i}}{E_{\mu_i}} \right)^2$ where χ^2 is the calculated chi-square, P_{μ_i} = the perceived service quality means of customer groups level of agreement to the statements and E_{μ_i} = Expected service quality mean of customer groups level of agreement to the statements, of which χ^2 is compared with tabled chi-square value, $\chi^2_{\alpha(c-1)(r-1)}$,

where H_0 is rejected if $\chi^2 \geq \chi^2_{\alpha(c-1)(r-1)}$,

Paired Samples t-test and Effect Size

In this study, both the internal and the external customer sub-groups constituted the categorical variables that responded to the survey instruments for the level of TQM implementation and service quality delivery, respectively (Steyn, 2000). All the customer subgroups responded to Likert-scale type questionnaires ranging from option 1 to 5. The study ascertained the existence of differences in their responses and the magnitude of the effect. In reporting and interpreting studies, both the statistical significance (p-value) and substantive significance (effect size) are essential results to be reported. The p-value cannot be interpreted until the null hypothesis being tested is known.

The p-value answers the question of when the groups are sampled from populations with identical distributions, what is the chance that random sampling would result in the mean responses being as far apart as observed in the study. The interpretation is that, if p-value is small, you can reject the null hypothesis that, the difference is due to random sampling and conclude by saying the population is distinct. When the P-value is large, the data do not give you any reason to reject the null hypothesis which says that, the two populations are the same. The t-test gives the probability that the difference between the two means is caused by chance. It is customary to say that if this probability is less than the given alpha (common α values used are 0.01 and 0.05), that the difference is 'significant', and that, the difference is not caused by chance.

Effect size helps readers to understand the magnitude of differences found, whereas statistical significance (p-value) examines whether the findings are likely

to be due to chance. Both p-value and effect size is essential for readers to understand the full impact of any research. Whereas P-values inform the readers of the existence of the effect, it will not reveal the sizes of the effect. In this regard, the potential group differences were explored by calculating Cohen's (1988) d-statistic or effect size, which is a measure of the practical differences between groups (Algina, Keselman & Penfield, 2006). According to Cohen (1988), 0.2 = small effect, 0.5 = medium effect and 0.8 = large effect. This current study determined whether there were differences between the mean responses of the internal customer sub-groups and also the external customers' expectations and perceptions, as well as the mean responses of the sub-groups. After the P-values of the quality dimensions are determined, the effect sizes of using Cohen's (d) statistics were computed.

Cohen's d statistics (effect size): Cohen's d is known as the difference of two groups' means and it is divided by the standard deviation from the data.

$$d = \frac{\bar{x}_1 - \bar{x}_2}{s}$$

Mathematically Cohen's d statistics (effect size) is denoted by

Where s = standard deviation and calculated using this formula:

$$s = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2}}$$

Relative Important Indices (I.I) Analysis

Fowler and Floyd (1995), defined ranking as a comparison among given options, within pairs of options, by the cardinality of importance (first, second, third), or that score item one at a time using a common scale, and it also determines the importance of that factor. In this study, Importance Indices were

used to rank the variables for both TQM principles and service quality dimensions. The Importance Indices (I.I) of determination of significance of factors was adopted because, Enshassi, Mohamed, Mustafa, and Mayer (2007), asserted that to analyse data on ordinal scale like the five-point Likert scale used in the study, the application of Importance Indices is necessary and suitable for interpretation of the findings.

Important Indices facilitates the identification of the level of significance of the constructs contributing to the successful implementation of TQM in the university. A ranking of importance indices was undertaken to ascertain the most influential of the quality dimensions. Having identified the TQM principles and service quality dimensions for successful implementation of Total Quality Management in the University, it was necessary to rank the principles and quality dimensions according to their relative importance from institutional customers' perspective and it was determined by the formula below.

$$\text{Important Index (I.I)} = \frac{(5n_5 + 4n_4 + 3n_3 + 2n_2 + n_1) * 100}{5(n_5 + n_4 + n_3 + n_2 + n_1)}$$

Where:

n_1 = number of respondents who answered option '1'

n_2 = number of respondents who answered option '2'

n_3 = number of respondents who answered option '3'

n_4 = number of respondents who answered option '4'

n_5 = number of respondents who answered option '5'

The Importance Indices (I.I) for each item were calculated. The quality dimension or factor index for each was calculated by taking the average of the Importance Indices of the items in each core area or factor

Service Quality Gap Scores Analysis

In study literature, there are seven major gaps in the service quality concept and the model was an extension of Parasuraman et al. (1985) which are defined as follows:

- i. **Gap1: Customers' expectations versus management perceptions:** as a result of the lack of a marketing research orientation, inadequate upward communication and too many layers of management.
- ii. **Gap2: Management perceptions versus service specifications:** as a result of an inadequate commitment to service quality, a perception of unfeasibility, inadequate task standardisation and an absence of goal setting.
- iii. **Gap3: Service specifications versus service delivery:** as a result of role ambiguity and conflict, poor employee-job fit and poor technology-job fit, inappropriate supervisory control systems, lack of perceived control and lack of teamwork.
- iv. **Gap4: Service delivery versus external communication:** as a result of inadequate horizontal communications and propensity to over-promise.
- v. **Gap5: The discrepancy between customer expectations and their perceptions of the service delivered:** as a result of the influences exerted from the customer side and the shortfalls (gaps) on the part of the service

provider. In this case, customer expectations are influenced by the extent of personal needs, word of mouth, recommendation and past service experiences. The customer perceptions on the other hand are influenced by the experiences and observations gained by the customers after having relationship with the service providers.

- vi. **Gap6: The discrepancy between customer expectations and employees' perceptions:** as a result of the differences in the understanding of customer expectations by front-line service providers.
- vii. **Gap7: The discrepancy between employee's perceptions and management perceptions:** as a result of the differences in the understanding of customer expectations between management and service providers.

Computation of the Level of TQM Implementation

The third research question of this study aimed at determining the level of TQM implementation in the University of Cape Coast through the internal customer-group. The research question examined “the extent to which the internal customers perceive the current TQM practices being practiced in UCC” The hypotheses formulated were based on the literature review and previous research, in order to meet the research questions of the study and find possible explanations for the investigated relationships among variables (Sila & Ebrahimpour, 2002). To achieve the purpose, the hypotheses for measuring the level of TQM implementation in UCC were formulated prior to the important index ranking (Al-Marri, Moneim, Baheeg, & Zairi, 2007; Oakland, 2014; Salaheldin, 2009).

The level of TQM implementation was measured by a group of items on the eleven TQM principles built on a five-point Likert scale (Extremely low = 1, Low = 2, Moderate = 3, High=4 and Very highly = 5). The internal customers (respondents) were asked to state the extent they see the TQM principles being implemented by institutional management with the given statements. The range and interpretation of the rating scales were determined by 5 (maximum value) minus 1 (minimum value) = 4. In order to identify the length of each scale (statement), the range value of 4 was divided by the number of options (5), thus, $4/5 = 0.80$ (Diamond & Jefferies, 2001).

The upper limit value for each option was then determined by adding 0.80 to the code figure given (1, 2, 3, 4, and 5) as shown in Table 14 for the scale ranges and interpretations for the level of TQM implementation.

Table 14: Scale and Interpretation for the Level of TQM Implementation

Option Value	Level of implementation	Scale range
1	Extreme low	1.00 to 1.80
2	Low	1.81 to 2.60
3	Moderate	2.61 to 3.40
4	High	3.41 to 4.20
5	Very high	4.21 to 5.00

(Fieldwork, 2017)

The hypothesis was computed as follows:

a. TQM implementation is extremely low when:

H₀: The level of TQM implementation in UCC is rated “extremely low”

H₁: The level of TQM implementation in UCC is rated higher than “extremely low”. When, **H₀: mean < 1.80; H₁: Mean > 1.80**

b. TQM implementation is low when:

H₀: The level of TQM implementation in UCC is rated “low”

H₁: The level of TQM implementation in UCC is rated higher than “low”

When, **H₀: mean < 2.60; H₁: mean > 2.60**

c. TQM implementation is moderate when:

H₀: The level of TQM implementation in UCC is rated “moderate”

H₁: The level of TQM implementation in UCC is rated higher than “moderate”.

When, **H₀: mean < 3.40; H₁: mean > 3.40**

d. TQM implementation is high when:

H₀: The level of TQM implementation in UCC is rated “high”

H₁: The level of TQM implementation in UCC is rated “very high”

When **H₀: mean < 4.20; H₁: mean > 4.20**

Computation of the Level of Importance and Satisfaction

The fourth research question of this study explored the effects of TQM implementation on overall service quality performance in UCC (Yong & Pheng 2008; Zu, Robbins, & Fredendall, 2010). Education is a service and it is a process that develops character by imparting intellectual, moral and social values. Service quality is about customer’s perception of specific dimensions of services, while satisfaction is about the perception of service quality (Olaleke, 2010; Zeithaml & Bitner, 2000; Shekhar, Rao, & Subbaiah, 2010). Institutional external customers developed expectations prior to the establishment of the relationship with the

institution. The customers' satisfaction is determined through the perception after experiencing the outcome that fulfilled his or her expectations (Hasan, Ilias, Rahman, & Razak, 2008).

The following hypotheses were developed based on the literature review and previous research, in order to meet the research purpose and find possible explanations for the investigated relationships among variables (Sila & Ebrahimpour, 2002; Al-Marri et al. 2007; Salaheldin, 2009). Institutional external customers developed expectations prior to the establishment of the relationship with the institution. For accountability, it is imperative for the university to understand the expectations of the external customers as they are being selective in their choice of an educational institution for their studies (Sukwadi, Yang, & Liu, 2011). In this study, the external customers' expectation determined how important are the selected service dimensions; Core service or service product; the human element of service delivery; Systematization of service delivery (non-human element); Tangibles of service (servicescapes) and Social responsibility.

Their perceptions determined their level of satisfaction. The customers' satisfaction is determined through the perception after experiencing the outcome that fulfilled his or her expectations (Hasan, Ilias, Rahman, & Razak, 2008). Service quality is about customer's perception of specific dimensions of services, while satisfaction is about the perception of service quality (Ogunnaike & Olaleke, 2010; Shekhar, Rao, & Subbaiah, 2010). The perceived service quality was measured in two major parts with first part built on a five-point Likert scale (highly unimportant = 1, Not important = 2, moderately important = 3, Important

= 4 and highly important = 5). The other part consist of similar items but the options talk about the level of satisfaction of the items after gaining experience with them also on five-point Likert scale (**very unsatisfactory = 1, unsatisfactory = 2, satisfactory = 3, good = 4 and very good = 5**). In developing the ranges, the difference between the upper limit and lower limit values was divided by five, the total options $[(5-1)/5= 0.80]$. The upper limit value for each option is then determined by adding the dividend (0.80) to each of the coded figures (1, 2, 3, 4) except the maximum (5). The Levels of Importance and Satisfaction ranges and their interpretations format were subsequently established as shown in Table 15.

Table 15: Summary of the Range of Scales and their Interpretation

Options	Expectation	Perception	Scale range
Value	Level of important	Level of Satisfaction	Means
1	Highly unimportant	Very unsatisfactory	1 to 1.80
2	Not important	Unsatisfactory	1.81 to 2.60
3	Moderate important	Satisfactory	2.61 to 3.40
4	Important	Good	3.41 to 4.20
5	Highly important	Very good	4.21 to 5

(Source: Field data, 2017)

The hypotheses were computed as follows:

a. Service quality dimension is Highly Unimportant/very unsatisfactory

when:

H₀: The level of expectation/perception is rated “unimportant/very unsatisfactory”

H₁: The level of expectation/perception is rated higher than “unimportant/very unsatisfactory”

When, **H₀: mean < 1.80; H₁: Mean > 1.80**

b. Service quality dimension is not important/ unsatisfactory when:

H₀: The level of expectation/perception is rated “unimportant/ unsatisfactory”

H₁: The level of expectation/perception is rated higher than “unimportant/unsatisfactory”

When, **H₀: mean < 2.60; H₁: mean > 2.60**

c. Service quality dimension is moderate important/ satisfactory when:

H₀: The level of expectation/perception is rated “moderate important/satisfactory”

H₁: The level of expectation/perception is rated higher than “moderate important/satisfactory”

When, **H₀: mean < 3.40; H₁: mean > 3.40**

d. Service quality dimension is important/ good when:

H₀: The level of expectation/perception is rated “important/good”

H₁: The level of expectation/perception is rated higher than “important/good”

When **H₀: mean < 4.20; H₁: mean > 4.20**

e. And when the mean > 4.20 then level of expectation/perception is rated “highly important/very good”

Ethical Procedures

Upholding individuals' rights to confidentiality and privacy is a central tenet of every research activity. For instance, researchers need to devise ways to ask whether participants are willing to participate without putting them in

awkward situations. I discussed the limits of confidentiality by given participants information about how my research data will be used, what will be done with the information solicited as well as audio recordings, and secured their consent. Nonetheless, the study was a normal educational practices, and therefore anonymous questionnaires were used, for which disclosure of responses would not place participants at risk or damage their employability.

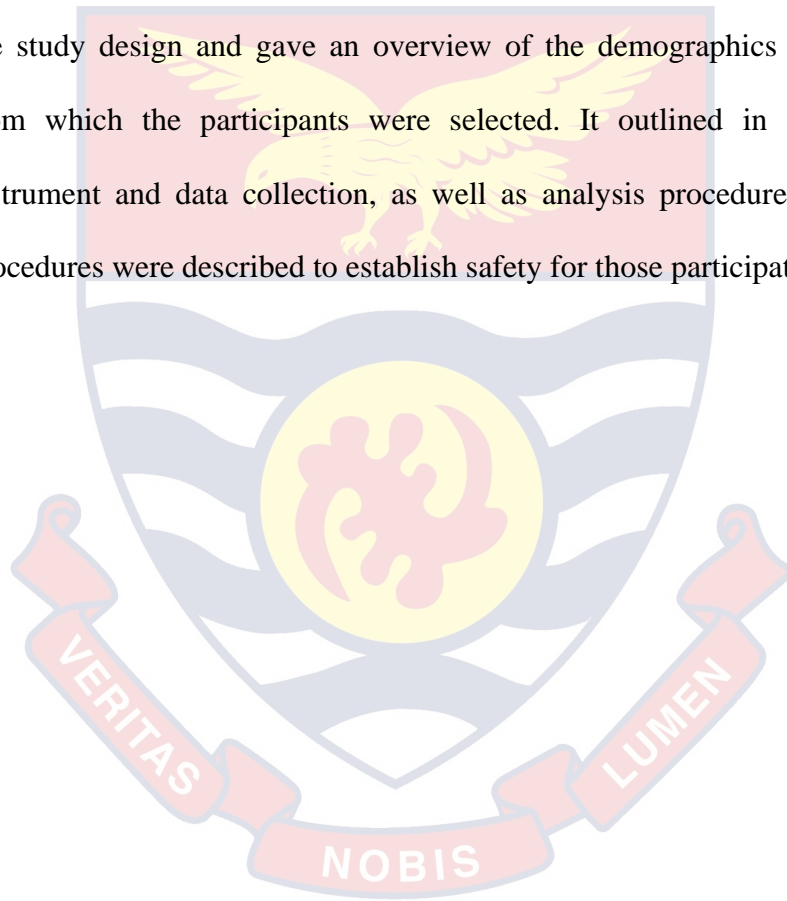
Prior to the interview, letters were written to the management participants and obtained appropriate professional consultations. Before recording the voices of participants to whom they provided information, I obtained permission from all the interviewees. They are in higher positions of the University and therefore cannot do recording without informed Consent for recording voices. When consulting with the participants involved, I assured them not to disclose confidential information that reasonably could lead to the identification of them as research participants.

This study obtained the University of Cape Coast Institutional Review Board (UCC-IRB) approval before the commencement of data collections of study subjects for both the piloting of the research instruments and selection of study participants. I conducted the study under UCC-IRB approval letter given as normally the case for studies within or outside the scope of the institution being studied. As there was no intervention with this study, only asking participants for their views on quality management, the adverse events were minimised given a response rate of 78.4 percent in general. I anonymised the data by assigning each person a number before the beginning of the face-to-face interview, as well as the

survey participants coded to hide their identity. I confidently maintain that even though the study was related to organisation effectiveness, thus evaluation of an institution's performance and conducted in educational settings, there is no risk to participants' employability, and confidentiality is protected.

Summary

This chapter outlined the methodology for the study. It described in detail the study design and gave an overview of the demographics of the population from which the participants were selected. It outlined in detail the survey instrument and data collection, as well as analysis procedures. Finally, ethical procedures were described to establish safety for those participating in the study.



CHAPTER FIVE

RESULTS AND DISCUSSION OF QUALITATIVE DATA

Overview

This chapter is the presentation of findings and analysis of the qualitative data obtained from the interview. The presentation and analysis of the data are related to the research questions one and two that guided the qualitative aspects of the study. The discussion focuses on the main purpose which is the total evaluation of TQM implementation at the University of Cape Coast.

This chapter is divided into five main sections. In the first section, the overview and the background information of the management participants interviewed are described. The second section deliberates on the information solicited through in-depth interview which addresses research questions one. The research question one determined the institutional management experience, knowledge and understanding (awareness) of the TQM implementation in the University of Cape Coast. The third section discusses the findings that answered the research question one. The fourth section addressed the research question two which was on the main barriers or confronting challenges to the TQM implementation in the University. The fifth section considered the discussions of the findings that answered research question two.

The qualitative part of this research study is a fundamental method of collecting valuable data by seeking out the “what” and “how” of the phenomenon (Silverman, 2015). It does not deal much on descriptive statistics or numeracy, but rather focus more on gaining insights into human attitudes, understanding

precise phenomena, content, and culture by analysing the data obtained (Birks & Malhotra, 2006). This study adopted the in-depth interview procedure for the collection of qualitative data from both institutional Top management and Middle management in-charge of academic units of the University.

The following acronyms were used in the analysis to describe the two Top Management (TM) personnel, the Pro-Vice-Chancellor (TM1) and the Registrar (TM2) participated in the interview. The five middle management respondents (Provost of the Colleges) were also referred to as MM1, MM2, MM3, MM4, and MM5. The first and second research questions were to determine the institutional management recognition of the TQM as an approach to the quality management system and the barriers that have had an effect on TQM implementation in the University, respectively.

Management Respondents' Background Information

This section describes the management participants involved in the study with respect to their demographic variables such as; gender; managerial level; educational level and years of experience. The information involves descriptive statistics in the form of a table in this section. Table 16 depicts the characteristics of institutional management participants. They are the two top-management and five middle-management interviewees. In all, there were six males and one female. Six out of the total number held Doctor of Philosophy degree as their highest educational attainment. In terms of experiences gained, all the management participants had been with the University for over 15 years.

Table 16: Characteristics of Management Participants (Interviewees)

Background	Frequency	Percentage
Gender		
Male	6	85.7
Female	1	14.3
Managerial Level		
Top Management	2	28.6
Middle Management	5	71.4
Highest educational level		
Master/Mphil Degree	1	14.3
Ph.D. Degree	6	85.7
Number of years of experience		
Above 15 years	7	100.0

(Source: Field Data, 2017)

Presentation and Discussion of Findings of Research Question One

In order to present and analyse the data that were developed from the in-depth interview, eight major themes were used. Seven out of the eight major themes consisted of the main areas of investigative interest that answered the research question one, while the eighth theme answered the research question two. The eight themes are listed as follows:

1. Management awareness with the concept of quality and Quality Management Systems (QMS)
2. Management awareness with TQM and other quality approaches
3. Institutional management understanding of quality maintenance and continuous improvement
4. Management Recognition of their Institutional Customers
5. Management Familiarity with Institutional Customers' Involvement in QMS
6. Significance relationship between TQM practices and service performance, and

7. Management commitment to TQM being practiced in the University of Cape Coast

8. Barriers to TQM implementation in University of Cape Coast

Research question 1: *How does the Institutional Management Acknowledge the TQM as an Approach to Quality Management System in the University of Cape Coast (UCC)?*

Theme 1: Management Awareness of the Quality Concept and Quality Management Systems (QMS)

There was the need to have deep knowledge about the concept of quality and how quality is managed in the institution first when talking about the Total Quality Management (TQM) concept. The quality management system does not only talk about the quality aspects, but also those to be involved to achieve quality. Quality awareness extends to the way in which managers acknowledge the concept of quality.

One response from top management group was that quality is to provide what you are supposed to do. Quality should be excellence and need to satisfy the consumer of the product. It is a matter of giving to your client what they want from you. One top management said, “...*With our university, we need to provide quality education to fit for the purpose and seek for the name acclaimed to the university, “the University of Competitive Choice”* (TM1).

The second respondent of the top management level explained the concept of quality as the attainment of excellence and said, “...*Quality is the attainment of excellence, and the implication is that quality is achieving excellence in all that we do*” (TM2).

In the case of middle management interviewees, two of them were of the view that, with the quality concept, there is supposed to be a standard and it should be set in such a way that when the work is performed to that standard, then the expected quality is achieved. One of the Provosts stated that, “... *If you are able to achieve the standard, you can say that you are working to that level of quality standard*” (MM1). Another middle management respondent iterated that, “...*whatever programmes running, measures that need to be projected to ensure that, they are running properly to achieve the objectives, then whoever is receiving the service is satisfied with it and that refers to as quality*” (MM3).

As evident, some of the participants indicated that quality is not the programmes only, rather it is the totality of infrastructure, the personnel, in particular, the modules and study centres, everything that will make the students become comfortable to study and acquire the necessary skills. That is anything that goes into helping the students to realise their learning objectives is quality (MM2). One respondent said, “...*quality obviously relates to how something is acceptable to all stakeholders involved so that in the end everybody will be satisfied and happy about it*” (MM3).

Another respondent stated that, “...*I know that quality in terms of our business as education is about meeting the stated academic standard so that what is provided should be measurable*” (MM4). One of the middle management respondents (MM5) said, in defining quality, it depends on what aspect of the work in the university you are looking at. He said, “...*I have an interesting view that quality is not a static thing that we can point out, quality depends on the time*

and even different institutions will have different quality standards set up” (MM5).

Quality and service industries

Some responses from the previous research on quality concept were that quality is meant for manufacturing industries and not applicable to service industries including educational institution (Dahlgaard, 2011; Lagrosen, Seyyed-Hashemi, & Leitner, 2004; Vinzant & Vinzant, 1996). A Top management respondent (TM1) noted that, in contemporary times, service organisations are competing and if we look at Universities, the public ones are not only competing with the private ones, but are also competing among themselves. Therefore, the level of service and the quality of service rendered to the public would determine the patronage of that particular University. He said, “*...to me the argument that quality is for manufacturing industries and therefore cannot be applied to the education sector, for me it does not hold*” (TM1).

Another top management respondent, TM2, shared similar view by saying that, quality is necessary for all areas of human endeavour not only in manufacturing industries, because we are looking at the end product so, in terms of achieving the vision and mission of the University, ours is to develop human capital from the education sector for all sectors of the economy to accelerate national development. He iterated that;

...we are looking at quality in terms of the caliber of human beings we produce; the calibre of man-power we produce; the calibre of teaching we do; the quality of teaching we do; the product that we send out; their performance and how their performance reflects on the total national development and global development (TM2).

All the five middle management respondents were of a similar view that quality is not meant for manufacturing industries only, rather it should be practised in the education sector as well. One of the middle management respondents said;

...It is important that higher education institutions ensure quality because they are training a generation of people who will manage the affairs of the nation; incorporate organisations; in their own families and the society as well. There is the need, therefore, to ensure that our products will be able to satisfy the needs or expectations of our customers (MM1).

Another middle management respondent said “...*Oh Yes, it will apply to anything that is meant for either our use or benefit, whether manufacturing or service, quality is a very important issue [MM2]*”. From respondent (MM4), quality is not only for the manufacturing industries, because when you look at the education system, but the quality is also about making sure that the whole package of education meets the expectations of the students or their parents or whoever sends the student to that institution. The respondent said;

...if you take our university, for instance, quality is about producing graduates who will fit into the society and be useful not just graduates but those who will be useful to the society because the society needs them. He iterated that, Society has an expectation that the kind of graduates that we send out should meet a certain standard and there is the need to maintain the quality that will meet the expectations of the stakeholders, the society at large (MM4).

Respondent (MM5), agreed that education cannot do away with the quality because it is not only for academic programmes. We can also look at non-teaching work which is one of the services being provided by the university.

Quality in the education context

On whether managing quality in education should be different from that of manufacturing and other service industries, all the respondents saw some

differences and similarities in managing quality in the education service and manufacturing industries. One top-management respondent said;

...the principles are the same but there are differences with the applications, it is the implementation that differs. He continued to say that, the application becomes different because while machines can easily be predictive, human beings cannot be predictive and so many things are to come in (TM1).

According to the respondent (TM2), applying quality mechanisms in the education sector is necessary because there are varying institutions in the world and the product of these institutions (graduates) are going to compete in the job market place. He said;

...if the products coming out of the institutions are not of higher quality, it means they are not competitive enough. Nevertheless, in education like other industries apply quality in all operations. The University law for instance, which defines what we are supposed to do (the core values) and the Corporate Strategic Plan have really enshrined the values, we aspire to achieve the mission and vision (TM2).

One middle management respondent, however, observed that “...even though the applications of quality are the same, it is difficult to perceive a product from Education Institutions, the same way as a product from a typical manufacturing sector” (MM2). Another respondent from middle management level was also of the view that,

...quality applications are somehow similar to all organizations, however, they cannot totally be the same because the products are different so the approaches will be different. We are dealing with human beings while others are dealing with inanimate objects or non-human (MM3).

Another respondent indicated that manufacturing industries deal with machine parts and inputs. He said that:

...while in education, it is not the case because the inputs are all human beings, students, lecturers, facilitators, administrators and all kinds of

people. there is the need to put some measures in place so that we satisfy the product as well as those who use the product. Human beings are different so we have an additional responsibility to make sure that our quality meets what is expected (MM4).

Quality management systems in operation at UCC

Another verification gathered during the interviews was on operational quality management systems at the University. One Top management respondent was of the view that quality management systems in the University are not well implemented. He said, “...*If we talk about the quality management system, in theory, I will say yes, but in practice in terms of implementation, it is a bit daisy*” (TM1).

With reference to the very existence of the vision and mission of the University, he said that:

...the vision has operational schemes, evaluation schemes and if all these schemes are made very well, then that provides a quality management system. Now we have quality assurance directorate that in a way coordinate all others for quality. Aside, the university has an academic board that ensures that particular academic activities go on well. All these things will feed into a system and when it comes to implementation there are issues (TM1).

However, another respondent from the top management level (TM2) said that the University has a quality management system in place. He said that:

...We have more than necessary, we have all the structures, we have the systems and procedures, we have the legal framework, the regulative framework for attainment of quality, and we have the rules and regulations in all areas, academic, administration, technical and so on and so forth. above all, we have the quality assurance mechanism set in the University to assure students that, they will get what they want (TM2).

In the case of the middle management respondents, they all agreed that the University is operating the quality management system. However, they found that it was not being fully implemented, hence not allowing the University to reap its full benefits. One respondent said that:

...so we talk about it but what I see falls short of the kind of quality that I have come to understand over the years I have been in this institution. In my opinion, the desire is there to help, however, its implementation and measurement must be ensured in such a way that we don't just say it, rather, we actually have to achieve the results. I want to say that, I see the quality in a very broad dimension and I see that in the University when you start talking about quality, the staff, in general, think that you are talking about what we do in the classroom only (MM1).

Another respondent iterated that:

...So far as the University has established quality assurance directorate in charge of quality issues, there is a quality management system....quality in terms of how lecturers are performing their function, the conditions under which students learn, so there are systems in place to ensure that these are done. The lecturers are doing their work well, other staff and students keep the environment clean, and there are systems in place to ensure all these, of course, it's a bit difficult and uneasily sees the effect on the environment and the students (MM2).

Another respondent also stated that:

...of course, we do have, UCC was the first to establish the quality unit and the documented policy and the other Universities in Ghana learned from us and once we have the Directorate of Quality Assurance, yes of course we have. Maybe we are not working as expected but we have (MM3).

Two middle management respondents, MM4 and MM5 were in support of the operation of quality in the University, however, they expressed dissatisfaction with the operating system. One of them said, *"...the operating system is not at the level that we all want but I think we have a quality management system in the*

university” (MM4). The other respondent (MM5), put it in a question form; “...Yes, we have, but to what extent is it working in the practical aspect? I think the way the system is set up is quality management but, it does not work the way it should and that is the issue” (MM5).

How management ensure quality in their domain

Information was sought from the interviewees on how they manage quality in their administrative activities. How they acknowledged the quality concept and the approaches will eventually determine the quality management implementation strategies. One top management respondent agreed that basically, it was his responsibility to ensure academic excellence so that all the departments and systems that contribute towards academic activities in the University were followed. However, his duty schedules did not allow that, unlike other places where those in that position allowed them to focus strictly on academic issues. He said:

...in this institution, I do not only focus on academic, as I am supposed to look at outfit programs also, look at the aspect of administration and so it is very difficult. However, in my office, we have a quality management system in the sense that we link up the Colleges and the Directorate of the Academic Affair to ensure that, examination unit operates well and the Departments are providing services that will meet the needs of students (TM1).

The respondent, TM1, continued to explain that, his office works through Committees that are related to operationalising Strategic Plan of the University and through that, monitoring comes in to ensure that decisions are implemented. Respondent, TM2, also iterated that, his office manages quality since, they want to be a University with worldwide acclaim *“the University of Competitive*

Choice”, and that has a lot of implications for teaching, research and outreach services. His office employs a mechanism in managing quality. He said:

...the university is really serious about quality and if you take our recruitment process, the quality assurance is there, not just a mere submission of application and it is done. It goes through various levels, the recruitment processes. All the systems and procedures are there to ensure that we achieve value for money, those that we recruit are up to a certain standard from the Departmental levels to Faculty levels to College levels to University-wide levels (TM2).

The middle management respondents accepted that they manage quality in their Colleges. One made mention of leadership style, as a very important factor, since as a leader, you influence. As a leader, you need to influence people to enable you to achieve your target. He said that:

...the way you can influence your staff is through motivation, giving them appropriate training and also how you interact with them. Therefore, we have a role to play as provosts in charge of Colleges when it comes to quality improvement. And to ensure that quality is achieved, areas like provision of resources at the workplaces; the necessary materials to work with; effective communication and making people understand what we mean by quality are all relevance (MM1).

According to another respondent:

...Provost is a vital position and there should be a way of finding out how the teaching process is progressing, you need to communicate effectively to the Deans, they, in turn, have to work with the Heads of Department, since teaching and learning take place in the Department (MM2).

Another respondent said that, “...as a provost, I am supposed to be in charge of academic, the administration and financial management of the college, so I ensure that the various Faculties and the Departments have done what they are supposed to do” (MM4).

Respondent MM5 stressed that, in his office alone, he does not remain seated all the time, instead, he tries to visit almost every office under his jurisdiction including washrooms for students just to ensure the place was clean. These are part of the mechanisms put in place to ensure quality at his College.

Theme 2: Management Awareness of Quality Approaches in Education

The institutional management awareness of the approaches to ensure quality can also inform the TQM implementation strategies. Information was solicited about the evolution of Total Quality Management (TQM). The top-management respondents explained quality control, as a process and that it starts from the beginning of deciding what the product should be and this depends on the needs of customers (or clients). Knowledge of the needs of customers could provide information on what specification should go into the production. With reference to the University system, one of the top management said that:

...the control system starts from the very initiative of a programme. So once a Department decides that we want to run the programme, then quality control begins, while quality assurance means a situation where there is control and there are defects that comes the assurance elements (TM1).

In the case of TQM, he explained that it is when you are ensuring that all those things that will come in, to ensure that the programme itself is in place. We have the students and lecturers, and the two parties must interact to ensure that programmes are effectively carried out. Again, we have those who have to create a conducive environment for the students, lecturers and other staff to work hard. He said, “...Once you have look at the lecturers, students, environment, that of

administrative performances in terms of logistics provisions, in all those things then you are doing total quality management” (TM1).

One of the top management respondents pointed out that, quality inspection, control, assurance, and total quality management are not the same and concluded that, “...*they are not the same but they are interrelated because total quality management is supposed to encompass all these processes we are talking about” (TM2).*

In the case of middle management, one respondent defined Quality control as a way to produce a thing. He said, “...*what you are interested in doing is the finished product and whether it meets the required standard” (MM1).* He explained the quality assurance concept as when you are actually monitoring the whole process so that at every level of operation, you ensure that everything is done in relation to the set standard of the final product. He further iterated that, “...*the University since its establishment is monitoring the process, however, I think the intention was there but I do not see that the entire scope is been monitored” (MM1).*

He defined total quality management as a way to ensure quality not just in academic unit but also administrative and support units in the University. A middle management respondent (MM2), defined Quality Control as a process whereby the institution makes sure that quality is maintained to avoid poor standard. The third respondent, defined quality inspection, as “...*the lecturer or the manager making sure that things work as it should which means sometimes*

you have to be specifically at places to find out if things are going on well, thus physical presence” (MM3).

He explained quality control, as the institutional regulations because the university is being governed by rules and regulations. However, for quality assurance he said, “*...to assure is just like insuring, it means it is a preventive measure. For assurance, you prevent the faults from occurring, so that everything goes on without encountering problems, particularly in education enterprise” (MM3).*

At one point, a respondent (MM4) defined assurance, as making sure that things are done the way they should be done so that we will all have confidence in the system. She iterated that:

...unfortunately it is very difficult for me to assure quality most of the time, I can do the regulation, I can do the control and the inspection but then sometimes you need to give people the will to do what they are supposed to do (MM4).

The fifth middle management respondent MM5 was of the view that quality assurance are the measures put in place to ensure that there will be quality in every aspect of the life of the institution. He saw TQM to comprise everything in an institution and how they go about them, who supervise them, how the supervisor reacts to all these things, including the setting of standard. He iterated that:

...there is the need to monitor all these areas so that the final product can be achieved with the minimal waste, time and material, while total quality management is a situation where we are looking at quality in terms of not only the performance of lecturers or the performance of the students, rather we look at the totality, including what affects quality in terms like resource availability (MM5).

Further probe was conducted to find out from the interviewees whether or not the TQM approach in the quality management system of the University exists. A middle management respondent, MM5 however, doubted the existence of the total quality management in the university. He argued that when the quality assurance mechanism put in place covers every domain of the University, then we can say that the total quality management is being practiced. He said:

...My worry is that we talk about total quality management, while quality management in this University is not total. The total quality management if we want to improve the quality management system, then the quality assurance system must work across everyone, everything and possibly the need to have quality education through workshops, discussions on the areas of the University that are necessary to look at. (MM5).

The respondent MM5 pointed out that all of us need to be involved in quality management. This could be done through the committee system with representatives from all the domains of the University, similar to that of Strategic Planning Review Committee set out by the Vice-Chancellor. He further said, *“...We do not just look at a certain aspect for quality, but we look at the whole aspects in terms of factors that contribute to high-quality education, I believe that is what total quality management is all about”* (MM5).

Key principles of TQM

The study literature talks about two forms of TQM (Saljoughian, Allameh, Dabestani, & Rabbanimehr, 2014). These are the tools and techniques, and concept and principles. The latter deals much on the human aspect. The respondents were asked about which aspects they were familiar with. The top

management considered relevance and affordability as key terms or principles needed to talk about when applying TQM approach. One respondent said:

...In the human aspect, if you are talking about TQM, relevance becomes a key, so how relevant is a particular programme to the client, then affordability becomes an issue because the programme is not free. Again, suitability, timeliness of the programme, elements of control, supervision, assurance, as well as evaluation and feedback from the customers are very important and all deserved mentioned (TM1).

Another top management respondent said, the criteria for appointment, applications for admission, for employment, are all aspects of the TQM principles. He concluded that:

...the need for scripts to be marked, quizzes to be conducted within a specific time frame are all part of quality assurance mechanisms....If you go to the National level, we have NAB, MTTE and other regulatory bodies that really govern the University. The regulatory environment is part of the quality assurance mechanism so you cannot just mount any programme free of charge (TM2).

Respondents from the middle management agreed that the human aspect is allowing the staff to come out with their own ideas, motivating and recognising their presence. There should not be any fear when a staff wants to say anything and should involve them in order for the various committees to operate. Their unions should be recognised and not intimidated. One respondent, said, “*...the quality assurance unit (DAPQA) is just like some of the regulatory institutions we have in Ghana. DAPQA is supposed to identify crime but cannot prosecute and therefore cannot push somebody to do something in force, quality is free*” (MM2).

A respondent from the middle management level was of the opinion that, there is the need to go in accordance with the established principles and everybody is supposed to perform his or her role. He said:

...in the University system it is not a one-man activity and we should not look up to the CEO only, all in management at each level, from sections and units Heads through Heads of Departments, Deans and then to Provost are all involved. Therefore, everybody who is in a management position should be working towards achieving the mission of the University, thus meant to be TQM for us (MM3).

Theme 3: Institutional Management Understanding of Quality Improvement

Concerning the issue of quality improvement, as well as the stages that call for quality improvement when ensuring quality, all the respondents were of the view that once the issue is about quality, it should go with enhancement and improvement. One of the respondents explained that Quality improvement is how we can improve the quality that exists at any particular point in time. He said:

...quality improvement comes in when there has been the mixed evaluation of progress and you have identified gaps well after mixed evaluation. The evaluation must be on-going, it must be a cycle thus after every section of the progress, there must be a form of evaluation to find out if things have been done well or not. As soon as evaluation recommendations are implemented to add values, then improvements start (TM1).

The respondent, TMI advised that whenever the UCC Directorate of Academic Planning and Quality Assurance (DAPQA) comes out with a report, it should come with recommendations in order to enhance the process or correct particular issues. The second respondent from the top management level supported the assertion by saying that:

...total quality involves continuous improvement and so looking at curriculum, it is not static, every now and then, Departments are called to review, even our Strategic Plan is under review. Our statutes have recently been reviewed. All these are aimed at improving quality (TM2).

The middle management interviewees were of the view that enhancement and improvement should be based on the monitoring process. One respondent said:

...I read a book about an Asian Philosopher, He said you set yourself a target and just when you are about to reach that target you set a new target and that encourages you to move far and also perform to a higher standard. The issue of the motivation of staffs also comes in when you are talking about quality improvement (MM1).

Another response from the middle management level was that the improvement comes in from the feedback you get from the institutional customers. He said that:

...Improvement is based on what you get when you put measures in place checking, particularly, those that have occurred and you have controlled, you don't want them to recur and so when you do that then you are improving upon the quality. Quality improvement is therefore linked to the quality assurance since whatever you have you must always look at it to make it better (MM2).

Another middle management respondent was of the view that, the quality office, like DAPQA, should be involved in the enhancement and improvement act [MM4]. She said: “...once you check, and whoever is responsible for carrying the recommendations out or rectifying the situation, the quality managers should be involved in the enhancement processes” (MM4). However, another respondent was of the view that:

...If quality assurance, goes to the Department, the group or the committee, urging them, you are supposed to do this and that, how far have you gone? DAPQA then monitors the committee's activities and reports to management, then committee setup should be given a timeline. Then I think another committee will set up sometimes maybe to be responsible for the follow-up (MM3).

One respondent, MM5 emphasised that quality improvement comes in when management accepts feedback from the customers and considers it to be essential,

something could be done better through the given recommendation. He said, “...If quality facilitators bring the report to management, they should not allow the report sitting idle, the committees should be put in place to ensure that these recommendations are implemented” (MM5). The issue of action taken after monitoring and recommendation given was deemed important, hence, some information was solicited.

Quality improvement responsibility

The respondents were further asked about who they think should be responsible for ensuring quality improvement. One of the top management responded as follows:

...For me, quality assurance Office (DAPQA) in a way is the conduit through which improvement must be obtained. DAPQA for me is a prompter so their role is to more or less know. However, what are the issues that are accelerating the development of our programmes or derailing the programmes, for me it is a collective activity but DAPQA in a way serve as a pivot or as the prompter to spearhead (TM1).

One respondent from the middle management level, MM1, supported the view expressed by respondent TM1 that, UCC DAPQA and the institutional management they report to, should be responsible for quality improvement.

However, one top management respondent had a different view and said:

...In context, there could be a desk that will ensure that recommendations that have been approved by management for implementation from DAPQA's report are implemented but that is the major gap because we take decisions, allocated resources but nobody follows up to ensure that implementation is done. There should be desks in all Departments that will really ensure that issues that come up from monitoring are really implemented and addressed (TM2).

The second respondent, MM2, was in support of the TM2 opinion and said:

...I think that the DAPQA office is not responsible for quality improvement alone, being the quality assurance unit, they can do all things like monitoring and evaluation because they have to find out (detect) whether we are following quality procedures, what we are supposed to do to bring quality of services to our clients, rather the office receiving the report must take implementation of the accepted recommendation (MM2).

Another middle management respondent MM3 said that, the university talks about quality performance, however, reports from the DAPQA indicate repetitions of not doing things right. He said:

...DAPQA always gives us reports, and we study the reports, it is now left with management to accept them and have to put measures in place to implement them. DAPQA bring reports on some issues, on the main University, lecture theatres; sockets are not working; students are complaining about tables; chairs are broken, or laboratories are inadequately furnished and all those things every year (MM3).

He intimated that, the University is not managing quality appropriately in order to succeed. He therefore suggested that what we need to do is to take bold steps to correct what we do so that, in subsequent reports, there will be no repetition. It is only then that we can say that we are improving on quality. The respondent, MM4, added that:

...an improvement should not just be doing the report and sending the report to the appropriate units, it would just be in retention. However, if there is a unit which has the mandate to make sure that improvement is done, then the report moves from the main reporting level to the continuous improvement and that becomes a quality control on the whole....Because if we get reports and management do not take action and ends there, the following year another report given. I think just reporting will not help solve the problem, yes, you have reported but the improvement team could be a better link on management (MM4).

Respondent, MM5 was of the view that the University should have a central body that controls the implementation of everything from the DAPQA, since the DAPQA alone cannot do it. Each College should be responsible for the

management of quality issues. He found a gap in the quality management and said:

...DAPQA has gone around and has realised that lecture theatres are leaking and therefore report has been submitted to management. Management will refer this to the appropriate unit with the hope that the appropriate unit will act promptly but the evidence on the ground is that they do not do it and that is where I think that we need a team or a group outside DAPQA that can prompt those responsible for the implementation to act accordingly (MM5).

On the issue about whether it would be necessary or not to have quality improvement teams within the university in addition to the existing quality assurance Directorate, respondents from the top management said, it's necessary to have improvement teams. One of them said:

...We can have not only one team, but we can also establish improvement teams at the Colleges. Because the initial proposal was that we should have quality assurance desk at the Faculty levels. That is then, I don't know whether we have established them. So if we really want to go ahead, there should be some established improvement teams that will monitor the implementation of recommendation (TM2).

The middle management respondents affirmed the need to have improvement teams, in the sense that whenever there is division of labour, everybody works well. One of them said, *"...I think it is necessary, the result is certain so it is always necessary and those improvement teams and DAPQA will be working hand in hand"* (MM1). In support, one respondent stressed that, *"...Everybody has an important stake in the quality management so there should be membership across the whole University. So I am hoping that the DAPQA expands the need for quality assurance and the establishment of improvement teams"* (MM3).

One respondent from the middle management recommended that the DAPQA should have a Unit that will focus on assurance and improvement. She said:

...It is all about the inspection and the control but I think we are to combine assurance and the improvement. That is why sometimes senior colleagues make complaints that DAPQA sends officials to check whether lecturers are in session or not, but what about the theatres which are having the ceiling fans and electrical gadgets not functioning. Quality improvement, I think it is linked to assurance. For whatever you have you must always look to make it better (MM4).

Theme 4: Management Recognition of their Institutional Customers

Institutional management needs to recognise its customers since any TQM institution focuses on customer satisfaction (Kanji & Tambi, 2009). The respondents from the top management level agreed to the difficulty to identify the institutional customers. However, one respondent said:

...When you narrow it to the fact that the University mounts a programme and then the programme basically has people who are the direct beneficial, then we can say that the customer of the University is the student. However, it is education and education service does not just develop for the individual, it has a rippling effect on the society also (TM1).

The respondent further identified other stakeholders who are interested in what happens in the education sector. Apart from students, he considered them as the primary customers, he concluded that: “...there could also be the secondary customers such as parents, alumni, opinion leaders, government and all other groups who have a stake in education, including the business community and the employers” (TM1). The top management respondent, TM2 indicated that, “Students are the very reason why we are in this University because the core

service is for them, and everything is designed around the students, the environment, the teaching curriculum and the research” (TM2).

In support, the middle management respondents, MM1 emphasised that institutional customers are the people who use our product. He also argued that not only educational institutions, but also the corporate organisations are customers. Another middle management respondent said:

...Students, their sponsors, and their parents are institutional customers as well as those working in the University. Staff is part of the University customers because without lecturers and administration staff there will be no university. We need the administrators, we need the lecturers and then we need the institution itself together we can send the quality graduates out (MM4).

One middle management respondent, however, disagreed that students are institutional customers. He said, *“The students are not customers; I don’t see them as customers. However, we need to look at students very carefully, yes if we look at the students as customers, we will only be looking at one direction” (MM5).*

The respondent, MM5 further pointed out that, the university trains students and when they graduate, they become products of the University. He said:

...when students come to the University, they pay fees and because of that it seems to be like people who are coming to buy the University service, but within that period, they are members of the university. I mean, they are at one point can be looked at as customers, also can be looked at as members of the universities and they could be referred to as university products. So we need to look at them in a different way (MM5).

The response from MM5 suggested that Students are customers and at the same time stakeholders of the university.

Theme 5: Management Familiarity with Institutional Customers' Involvement in QMS

It was further determined how the university involved its customers in Quality Management Systems (QMS), more especially the internal customers. One of the philosophies of the TQM approach is the total involvement of all those working in the university as well as external customers. The respondents mentioned quality policy development; recognition; motivation; training and development among the means to involve customers in the quality management. A top management respondent was of the view that there should be clearly laid down procedures for internal customers to follow to allow them room to operate. The respondent pointed out that, *"...Now if the administrator gets to the office and he or she is required to meet a certain deadline and yet the systems do not permit that, it becomes a challenge"* (TM1).

Another top management level respondent was of the view that in an academic environment, the university should provide research grant just like the University has recently instituted to motivate the staff to do research and added that: *"...The management is to listen to the voices of students and business society through surveys on tracer studies"* (TM2). The top management respondents were of the view that the University is much concerned about its internal customers training and development as well as listening to other external customers apart from students and local communities.

A middle management respondent, MM2 recognised the importance of identifying the means to involve institutional customers in quality decision making. He said:

...I believe in the first place, there should be ways of allowing the employees to know that they are part and parcel of the institution and more so those that consume the service products of the University. There is a need for Management to recognise employees and to give them resources to work with (MM2).

Responses from the rest of the middle management respondents supported the need for the University to encourage workers and to tolerate their views in decision making. They pointed out that, when people feel that their work is appreciated it will encourage them to perform. One respondent said:

...To involve the institutional customers in the quality management, the university should provide them training on quality education first not necessary training on the job alone. The University policies should have a quality effect on the various sectors including the issue of relevance and suitability. They must be considered when giving training else we cannot talk about Total Quality Management (MM3).

Another respondent agreed that, all is about the importance of training on quality and it has to do with sensitisation. He said:

...there is a need for quality training, but should not assume that quality education is already part of staff development on the job. I think maybe management has not followed up and there may be a need for a special retreat of this to educate the workers. So, I will go with the idea that the sensitisation on quality is good for the staff as a means of involving them (MM5).

Theme 6: Significant Relationship between TQM Practices and Service Performance

On the issue about seeing any existing relationship between TQM practices and service performance of the University, all the respondents indicated that there is a linkage. A top management respondent said:

...It was pointed out that when quality issues are raised the University puts in measures to control them, of which all concern the performance. The subsequent reports that come after the investigations prove that there has been an improvement and that improvement element links to performances, so it is the focus on quality that helps the institution to

improve the performance situation. “All other things being equal, quality must have a direct impact on performance (TM1).

Another top management respondent said: *“There is a link. However, Quality Assurance Directorate alone cannot ensure and assure quality without enforcement and that enforcement should continue to be there to guide service performance” (TM2).*

The Middle management respondents also found some relationship between quality management and institutional performances which they attributed to the establishment of the disciplinary committees for Senior Members, Students, Senior and Junior Staff. These have been created to enforce service quality delivery and to ensure quality. A respondent of the middle management level stressed that:

...and there is surely a relationship between our service we provide and the quality we achieve, therefore things must be done right at first time to avoid redoing when we talk of quality work. In support of the relationship, I think if you draw a correlation, you will get a hundred percent positive correlation. The respondent, however, argued that, if the relationship can be strengthened, it would depend on available resources (MM3).

Theme 7: Management Commitment to TQM being Practised in UCC

The interviewees were further asked about how institutional management is committed to the implementation of Total Quality Management in the University and how they see its implementation in the various Units of the university. The top management respondents were of the view that they are very committed to quality management. One of them said:

...Well, as for commitment, the fact that management and for that matter, Academic Board found it necessary and have established Quality Assurance Unit, now upgraded to a Directorate to spearhead the quality issues shows commitment in the side of management (TM1).

Another top management respondent, TM2 was of the view that, there was recognition of management commitment. However, all were not too well and he said:

...It is made in a policy that all Colleges, all Faculties, and Departments must have quality assurance committee, and this clearly shows that there is some level of commitment but the level of the practices is where the challenge is. The campus is always green, and then we look at even the architecture environment, the classrooms are always under constant maintenance, cleanliness and we are also trying to catch up with others, maybe use them as our benchmark (TM2).

A respondent from the middle management level said:

...Yes, I support that, there is commitment, provided there are resources available for the quality implementation. For example, the university says that every College should have a quality assurance committee and is it going to be an additional responsibility for lecturers who already overburden or what. There is a need for somebody who is a professionally trained person to be in charge (MM1).

The Middle management respondents did not unanimously agree that the university management was totally committed to quality. They attributed it to many barriers to its implementation. One of them said:

...if I use one word, I will say, they are not committed. You see, we have allowed not just complacency but refusal to change to permit usual system. There is something in our own traditional culture that says anything goes. It is not helping, as individuals fail to do things right. The staff of the University thinks about their monthly salaries without caring about the quality of work they are tasked to do. (MM3).

Quality cultured institution

One definition of quality is transformational change which goes with the integration of quality with the culture of people working with the institution (Harvey & Green, 2012). One of the top management respondents, however, said:

...We are in a system where we lack a quality culture, we lack quality phenomenon. Quality concept is mentioned to us and so everybody talks

about quality but in terms of individual reaction to quality measures, I will say that on the whole people have the culture of the academic label more than the culture of quality (TM1).

Another respondent from top management group said that:

...with regard to campus, we hear of UCC is for quality, UCC is for excellence, therefore students are always serious and that's why they say Cape Coast University education is "very difficult". In order to be quality cultured, in practical terms, you make sure the policies and procedures to academic work are implemented very well (TM2).

Respondents from the middle management group emphasised the need to have quality culture in every institution. However, MM1 doubt the existence of quality culture in the University. He said, "*...it is different from this University and it is not only the staff but students are also among*" (MM2). A middle management respondent, MM2 said DAPQA alone cannot manage quality. However, it appears people in the University do not see the need to have quality in place. The staff and students therefore need to know their involvement through orientation. He said:

...when for instance, the people are vying for certain positions they must get to know things through an interview and should be trained to protect their core value, vision statement, these are all parts of quality assurance. Management is supposed to lead but they should be able to bring everybody on board to accept TQM implementation. May be DAPQA can help us to talk something about quality as some sort of education, could be something like a quality week in the University, through which we educate people, after all, we have campus broadcasting corporation (MM2).

Another middle management respondent also shared the same view that education on quality is needed and said:

...I even think that we should have some time to discuss quality but I think DAPQA should push that agenda and then the University management will do. I am sure if management collaborates with SRC as the students' body, it will help, (MM3).

One respondent, MM4 suggested the need for Quality Assurance Desk (QAD) at various sections of the university and making resources available to work with. However, the respondent, expressed dissatisfaction about the establishment of QAD. She attributed the failure to the DAPQA for not backing the education to support the practices. She said:

...the University needs to have a team made up of lecturers and administrators and then one person whose responsibility is to make sure that this quality assurance desk runs well, to win the support of all. I have worked with many institutions and as part of settling disputes, talking about quality, we established a College-based committee to handle, why not in this University (MM4).

Discussions of the Findings that Answered Research Question One

This section discussed the results of the qualitative aspects of the study. The discussion centred on the institutional management awareness and understanding of TQM philosophy and the TQM implementation strategies in the University. The principles informing the TQM approach can best be described as practices in which the University management and the internal customers embark on in the service delivery. Oakland (cited in Oakland, 2014) defined the TQM principles as those critical areas which an institution must deliver on, in order to achieve its mission and vision. The discussions follow the order of the first seven themes developed.

Management awareness with the concept of quality and QMS

The concept of quality was quite difficult to define since it takes on different meanings for different stakeholders (Harvey & Green, 2012; Rosa, Sarrico, & Amaral, 2012). The respondents supported the idea that there is not a single definition for the term quality and that, what is quality to one person may

not be quality to another. The institutional management defined quality in terms of: fitness for purpose, academic standard, quality output (value for money, thus what you produce), and excellence. Four out of the seven respondents defined quality as exceptional, standard, excellence, or something that is the best to education.

The management respondents were of the view that the service industries including education need to manage quality in the provision of service to their numerous diverse customers. They acknowledged the fact that, any organisation whether they provide services or produce goods, needs quality management to ensure the satisfaction of their customers or consumers. It therefore means that any institution that fails to render services to meet the needs of its customers should consider the service delivery to be meaningless. The respondents generally recognised how important it is to ensure quality in the education context despite the weaknesses in its implementation.

The definitions the management respondents gave were in line with previous researchers' definitions (Afrane et al., 2014; Ahmed & Ali, 2016; Fonseca, 2015; Ogunnaike, Borishade, Sholarin, & Ezeugwa, 2014; Sallis, 2014; Mohammed, Alotibie, & Abdulaziz, 2016). In line with the quality experts and previous researchers' opinions, there are a number of definitions designed to operationalise or to address the concept of quality (Bunglowala & Asthana, 2016; Fonseca, 2015). The relative definition views quality not as an attribute of a product or service, but as something which is ascribed to it. Two of the middle management respondents defined quality as a means to achieving institutional

goals. However, quality as effectiveness in achieving institutional goals was one version of the “fitness for purpose” as explained by Harvey and Green (2012). Quality in this sense is about being measured against criteria and is applicable to the provision of education service (Ahmed & Ali, 2016; Sallis, 2014). Quality as conformance to standards in this sense is how the quality of a product or service is measured in terms of its conformity to specifications, to see if it meets the standards.

Management’s awareness of quality is therefore, central to the success of TQM implementation. However, as argued by Crosby (1984), quality awareness is not just promoting quality within an organisation, it is more about involving and spreading quality information around. Crosby’s argument was that, quality awareness extends to the way in which management acts and talks about quality, which implies that quality awareness begins from management and spreads throughout the entire institution (Crosby, 1984). The respondents’ views of not seeing its full operation could be attributed to the implementation strategies being adopted by the management. The previous research findings depicted failures of many TQM organisations and the implementation strategies accounted for their successes and failures.

Management awareness of TQM and other quality approaches

The study literature revealed that there is not a single name given to the TQM principles. Obviously, management respondents were of different views with respect to quality approaches. Some refers to supervision as form of controlling quality, relevancy, inspection of tasks given to subordinates, as well as

monitoring of activities to ensuring quality in the University. They made mentioning of given training to employees, allowing them to work as team and giving freedom employees to voice out their views. Most of them the respondents mentioned were more especially constituted the TQM principle. Previous researchers call them TQM practices, critical success factors of TQM, TQM framework, TQM dimensions or TQM constructs (Fotopoulos & Psomas, 2009). Nonetheless, they all constitute what is called the “soft side” of TQM mentioned earlier under the definitions of terms.

From the Institutional management perspective, there was an indication that both top and middle management portrayed knowledge in the quality approaches, namely; quality inspection, control, assurance and Total Quality Management (TQM). According to them, the quality assurance and TQM as quality approaches were indicated at different levels. Although, they had a feeble understanding of the TQM approach, their claim was that, TQM is something that they doubt about its existence in the university, all because the quality measures do not focus on the entire university units.

The respondents’ awareness of TQM philosophy, the tools and techniques and principles were found to be shallow. Moreover, they were of the view that TQM philosophy is not being practiced fully in the university since most institutional stakeholders have misconstrued the TQM concept. According to the respondents, the misconception and misconstruction of the quality concept among the stakeholders had created a situation where many of the stakeholders do not involve themselves in the practice. Even though the current responses from

institutional management portray elements of total quality management alright, many concepts have been misconstrued which could be attributed to the TQM implementation not fully recognised in this University. All interviewees seemed to point to the fact that the university quality management system in general and TQM practices in particular, need to be restructured.

A few qualitative studies have examined institutional management attitudes towards quality concept and elements of TQM (Brennan, 1991; Hill, 1995). Even though, distinctions have been made between the elements of the “soft” and “hard” side of TQM and they are well documented, little has been said about how one can assess managers’ awareness and understanding of the TQM philosophy, more especially those in developing countries of Africa.

The current findings in line with the previous ones on service institutions, indicate the lack of awareness of TQM philosophy among stakeholders. Taylor (as cited in Ong, Kathawala, & Sawalha, 2015) found from his study in Northern Ireland that, awareness of management on the hard “side” of TQM (tools and techniques) like ISO 9000 was very high among executives but very low on the soft “side” of TQM (principles). He considered 9 out of 10 executives had heard of the quality systems “ISO 9000”, whereas an earlier study of Taylor revealed only 32% awareness. He also mentioned that activities related to quality were frequently misunderstood and often quality was equated with many words that failed to address quality matters. All these were due to lack of awareness and understanding of TQM philosophy. Sureshchandar, et al., (2001) made mentioned that, in order to measure the quality performance and consequently to

continuously improve on service quality of any institution, there is the need for the management and the stakeholders to be familiarised with the TQM dimensions (principles) to inform the implementation strategies.

Ishikawa (1985) found middle managers to be the key people in quality management and that middle managers are at the crossroads since they have to obtain crucial information and acquire the ability to make judgments based on a broad perspective (Vouzias, 1997; Owusu & Darko, 2017). However, top management has to be committed and also need to have trust in middle management to work with.

According to Oakland (2012), TQM needs to gain ground rapidly and become a way of life in institutions. However, TQM needs more time to become a way of life in organisations (Goetsch & Davis, 2006). Time is needed to integrate the appropriate quality principles, tools and techniques into the culture of the organisation. Nevertheless, time is not the only resource that TQM requires, the Human resources are equally important for TQM success.

Institutional management understanding of quality improvement

On the issue about the Continuous Improvement and whose responsibility it is in the university, there were diverse responses, however, they all had one understanding that enhancement and improvement come after monitoring and evaluation. Continuous improvement is a quality improvement initiative technique that facilitates change in an institution through the process of planning, execution, and evaluation with the aim of improving upon the existing gaps (Yasin & Alavi, 2007). Therefore, without evaluation, the process of continuous improvement will be a challenge to any TQM institution. The management,

therefore, was in support of the definition given by Yasin and Alavi who said that Total Quality Management (TQM) focuses on the process of quality improvement in order to satisfy the customers of the institution. According to the respondents, everybody in an institution is responsible for the quality so effort should be made towards improvement.

Their responses were in line with Dale et al., (2016), who argued that Total Quality Management (TQM) goes with continuous quality improvement and TQM institutions should therefore focus on quality improvement which eventually will lead to the customers' satisfaction. According to Temponi (2005), if continuous improvement process is implemented in an institution, all stakeholders would be involved, motivated and satisfied regarding the activities of the institution. Even though Benchmarking was not mentioned by any of the respondents, it is important to recognise that the method is frequently used in association with other quality improvement initiatives. Benchmarking (BM) is a quality improvement method that helps institutions to identify the best practices through a comparison of different processes and operations either internal or external (Isoraite, 2004; Nazarko et al. 2009).

Management recognition of their institutional customers

The responses from management showed that they knew their institutional customers. Within the context of total quality management and evaluative component, customers should not be limited to the students and administrators, but also those who utilise the services (Militaru & Drăgu, 2009). Nevertheless,

they all agreed that any institution, group or person that benefits from the work or process of the university, becomes the University customer.

All the respondents also agreed that the university has both external and internal customers. Respondents were of the view that, the employees of the University namely: the lecturers, administrators, as well as supporting staff are all customers. Five out of the seven respondents considered students as the primary customers, while one of the seven was of the view that students are members of the University at the same time could be among “outside members”. Obviously, students are the only institutional customer group with dual membership. Therefore, students can be both internal and external customers.

The current findings support the views of Robinson and Long (1987), Kanji and Tambi (1999), and Spanbauer (1995). Robinson and Long, emphasised the necessity of internal marketing in the universities and classified the customers into primary, secondary and tertiary, in accordance with what they understood to be the order of relevance, location, and frequency of interactions. Kanji and Tambi indicated that, students are primary external customers when considered as learners and the most beneficial of education service. Students could also be seen as secondary internal customers when they are considered as educational partners.

Again, the findings corroborated Spanbauer’s (1995), when he pointed out that, there are two types of customers: the external (students, employers, communities, alumni and others) and the internal customers are the lecturers, the administrative and support staff from the university education, as well as students.

Management familiarity with institutional customers' involvement in QMS

The respondents mentioned quality policy; recognition; motivation; training and development among the means to involve customers in the quality management. Provisions of research grant recently instituted to motivate the staff to do research and to have clearly laid down procedures for internal customers to operate are other means of involving them. However, they considered the lack of training and education on quality to employees as a serious issue to non-involvement of internal customers in quality operation. They also mentioned lack of research activities to elicit information from the customers, including tracer studies, students exit surveys, community interaction and regular stakeholders' consultative meetings. Nonetheless, they came out that, in order to involve the institutional customers in the quality management, the university should provide them training on quality education as part of on the job training. This will draw the customers into the quality management system towards service quality performance.

The findings from the Institutional management corroborate the results of previous investigation from Owlia and Aspinwell (1996); Sila and Ebrahimpour (2002) and Fotopoulos and Psomas (2009), which focused much on the quality training and education for the institutional stakeholders. Again, the responses were in line with the studies of Claver-Cortés et al. (2008); Tsang and Antony; Samat et al. (2006); Sila and Ebrahimpour (2002); Yusuf et al. (2007) and Al-Marri et al. (2007) which concentrated much on the employees' involvement in quality management in various service institutions.

Quality management and service performance relationship

The management respondents agreed to the existence of the relationship between quality management and service performance. They were of the view that, in both manufacturing and service organisations, quality should be part and parcel of the institutional activities. At each unit level including the college levels, quality should be the integral part of institution corporate strategic plans. In support of the management responses, many investigations have been conducted on the TQM implementation and institutional service performances, notably among them are: (Adams et al., 2014; Arumugam, et al., 2008; Prajogo & Sohal, 2004; Sadikoglu & Zehir, 2010; Sabella, Kashou, & Omran, 2014; Sureshchander et al., 2002). Previous researches have shown that institutions which adopted TQM practices have improved quality performance (Valmohammadi & Roshanzamir, 2015). TQM practices have been measured in various ways and the results have been that quality management practices, is the best predictive of organisational performance.

Management commitment to TQM being practiced in the university

Despite the existence of several experiences of successful implementation of Total Quality Management in different institutions all over the world, there is a need for stakeholders' commitment to inform its implementation. When there is a lack of commitment to Total Quality Management in some cases, it is impossible to succeed.

The respondents indicated the management commitment to TQM practice in the university. They made mention of having Academic Board in place,

training and development for capacity building and other committees in charge of recruitment and admissions. According to them, the university has established a Directorate to spearhead the quality assurance issues, developed quality policy and in the policy all Colleges, Faculties, and Departments are mandated to have quality assurance committees. They also have institutional strategic plan to follow, as well as ways that management can always take to promptly address students' concerns. The respondents considered all these measures as part of their commitment to quality management.

The views of the lecturers, administrative and support staff are important if the existing quality management system is to succeed. However, further probe from the respondents indicated that, the University's internal customers should be quality cultured in order to have a university that is fully oriented to total quality management. However, the management respondents did not unanimously agree that the university community was totally committed to quality. They could not agree or accept that the people they were working with were fully quality cultured. They attributed the situation to many barriers that hindered the TQM implementation.

In line with the studies of Ebrahimpour (as cited in Sila and Ebrahimpour, 2002), Modarress and Ansari (1989), and Everett and Sohal (1991), the role of top management commitment, employee training and involvement, and institutional quality culture are useful elements of TQM that have been identified as the most common to make its implementation successful. Lack of any of the

elements may lead to a failed quality management system (Ahire, & O'Shaughnessy, 1998).

TQM is a long-range institutional transformation which requires building new competencies and destroying existing culture and it involves high risk and requires high commitment (Lam & Reshef, 1999). TQM implementation usually needs considerable responsiveness and commitment from the institutional management and other stakeholders within the academic structure of the University.

Research Question 2: What are the Implementation Barriers of TQM as Practised at University of Cape Coast (UCC)?

Theme 8: Barriers to TQM Implementation in University of Cape Coast

In order to answer the second research question of the study, the management participants were interviewed for information on the challenges they face with TQM practices. The top management was of the view that the awareness and understanding of TQM philosophy are little known to the people they are working with. However, TQM implementation strategy has also been hindered by many obstacles. Among them were lack of training and education on quality management; lack of coordination between departments and administrative and support units; right persons for the right job; employee's resistance to change; unavailability of resources to work with; little enforcement from quality office; lack of continuous improvement teams, and ineffective communication at both horizontal and vertical levels. Respondent TM1, a member of the top management group that:

...The barriers include 'the awareness of TQM philosophy', which is superficial among the university community. 'staff resistant to change' and 'lack of quality culture' (behaviour and attitude of the people working with). The challenge is whether the person that you are using as a supervisor and subordinates understand the quality concept that you are ensuring (TM1).

The top management admitted that lack of education and training on the TQM philosophy is likely to cause poor quality culture among the employees of the University. The second top management respondent indicated that: “*...staff knows that, no matter how they perform for the day when it comes to assessment, the Heads have no power in getting them out of work, all because of poor planning*” (TM2).

The middle management respondents mentioned a lack of top management commitment to quality; lack of proper supervision and poor monitoring and evaluation. Others were poor planning; inadequate use of empowerment and teamwork, and removal of fears from employees are all hindrances to the quality management system in the university. One of the middle management respondents was of the view that:

...in corporate organisation, it is easy to dismiss any staff not performing but it is not so in this university. The management has many complications and I think DAPQA needs a sort of power to look through all the territories to engage the various stakeholders involved. Top management has a role to play in the quality management systems, however, until all being committed and getting everyone involved there will always be difficulties in the implementation of the quality management (MM1).

Another middle management respondent, MM2 further indicated that there were inadequate resources to work with; improper management of information coupled with ineffective communication and improper implementation of the corporate strategic plan. He saw these as barriers to ensure quality service. He suggested

that, “If you are enthusiastic to get goodwill, then you are done but if that goodwill is not there, then you have difficulty in assuring quality” (MM2). The other respondent, MM5 attributed the problem to family issues and poor incentives to workers. He said:

...people working with in this University came through somebody and usually difficult to sanction them when they are at fault. We cannot talk of quality when resources are not provided enough to work with and many employees are resistant to TQM implementation because they believe that TQM philosophy requires them to work further for the same compensation (MM5).

Discussions of Findings that Answered Research Question Two

The Education environment is a complex system due to the diverse needs of customers. The process of satisfying them could therefore be a major issue (Bilen, 2010). It is imperative therefore, to recognise the barriers or hindrances preventing the successfulness of TQM implementation in the University. At the same time, the significant differences between education and other organisations need careful considerations (Srikanthan & Dalrymple, 2003).

Among the barriers identified by management respondents were lack of training and education on quality management; lack of coordination between academic departments, and administrative and support units; right persons for the right job; employee’s resistance to change; unavailability of resources to work with; little enforcement from quality directorate; lack of continuous improvement teams, little acknowledgment of quality by the academic staff and ineffective communication at both horizontal and vertical levels.

The barriers identified are in line with those distinct barriers of TQM implementation that are common to all organisations, and identified from the literature and their causes (Subrahmanya & Rajashekhar, 2009). The identified potential barriers for TQM failure in many organisations and their causes shown in Table 16 under empirical literature review, chapter three, synchronise with the findings from the management respondents. The barriers they mentioned in their responses are in line with those TQM barriers identified by researchers including Masters (1996); Sebastianelli and Tamimi (2003); Talib, Zillur and Qureshi (2016); and Talib, Rahman, Qureshi and Siddiqui (2011). The identified barriers hindered the implementation of TQM and prevented some organisations from achieving the full benefits and advantages. These hindrances have given rise to the opinion that TQM has failed. Various reasons have been given for their failure, and the most common among the lot was management's inability to implement a total quality management approach (Yusof and Aspinwall 2000; Subrahmanya & Rajashekhar, 2009).

Subrahmanya and Rajashekhar (2009) identified “no benchmarking” and “employees resistant to change” as the two most important TQM barriers. Yusof and Aspinwall (2000), and Yen, Krumwiede, and Sheu (2002), identified common barriers such as, “lack of top-management involvement”; “lack of management commitment to quality change” and “poor education and training on TQM” are found to be obstacle to the development and implementation of TQM initiatives.

In the education context, for instance, Wilkinson and Witcher (1991), mentioned some of the basic barriers of total quality management practices in the

UK, according to a survey of 250 United Kingdom firms. The findings were that few firms appreciated the fact that TQM is a total effort and requires culture change and management behaviour. They mentioned that the segmentation of some institutions, reluctant managers, resistance to change by internal customers and industrial relations are some of the barriers to TQM implementation in the UK, despite TQM initiatives being very popular over there.

Ali, Zairi, and Mahat (2008), discussed the people resistance in TQM implementation in Malaysian universities. A qualitative survey on seven universities in Malaysia suggested that the main reasons for the resistance are lack of knowledge and information on the quality program, lack of motivation, and complacency attitudes. Quality management philosophy was being perceived by many as a burden rather than benefits. Institutional management, therefore, admitted that TQM appears to be a systematic and streamlined philosophy for quality management and management of change in education context as well.

According to Bilen (2010), TQM has been implemented with success in other service sectors, its implementation in higher education has been mostly limited to administrative processes, which is being supported by the management respondents of this current study.

CHAPTER SIX

RESULTS AND DISCUSSION OF QUANTITATIVE DATA

Overview

This chapter is the presentation of findings and analysis of the quantitative data obtained from the administration of questionnaires. The presentation and analysis of the data are related to the research questions three and four that guided the study. The findings in this chapter addressed the two distinct assessments that focused on both the process and outcome criteria that complete the total evaluation of TQM implementation at the University of Cape Coast.

This chapter is divided into six main sections. In the first section, the characteristics and the background information of the survey participants for the quantitative aspects were examined. The second section talks about the reliability and validity of survey instruments used in the data collection process. This was done to allow readers to have confidence in the data and the instruments used. The third section addresses the research question three, which explored the views of the internal customers on the level of TQM implementation and their satisfaction level (assessment of process criteria). The fourth section discusses the findings that answered the research question three.

The fifth section deliberated on the outcome of the TQM practices being practised in the University through the external customers' perspective and it addressed the research question four on the service quality performances (assessment of outcome criteria). Finally, the sixth section considered the discussions of the

findings that answered research question four. The hypotheses were specifically tested in support of the findings.

Respondents' Background Information

This section describes the research participants involved in the study with respect to their demographic variables such as; gender; managerial level; educational level; years of experience; employees' status and categories; students' current level and sponsorship status. The information, involve descriptive statistics, frequencies, measures of central tendency and graphical presentation in the form of figures and tables.

Internal customer respondents profile

The profile of the internal customer respondents has been computed in pictorial form and shown under each of the headings.

Gender

The gender figures show that 168 (65%) of the 259 internal customer respondents were male with 91 females (35%) [see Figure 7].

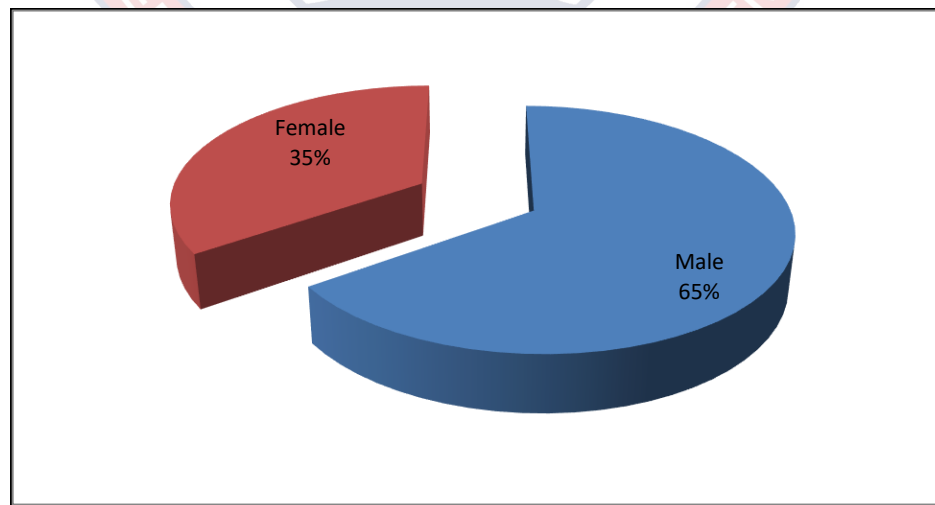


Figure 7: Gender of Internal Customer Respondents

Employment status

Out of the 259 respondents, 254 (98%) were full-time employees, while four were part-time workers and one on post-retirement contract as shown in Figure 8.

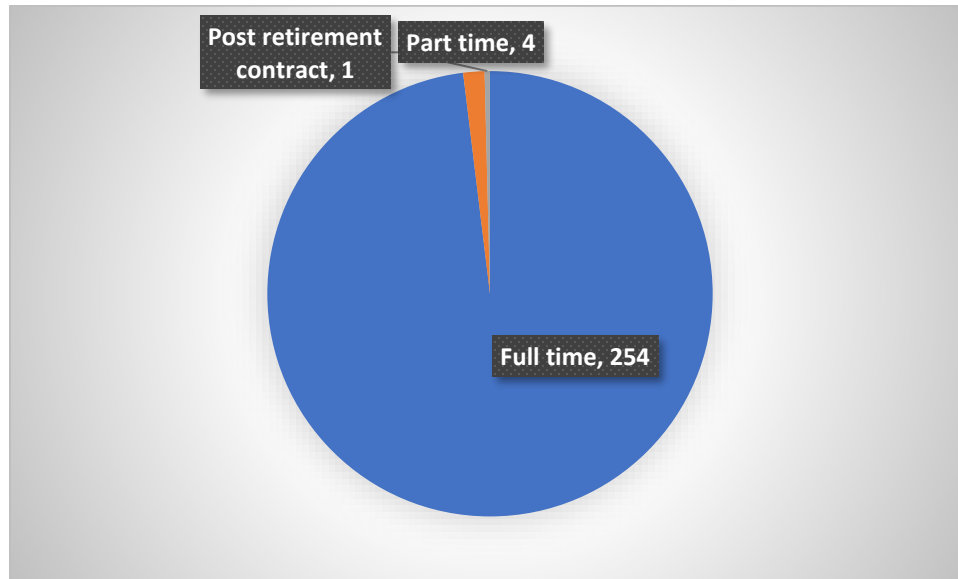


Figure 8: Employment Status of Internal Customer Respondents

Employee category

With regard to the employee category, the figures show that, 106 (41%) of the 259 who completed the questionnaires were in the senior staff category, 88 (34%) and 52 (20%) were junior staff and lecturers respectively, while administrators (senior members) were 13 constituting five percent. This is shown in figure 9.

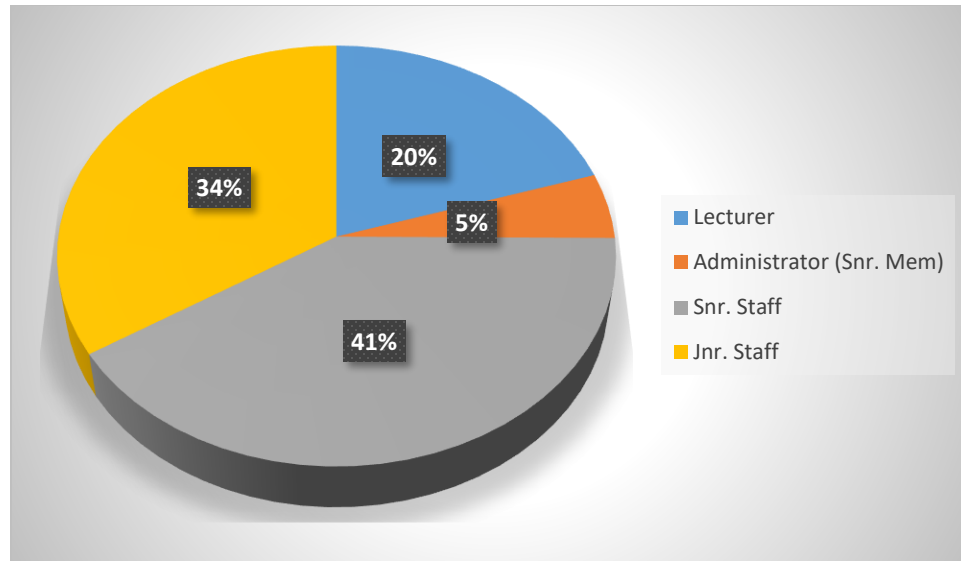


Figure 9: Employee Categories of Internal Customer Respondents

Level of education

As shown in Figure 10, those with first degree were constituted 67 (26%).

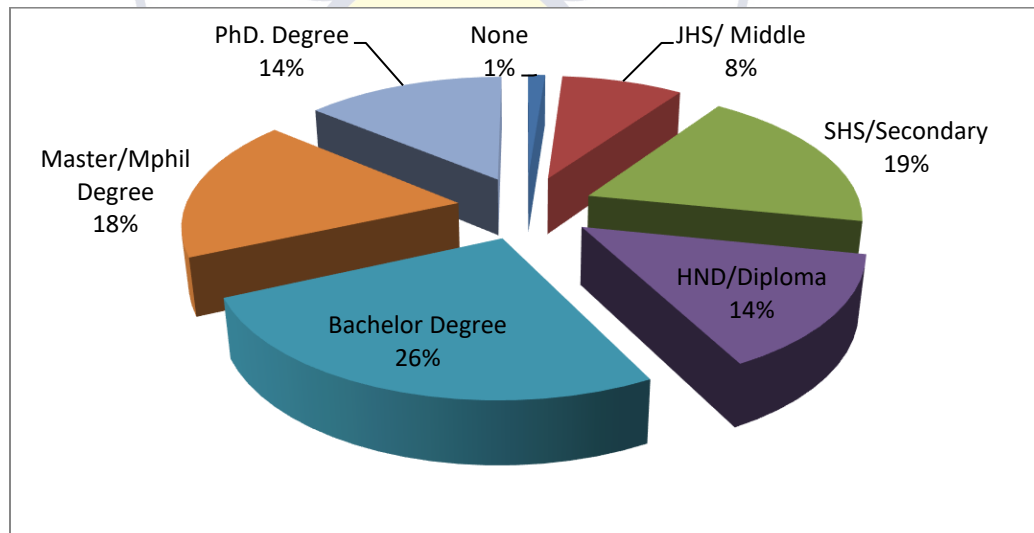


Figure 10: Level of Education of Internal Customer Respondents

Years of experiences

From the study, 104 (40%) of the internal customer respondents had over 10 years' working experience, 98 ((38) have had between 5-10 years working

experiences with 57 (22%) of them below 5 years working experiences in service.

This is graphically represented in Figure 11.

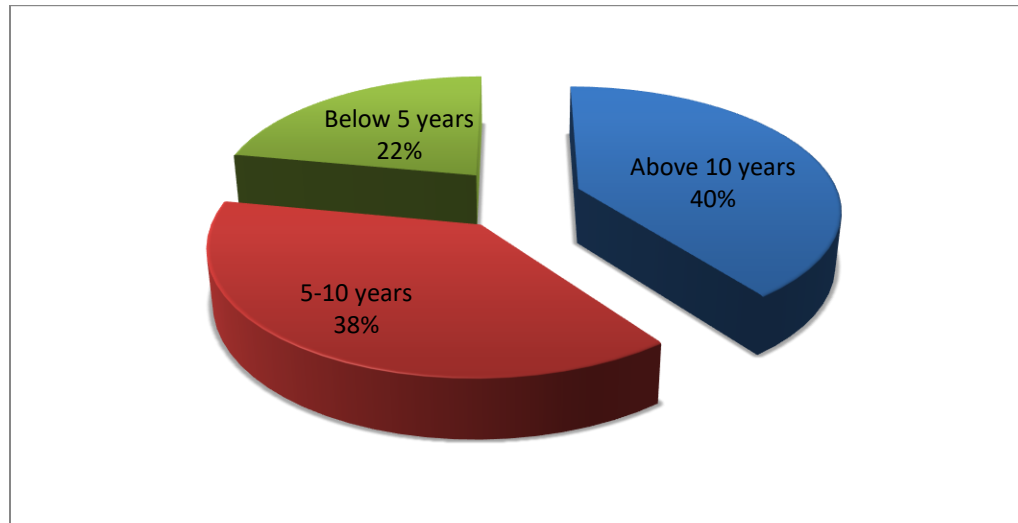


Figure 11: Internal Customer Years of Experience in Service

External customer respondents' profiles

Figure 12 depicts the respondents of external customers in each subgroup, namely; Students, Alumni, and Employers.

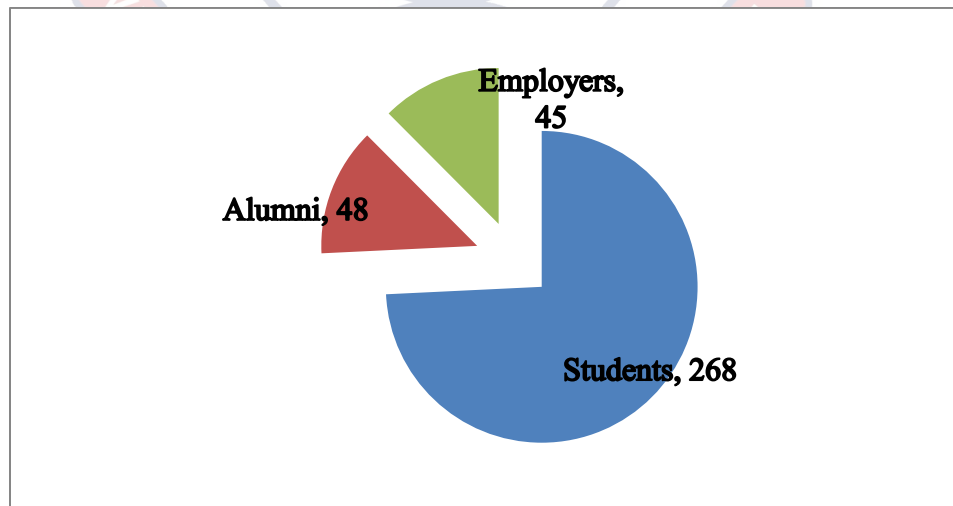


Figure 12: Proportions of the External Customer Sub-groups

Characteristics of alumni respondents

Of the 48 alumni respondents, 37 (77%) were male and 11 (23%) female. Twenty-seven (56%) of them worked in the administration/managerial status, with the remaining 21 (46%) working in the professional/technical status(see Table 17).

Table 17: Characteristics of External Customer Respondents

Alumni Respondents (48)												
Gender		Employment Status			Org'al status			Years of Exp.		H/Degree		
M	Fe	Tc/ P	Ad.	Qu	Pr.	Pu	2-5 yrs	< 2 yrs	Bac.	M/Mp	PhD	
F	37	11	21	27	5	11	32	17	31	42	4	2
%	77	23	44	56	10	23	67	35	65	88	8	4
Student Respondents (268)												
Gender		Sponsorship Status			Current Level			Programme Offered				
M	Fe	Parent/G	Self/Sp	L400	L300	L200	Sc.	Hum.				
F	169	99	246	22	74	126	68	127	141			
%	63	37	92	8	28	47	25	47	53			
Employer/Business (45)												
Organizational Status					Years of Contract Established							
Qu	Pr	Pu	Total	Above 30 years	21-30 years	11-20 years	Below 11 years	Total				
F	3	11	31	45	2	15	19	9	45			
%	7	24	69	100	4.4	33.4	42.3	19.9	100			

Note: F= frequency; M= Male; Fe= Female; Qu = Quasi-private; Pr= Private; Pu= Public; Ad= Administration; Tc/P= Professional/Technical; Bac= Bachelor; M/Mp=Masters/Mphil; Sc=Science; Hum=Humanities; Self/p=Self sponsored; Parent/G= Parent/Guadian; Org'al status= Organisational Status

Thirty-two (67%) of the Alumni respondents work in the public sector, 11 (23%) of them are in the private, while 5 (10%) are in the quasi-private organisations. In the case of working experience, 17 of them have between 2 to 5 years working experiences while the rest 31 (65%) have below 2 years working experience

Characteristics of student respondents

As shown in Table 17, 169 (63%) of the student respondents were male, while 99 (37%) were female. Two hundred forty-six (92%) were under their parental care. Seventy-four (28%) of the students are in level 400, with 126 of them in level 300, while the rest 68 (25%) are at level 200. In the case of programmes offered, 141 (53%) are in the Humanities and 127 (47%) in the Sciences as shown in Table 17.

Characteristics of employers

In the case of employer respondents, as depicted in Table 17, 31 (69%) are in the public sector and 11 (24%) of them are private organisations. Two out of the 45 organisations have been in existence for over 30 years, 15 (33%) of them are between 21 to 30 years old, with nine (20%) being below 11 years old.

Confirmatory Factor Analysis of the Internal Customers Instrument

Confirmatory Factor Analysis (CFA) procedure was used to confirm the correlation of TQM principles and their set of observed variables to achieve practical significance of the survey instrument administered for the main data collection (Arumugam, Ooi, & Fong, 2008; Meyers, Gamst, & Guarino, 2006).

In order to determine the factorability of the correlation Matrix, two types of tests were performed. Two such statistics are the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and the Bartlett test of Sphericity. The KMO statistics vary between 0 and 1, and they are interpreted as follows: values below 0.5 implies that the data is not factorable, values between 0.5 and 0.7 are mediocre; values between 0.7 and 0.8 are good; values between 0.8 and 0.9 are

great, while values above 0.9 are “superb” or “marvelous” (Wells & Wollack, 2003).

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value of 0.96 was obtained for the internal customers’ instrument made up of 60 items and they fell into the range of “superb” or “marvelous”. Therefore, there was much confidence that the factor analysis was appropriate for the data and that the items were factorable.

Bartlett's test of Sphericity is another indication of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. In a situation whereby an intercorrelation matrix is an identity matrix, the variables are totally non-collinear. If such a matrix is factor analysed, it would extract as many factors as variables. Since each variable would be its own factor and it is totally non-factorable. It is therefore imperative to test if the correlation matrix is factorable. Bartlett's measure tests the null hypothesis that the original correlation matrix is an identity matrix. If it is an identity matrix, then all correlation coefficients would be zero. A significance test revealed that the matrix was not an identity matrix, therefore, there were some relationships existing between the variables included in the analysis. The Bartlett's test for the data was highly significant with $P(0.00) < 0.01$ (Significant at the 0.01 level, a 2-tailed), and therefore the factor analysis was appropriate implying that the inter-correlation matrix of the study data did not come from a population in which the matrix is an identity matrix.

Total variance explained by identified TQM principles

Table 18 depicts the extracted components (factors) and the total variance explained. After capturing all the quantitative data with the survey instrument, the Confirmatory Factor Analysis (CFA) was conducted for the 60 items under the 11 TQM principles (factors). Again, choosing that of CFA as appropriate, the principal component analysis method was used to fit the model to the data. The CFA was found to be fitted for the study data because the distributional assumptions were not violated.

Table 18: Total Variance Explained by TQM Principles (Latent Factors)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Var.	Cuml. %	Total	% of Var.	Cuml. %	Total	% of Var.	Cuml. %
(CF)	28.50	47.50	47.50	28.50	47.50	47.50	5.61	9.34	9.34
(BM)	2.33	3.89	51.39	2.33	3.89	51.39	5.48	9.13	18.48
(ICC)	1.54	2.57	53.95	1.54	2.57	53.95	5.10	8.49	26.97
(TSM)	1.43	2.39	56.34	1.43	2.39	56.34	5.06	8.44	35.40
(QIS)	1.38	2.30	58.64	1.38	2.30	58.64	4.41	7.34	42.75
(HRM)	1.25	2.08	60.72	1.25	2.08	60.72	4.27	7.12	49.86
(TMV)	1.14	1.89	62.61	1.14	1.89	62.61	3.63	6.04	55.91
(SR)	1.10	1.83	64.45	1.10	1.83	64.45	3.49	5.81	61.72
(TS)	1.02	1.70	66.15	1.02	1.70	66.15	2.66	4.44	66.15

Extraction Method: Principal Component Analysis. Var.= Variance; Cuml. = Cumulative

Note; Latent Factors defined: Customer Focus (CF); Benchmarking (BM); Institutional Culture and Effective Communication (ICC); Technical Systems Management (TSM); Quality Improvement and Staff Satisfaction (QIS); Human Resource Management (HRM); Top-Management Committed and Visionary Leadership (TMV); Social Responsibility (SR); Tangible of Service (TS)

The number of hypothesized factors as appropriate, the relations among variables and factors were correctly specified and none of these factors occurs simultaneously. It is imperative therefore to state that the measurement model had a satisfactory level of reliability.

The latent factors identified with the initial Eigenvalues of one or more were nine (those with less than one have been excluded). Total Variance Explained (see Table 18) depicted the initial Eigenvalues, which provide information on the percentage of the variance in the 60 items captured by that latent factor. The Extraction Sums of Squared Loadings were interpreted in the same way as Eigenvalues. The CFA confirmed nine latent factors extracted with their initial extraction solution and their rotated solution. The CFA grouped the items of Internal Customers Satisfaction (IC) and Continuous Improvement and Innovation (CII) together and I, therefore, named the factor as Quality Improvement and Staff Satisfaction (QIS).

Again, the items under the Management Information and Communication System (MIC) and Service Quality Culture (SQ) were also grouped under one factor and had the name Institutional Culture and Effective Communication (ICC). However, the nine factors were for the refinement of the Instrument while the analysis of the study was based on the 11 TQM principles (Factors). Cumulatively, the nine factors accounted for 66.2 percent of the variance. The first factor accounted for 47.5% out of the cumulative percentage initially, however it accounted for 9.3 percent after rotation sums of squared loadings.

This tells the importance of the rotation procedure in Factor analysis which is able to spread the percentages over the nine factors identified.

Factors loadings of identified TQM principles

The items loaded strongly on each of their assigned factor (component) as shown in Table 19 with detailed items shown in Appendix A.

Table 19: The Factor Loadings of Identified TQM Principles

Item	TQM Principles (Latent Factors)								
	1 CF	2 BM	3 ICC	4 TSM	5 QIS	6 HRM	7 TMV	8 SR	9 TS
1	0.668								
2	0.663								
3	0.639								
4	0.621								
5	0.617								
6	0.609								
7	0.395								
8		0.737							
9		0.684							
10		0.676							
11		0.603							
12		0.557							
13		0.510							
14		0.503							
15			0.694						
16			0.592						
17			0.559						
18			0.546						
19			0.538						
20			0.488						
21			0.475						
22			0.457						
23				0.692					
24				0.589					
25				0.546					
26				0.527					
27				0.511					
28				0.464					
29				0.455					
30				0.443					
31				0.374					
32				0.371					

Cont'd of Table 19: The Factor Loadings of Identified TQM Principles

33	0.662	
34	0.585	
35	0.582	
36	0.505	
37	0.497	
38	0.492	
39	0.407	
40		0.636
41		0.607
42		0.550
43		0.529
44		0.510
45		0.467
46		0.614
47		0.635
48		0.470
49		0.474
50		0.416
51		0.665
52		0.609
53		0.578
54		0.503
55		0.487
56		0.533
57		0.509
58		0.437
59		0.373
60		0.372

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Significant at the 0.01 level (2-tailed);

Note; Latent Factors defined after CFA: Customer Focus (CF); Benchmarking (BM); Institutional Culture and Effective Communication (ICC); Technical Systems Management (TSM); Quality Improvement and Staff Satisfaction (QIS); Human Resource Management (HRM); Top-Management Committed and Visionary Leadership (TMV); Social Responsibility (SR); Tangible of Service (TS)

The Factor Matrix gives the loadings, that is, the correlations between each item and each factor (scale). The higher the absolute value of the loading, the more the factor contributes to the variable. This is a method to check the appropriateness of the items assigned to the factors and it considers the correlation

of each item with each factor (Meyers, Gamst, & Guarino, 2006). This method has been generally used to evaluate the assignment of items to factors for developing an instrument (Saraph et al., 1989; Zhang et al., 2000).

As already mentioned, the items were highly correlated with the factors they intended to measure. Any correlation score of less than 0.30 indicates that the associated item could not explain adequately the variance with the rest of the items in that factor. All the 60 items positively correlated with each factor assigned to, and the factor loadings ranged from 0.371 (TM, item 32) to 0.737 (CF, item 8).

Internal consistency analysis for internal customer instrument

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group under a latent factor (TQM principles). In most situations a reliability coefficient value of 0.70 or higher is considered "acceptable" in most social science research situations. After factor analysis had been done, the reliability of the instrument, in general, was also evaluated. The reliability analysis was conducted to ensure that the nine individual factors were statistically reliable. The Cronbach coefficient alpha value for the nine latent factors (principles), suggested that the TQM principles have relatively high internal consistency. Cronbach's alpha values of each factor (principle) in this study were above the suggested cut-off value of 0.70 (Vaske, Beaman, & Sponarski, 2017).

On one hand, the Cronbach's coefficient alpha employs the covariances among the item values for the TQM Principles (Factors) and ranged from 0.811 to

0.920, as shown in column 2 of Table 20. On the other hand, whereas the alpha based on standardised items employs the correlations among items, and the alpha value is based on the assumption that all of the items have equal variances, which is often false in practice. However, from the study, the Cronbach's alpha Based on Standardized Items had the values closer to the Cronbach's alpha of 0.813 to 0.921.

Table 20: Reliability Statistics of the TQM Principles (Factors)

TQM Principles (Factors)	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
(CF)	0.920	0.921	7
(BM)	0.905	0.906	7
(ICC)	0.910	0.910	8
(TSM)	0.909	0.910	10
(QIS)	0.892	0.906	7
(HRM)	0.843	0.844	6
(TMV)	0.811	0.813	5
(SR)	0.844	0.846	5
(TS)	0.872	0.872	5
Overall Alpha	0.981	0.981	60

Since each of the reliability coefficients was more than 0.70 they were considered acceptable or reliable. Therefore, there was much confidence to conclude that each factor is a sufficiently reliable measurement of the TQM concept. Looking at Table 20 again, it depicts the values of Cronbach's alpha for different TQM implementation factors and the values indicating that some factors are more reliable than others. It is therefore in agreement that, the factor analysis is appropriate.

Anti-image matrices for the internal customers instrument

The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test measures strengths of the relationship among variables (items) and reliability of the factors (principles)

in an overall situation also through the Cronbach's alpha values of each factor (Vaske et al., 2017). However, the Anti-image correlation is used to show the measure of sample accuracy for each item under the constructed factors. The test statistics depicted good values for all 60 items of the internal customers' instrument, with the values ranging from 0.936 to 0.978.

Correlation analysis for the internal customer instruments

A Pearson-Product-Moment correlation coefficient was used for the correlation analysis of the internal customers' data. This method has been generally used to evaluate the assignment of items to scales (factors) for developing an instrument (Saraph et al., 1989; Zhang et al., 2000). In interpreting the strength of relationships between two variables, the recommendations suggested by Rowntree (2015) were followed. The guidelines are the following:

- if a correlation coefficient (r) range from 0.00 to 0.20, then the strength of the relationship is very weak or negligible;
- if a correlation coefficient (r) range from 0.21 to 0.40, then the strength of the relationship is weak or low;
- if a correlation coefficient (r) range from 0.41 to 0.70, then the strength of the relationship is moderate;
- If a correlation coefficient (r) range from 0.71 to 0.90, then the strength of the relationship is strong or high; and finally
- If the correlation coefficient (r) range from 0.91 and 1.00, then the strength of the relationship is very strong or very high.

Pearson's correlation analysis was performed to find out whether or not the way the respondents answered the questions for the 11 TQM principles (factors) correlate to each other. A correlation matrix for Pearson's correlation coefficients between each of the 11 factors of the internal customers' instrument and their measurements were determined. The bivariate correlation procedure was subjected to a two-tailed test of statistical significance at the 0.01 level of significance with $(\alpha) = 0.01$. A two-tailed test is used when the nature of the relationship is not predictable or known (Field, 2013). In this regard, this analysis was conducted in order to ascertain whether items had been appropriately assigned.

Findings from the test statistics depicted that, each of the eleven factors significantly correlated to each other and they were all positives. The principles of Correlation Coefficients ranged from 0.595 which is "Moderate" to 0.785 "strong" or "High" (See detailed computation in appendix C).

Confirmatory Factor Analysis of the External Customers' Instrument

The external customers' instrument which had two parts covering expectation and perception was also factor analysed for sample adequacy and reliability of the instrument. The five factors of service quality dimensions were identified through Exponential Factor Analysis (EFA) with 26 items after pilot-testing. However, in order to confirm the appropriateness of the items assigned to the factors or the dimensions, a Confirmatory Factor Analysis (CFA) was then conducted for the identified five factors with the number fixed for extraction. The test-statistics indicated the KMO values of sampling adequacy to be 0.96 and 0.97

for expectations and perceptions, respectively, with Bartlett's Test of Sphericity which is statistically significant at 0.00, with Chi-square of 7165.73.

Total variance explained by identified service quality dimensions

Total Variance Explained (see Table 21) depicted the initial Eigenvalues, which tell us the percentage of the variance in the 26 items captured by the five service quality dimensions. The five service quality dimensions used in assessing the service performance of the university explained 72 percent.

Table 21: Total Variance Explained by the Service Quality Dimensions

Component (Factor)	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %
A	13.99	53.79	53.79	13.99	53.79	53.79	5.09	19.59	19.59
B	1.79	6.90	60.68	1.79	6.90	60.68	4.20	16.14	35.73
C	1.33	5.11	65.80	1.33	5.11	65.80	3.53	13.59	49.32
D	0.84	3.23	69.03	0.84	3.23	69.03	3.17	12.20	61.52
E	0.76	2.91	71.93	0.76	2.91	71.93	2.71	10.42	71.93

Note: Extraction Method: Principal Component Analysis.

Component: A= Core service or service product; B= Human element of service delivery; C= Non-human element of service delivery; D= Tangibles of service; E= Social responsibility



The Factor A, “core service” initially explained 54 percent of the cumulated percentage of 72, however through the rotated sums of squared loadings it was reduced to 20 percent indicating how relevant the rotation was at a significant level of 0.01.

Factors loadings of identified service quality dimensions

As shown in Table 22, the external customers’ instrument which is in the dichotomy form was factor loaded since it was one of the assumptions for factor analysis to be recommended.

Table 22: The Factor Loadings of Identified Service Quality Dimensions

Item	Service Quality Dimension				
	B	E	A	D	C
PB3	0.720				
PB7	0.701				
PB1	0.699				
PB4	0.697				
PB5	0.661				
PB2	0.643				
PB8	0.613				
PB6	0.603				
PE4		0.793			
PE3		0.777			
PE2		0.731			
PE5		0.716			
PE1		0.707			
PA3			0.805		
PA2			0.801		
PA1			0.781		
PA4			0.743		
PD2				0.687	
PD3				0.663	
PD4				0.649	
PD5				0.621	
PD1				0.523	
PC2					0.758
PC3					0.626
PC1					0.617
PC4					0.615

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.^a a= Rotation converged in 6 iterations. **Service Quality Dimensions:** A= Core service or service product; B= Human element of service delivery; C= Non-human element of service delivery; D= Tangibles of service; E = Social responsibility

The items were loaded strongly on each of their assigned service quality dimensions (factors) for both expectation and perception, however, the perception

factor loadings were chosen to explain the procedure since similar items were stated for the two parts. The factor loading for the perception ranged from 0.523 to 0.805 with Factor labeled A (the Core service or service products), item PA3. “Providing information through media service facility” had the highest factor loadings (0.805).

Internal consistency analysis for external customer instrument

Cronbach's alpha will generally increase as the intercorrelations among test items increase and is thus known as an internal consistency estimate of reliability of test scores. Intercorrelations among test items are maximised when all items measure the same dimension (factor). Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional latent (factor). Cronbach's alpha values obtained for the five quality dimensions of service delivery are shown in Table 23.

Table 23: Reliability Statistics of the Factors (external customer perception)

TQM Principles (Factors)	Cronbach's Alpha	Alpha Based on Standardized Items	No. of Items
Core service or service product (A)	0.884	0.884	4
Human element of service delivery (B)	0.930	0.930	8
Systematization of service delivery (C)	0.896	0.897	4
Tangibles of service (D)	0.894	0.895	5
Social responsibility (E)	0.902	0.902	5
Overall Alpha	0.965	0.965	26

Anti-image matrices for external customers instrument

The anti-image correlation measures the sampling adequacy for the individual items, the same function that KMO measure the general sampling adequacy for the factors or quality dimensions of the instrument. The test statistics depicted good values for all items (variables) of the five service quality dimensions with the values ranging from 0.935 to 0.979.

Correlations analysis for external customers instruments

The test statistics also depicted the correlations among each dimension and their respective service quality dimensions (factors) for both expectations and perceptions instruments of external customers. The correlation analysis was once again performed on the five service quality dimensions to determine their correlation status. The Dimensions were highly correlated with each other as they intend to measure. All the P-value were found to be lower than the two-tailed significant level of 0.01 of which there is much evidence to reject the null hypothesis saying there is no correlation among the service quality dimensions.

Summary of the refinement for the customers' instruments

A valid study should demonstrate what actually exists and a valid instrument or measure should actually measure what it is supposed to measure (Denzin & Lincoln, 2005). Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. Obviously, any research instrument cannot be 100% valid, so validity is generally measured in degrees. As a process, validation involves collecting and analysing data to assess the accuracy of an instrument. There are numerous statistical tests

and measures to assess the validity of quantitative instruments, which generally involves pilot testing. This part of the analysis computed and focuses on content validity and external validity.

Content validity refers to the appropriateness of the content of an instrument. In other words, the instruments accurately assess what the researcher want to know of which is particularly important with what to achieve. External validity is the extent to which the results of this study could be generalized from the sampled to the population. Establishing external validity for an instrument, then, follows directly from sampling. Recall that a sample should be an accurate representation of a population, because the total population may not be feasible. An instrument that is externally valid helps obtain population generalisability, or the degree to which a sample represents the population.

Reliability can be thought of as consistency. Thus, the instrument consistently should measure what it is intended to measure. It is not possible to calculate reliability; however, there are four general estimators that could be used to encounter in reading research. Notably among them and used in this research is the Internal Consistency Reliability which is the consistency of results across items, often measured with Cronbach's Alpha. Therefore for the consumers of your research to have much confidence in your research the most useful instrument should be both valid and reliable.

Research Question Three: To What Extent do the Internal Customers Perceive the Implementation of the Principles of TQM?

Introduction

Based on literature review and research studies, the level of implementation of Total Quality Management (TQM) in improving the management performance for University of Cape Coast particularly teaching and learning system and other services was evaluated from the Internal Customers (Staff) perspective. The identified eleven TQM principles commonly applicable to service institutions were adapted and information solicited from the staff of the University. The level of TQM implementation was measured by the sixty items built on a five-point Likert scale (1= Very low, 2= Low, 3=Medium, 4= High, 5=Very High). The respondents were asked for their perception on the level of TQM implementation in the University with the given statements under each of the principles (factors).

Homogeneity Test of the Views of Internal Customer Subgroups

The first point was the homogeneity test for the various subgroups perception. The views of various internal customer subgroups of the University were hypothetically tested. The test statistics provided the actual result of the chi-square goodness-of-fit test (see Table 24). The chi-square (χ^2) test statistic sort to summarise the residuals hence provided information on the overall difference between the data and the hypothesis. The Observed N , are the observed frequencies, while the Expected N , is the theoretically expected frequencies. Asymptotic significance refers to the p-value and is 0.00 for internal customers test statistic result in this study. Usually, the null hypothesis is rejected if $p\text{-value} < \alpha$ (0.01).

Table 24: Test Statistics Output of Internal Customer Subgroups

Employee Status	Observed N	Expected N	Residual
Administration (Senior member)	13	64.8	-51.8
Lecturer	52	64.8	-12.8
Senior staff	106	64.8	41.3
Junior staff	88	64.8	23.3
Total		259	

Test Statistics

Chi-Square (χ^2)	78.498 ^a
Degree of freedom	3
Asymptotic significance	0.00

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 64.8.

Table 24 depicts that the test statistics are statistically significant with chi-square (χ^2) value of 78.498^a, degree of freedom of (3), and p-value of $0.00 < \alpha = (0.01)$. Therefore, the null hypothesis can be rejected and conclude that there are statistically significant differences in the views of internal customer subgroups on the levels of TQM implementation in the university. The significance level defines the distance the sample mean must be for the null hypothesis to be considered statistically significant. The confidence level defines the distance for how close the confidence limits are to the sample mean. Both the significance level and the confidence level define a distance from a limit to a mean when the distances in both cases are exactly the same. The confidence level is equivalent to $1 - \alpha$ (the alpha level or significance level). There is no significance level that distinguishes between the studies that have a true effect and those that do not with 100 percent accuracy. The common alpha values of 0.05 and 0.01 are simply based on tradition. For a significance level of 0.01, expect to obtain sample means in the critical region 1% of the time when the null hypothesis is true. When the

significance level is 0.01, the corresponding confidence level is 99%. Since this is really the case, where P-value is equal to 0.00, with the confidence level of 99%, the conclusion is that the views of internal customer subgroups are not the same on the level of TQM principles being practiced in the University.

Statistical Analysis of Internal Customer Perception (in aggregate)

Descriptive statistics in aggregate was conducted on the internal customers' responses and Table 25 presents the means, standard deviations, the means of the items means (factors or principles means) and interpretation of the level of implementation of each TQM principle. The number of items under each of the eleven principles ranged from a minimum of three items to a maximum of seven. In aggregate, it was revealed that in the University of Cape Coast, the level of TQM implementation of the eleven TQM principles was moderate, meaning they were neither low nor highly implemented. For instance, the Top-management commitment and visionary leadership (TMV) had the means for four items ranging from 2.73 to 2.95 with the Factor (TMV) mean of 2.89 and large values of standard deviation ranged from 0.95 to 1.11. However, all the means had large standard deviation means. The implication is that the values in the data set are farther away from their means, on average. The factor mean for Continuous Improvement and Innovations (CII) was 2.96, which was found within the range of 2.61 and 3.40, indicating a moderate level of implementation. Nonetheless, all the other TQM principles had their means within the "moderate" scale range as depicted in Table 25.

Table 25: Statistics on the Internal Customers Perception on the Level of Implementation

Item Number

Scale	Desc.	1	2	3	4	5	6	7	Factor Mean	Level of Imp.
TMV	Mean	2.95	2.93	2.94	2.73				2.89	Mod*
	S.D	0.99	0.95	1.11	1.10				0.824	
HRM	Mean	2.93	2.90	3.03	2.81	2.79	2.59	2.73	2.83	Mod*
	S.D	1.03	1.01	1.07	1.10	0.94	1.00	0.97	0.759	
TSM	Mean	2.83	2.75	2.78	2.75	2.75			2.77	Mod*
	S.D	0.95	0.97	0.99	0.95	0.98			0.754	
MIC	Mean	2.85	2.71	2.91	2.82	2.71	2.73		2.79	Mod*
	S.D	0.96	1.01	1.11	1.08	1.01	1.07		0.729	
SQ	Mean	2.75	2.82	2.92	2.89	2.80	2.75	2.75	2.81	Mod*
	S.D	1.04	1.07	1.09	1.01	1.02	1.02	1.12	0.778	
TS	Mean	2.93	3.02	2.82	2.78	2.98			2.91	Mod*
	S.D	1.04	1.02	1.03	0.99	0.98			0.824	
SR	Mean	2.93	2.83	2.75	2.83	2.89	2.86		2.85	Mod*
	S.D	1.02	0.99	1.05	1.00	1.06	1.07		0.815	
BM	Mean	2.88	2.86	2.77	2.75	2.85			2.82	Mod*
	S.D	0.99	0.99	1.02	1.05	1.16			0.876	
CF	Mean	2.81	2.84	2.86	2.77	2.78	2.81	3.17	2.86	Mod*
	S.D	1.00	1.04	1.02	1.15	1.13	1.1	1.16	0.890	
ICS	Mean	2.76	2.76	2.69	2.71	2.88			2.76	Mod*
	S.D	1.06	1.01	1.05	1.05	1.58			0.903	
CII	Mean	2.97	2.97	2.94					2.96	Mod*
	S.D	1.11	1.16	1.22					1.059	

Note: SD = Standard Deviation, Mod = Moderate level of implementation; The 11 TQM principles defined: Top-Management Commitment and Visionary Leadership (TMV); Human Resource Management (HRM); Design Quality and Process Management (Technical System) [TSM]; Management Information and Communication System (MIC); Service Quality Culture (SQ); Tangibles of service (Servicescapes) [TS]; Social Responsibility (SR); Benchmarking (BM); Customer Focus (CF); Internal Customer (Staff) Satisfaction (ICS); Continuous Improvement and Innovation (CII).*

Statistical Analysis of the Internal Customer Subgroups Perception

The study further analysed the perception of each of the subgroups of the internal customers. This was found to be of relevance since the University customers in the different subgroups had diverse needs. In this regard, the analysis further determined the level of implementation of the eleven principles according to the four subgroups of the internal customers. The results shown in Table 26 indicated how the various subgroups perceived the strengths and weaknesses of each of the TQM principles being implemented.

Top-management commitment and visionary leadership (TMV)

Top management commitment and visionary leadership in a university institution is one of the principles and major determinants of successful TQM implementation, which has a relationship with service quality performance and customer satisfaction (Sit et al., 2009).

Table 26: Perceived Level of TQM Implementation by Customer Subgroups

Item Sym.	Administrators (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
	Mean	Level	Mean	Level	Mean	Level	Mean	Level
TMV	3.60	High	2.52	Low	3.12	Mod	2.73	Mod
HRM	3.32	Mod	2.49	Low	2.98	Mod	2.77	Mod
TSM	3.31	Mod	2.45	Low	2.92	Mod	2.70	Mod
MIC	3.30	Mod	2.36	Low	3.01	Mod	2.70	Mod
SQ	3.14	Mod	2.33	Low	3.10	Mod	2.69	Mod
TS	3.52	High	2.39	Low	3.17	Mod	2.80	Mod
SR	3.41	High	2.43	Low	3.14	Mod	2.66	Mod
BM	3.40	Mod	2.33	Low	3.08	Mod	2.72	Mod
CF	3.65	High	2.43	Low	3.13	Mod	2.69	Mod
ICS	3.32	Mod	2.19	Low	2.97	Mod	2.76	Mod
CII	3.69	High	2.28	Low	3.35	Mod	2.79	Mod

Note: level = level of implementation; Mod=Moderate; The 11 TQM principles defined: Top-Management Commitment and Visionary Leadership (TMV); Human Resource Management (HRM); Design Quality and Process Management (Technical System) [TSM]; Management Information and Communication System (MIC); Service Quality Culture (SQ); Tangibles of service (Servicescapes) [TS]; Social Responsibility (SR); Benchmarking (BM); Customer Focus (CF); Internal Customer (Staff) Satisfaction (ICS); Continuous Improvement and Innovation (CII).

The Administrators (senior members) established that the level of implementing “Top-management Commitment and Visionary Leadership (TMV)” in the university is high with a mean of 3.60 (see Table 26). To the administrators, the management is committed to TQM operation as an approach to ensuring quality and reviewing quality-related programmes. Lecturer respondents rated the level

of implementation as low with a mean of 2.52. However, both junior and senior staff said the implementation is moderate, implying it is neither low nor high.

Human resource management (HRM)

The second TQM principle is the Human Resource Management (HRM) and by definition, HRM is the policies and practices one needs to carry out for the employee or human resource aspects of a management position including recruiting, screening, training and development, empowerment, rewarding and appraisals. Administrators, on one hand, rated the level of human resource management implementation as moderate (3.32) in the University. The Lecturers rated the implementation below (2.49), while the senior (2.98) and junior (2.77) staff also rated this principle moderate.

Design quality and process management (Technical System) [TSM]

The design of services is a relevant dimension of quality management. It is vital in the sense that, it either meets or exceeds the expectations and desires of customers and eventually leads to the enhancement of institutional performance. All the Lecturer respondents rated the Technical System in the university as low (2.45). However, the other sub-groups, administrators, Junior and Senior staff rated its implementation as moderate, as depicted in Table 26.

Management information and communication system (MIC)

Management Information and Communication System helps an organisation to ensure the availability of high quality, timely data and information

for all customers, both internal and external (Teh et al., 2009). The Lecturers rated the implementation of this principle low with a mean score of 2.36, while administrators (3.30), the senior (3.01) and the junior staff (2.70) that is moderate.

Systems quality culture (SQ)

The prevailing institutional culture can support TQM by providing an environment conducive to successful implementation of TQM in the university. As indicated in Table 26, the Administrators and supporting staff (senior and junior staff) had scores of 3.14, 3.10 and 2.69, respectively, thus rated the quality culture among the staff in the University as neither low nor highly implemented. However, the Lecturers rated the practices as low. Therefore the status of transformational change of quality is questionable in the institution.

Tangibles of service (Servicescapes) [TS]

Tangible facets of the service facility are another TQM principle which includes; equipment, machinery, signal, employee appearance, as well as the man-made physical environment, popularly known as the “servicescapes”. The results depict that, Lecturers were not satisfied with its availability, and rated it low (2.39), the Administrators rated it high (3.52), while both senior and junior staff rated it moderate as shown in Table 26.

Social responsibility

Social responsibility is an important concept, which is probably missed out completely in the quality management literature. However, this TQM principle improves an institution’s image and goodwill thereby influencing customer perceptions of service quality. Administrators perceive social

responsibility as highly implemented (3.41) at the University. The senior staff (3.14) and junior staff (2.66), on one hand, rated this TQM principle as moderate, while Lecturers rated social responsibility level of implementation low (2.43). The implication is that, the administrators may initiate the corporate social responsibility of the University but the lecturers in the academic unit may not be aware or not depend of it due largely to communication gap.

Benchmarking

Benchmarking is the process of comparing performance information, within the institution as well as what prevails outside the institution (Sit et al., 2009). For institutions to be knowledgeable of what they do, there is the need for them to have the ability to learn and study how others do their things. This is an important feature of continuous improvement. Administrators rated its implementation in the university as moderate (3.40). However, the Lecturers rated it low (2.33), while both the junior (3.08) and senior (2.72) staff rated it moderate that is neither low nor high.

Customer focus

Customer focus is the most important principle of TQM with regard to the institutional provision of services. TQM institutions must have knowledge in their customers' requirements and be responsive to customers' demand, and measure customer satisfaction through TQM implementation (Zakuan et al., 2010). It is necessary to identify customers' needs and their level of satisfaction. Lecturers rated the University knowledgeable in their customers' requirements as low

(2.43). The administrators rated it high with a mean of 3.65. However, the senior (3.13) and junior (2.69) staff rated it moderate.

Internal customer (Staff) satisfaction

In a total quality context, internal customer satisfaction is the driving force for an institution to improve its performance (Zairi, 2000). The administrators had a mean of (3.32), senior staff (2.97) and junior staff rated it moderate (2.76) implying that the level of implementation of this TQM principle was neither high nor low. The lecturers, on the other hand, rated the level low (2.19). The implication is that those directly providing the services (lecturers) to the primary external customers, the students probably were not satisfied with their needs.

Continuous improvement and innovation

Another principle of the TQM philosophy is continuous improvement and innovation. Traditional systems operated on the assumption that once an institution achieved a certain level of quality, it is considered enough and needed no further improvements. The administrators rated this TQM principle high (3.69), while the lecturers rated it as low (2.28). Both senior and junior staff rated it moderate with scores of (3.35) and (2.79) respectively.

Relative Importance Index Analysis for Internal Customer Respondents

Relative Importance Index (RII) facilitates the identification of the level of significance of the TQM principles contributing to the successful implementation of TQM in the university. The importance indexes ranked by the internal

customer subgroups are shown in Table 27. A ranking of importance index was undertaken to establish the most influential of the TQM principles. Having identified the 11 TQM principles for successful implementation in UCC, the RII was computed for the TQM Principles under each of the internal customer subgroups.

Table 27: Relative Importance Index on Internal Customers’ Perception

No.	TQM Principles	Relative Importance Indexes (%)			
		Lecturers	Administrators (senior members)	Senior Staff	Junior Staff
1	TMV	50.3	71.9	62.4	54.6
2	HRM	49.8	70.6	59.5	55.4
3	TSM	49.1	66.2	58.5	54.1
4	MIC	50.5 (1st)	65.9	60.2	54.1
5	SQ	46.7	65.7	62.1	53.7
6	TS	47.7	72.6	63.4	56.1 (1st)
7	SR	48.7	68.2	62.7	53.3
8	BM	46.0	68.8	61.5	54.5
9	CF	48.6	76.0 (1st)	62.5	53.8
10	ICS	43.9	67.2	59.2	51.2
11	CII	45.5	73.9	66.9 (1st)	55.8

The 11 TQM principles defined: Top-Management Commitment and Visionary Leadership (TMV); Human Resource Management (HRM); Design Quality and Process Management (Technical System) [TSM]; Management Information and Communication System (MIC); Service Quality Culture (SQ); Tangibles of service (Servicescapes) [TS]; Social Responsibility (SR); Benchmarking (BM); Customer Focus (CF); Internal Customer (Staff) Satisfaction (ICS) and Continuous Improvement and Innovation (CII).

Since the chi-square hypothesis tested revealed the diverse views among the sub-groups on the level of TQM implementation, it was deemed imperative to rank the significance of TQM principles accordingly. In the case of the Lecturers, all their scores on RII were found below 51 percent. Nonetheless, the Lecturers considered “Management Information and Communication System (MICS)”, as

the most influential TQM principle among the rest for ensuring quality in the University (50.5%). Lecturers revealed that Internal Customer (Staff) Satisfaction (43.9%), Continuous Improvement and Innovation (45.5%) and Benchmarking (46%) are the least TQM principles that influenced their perception in the university performance.

From the Administrators (senior members) perspectives, they share different views as shown in column 4 of Table 27. The Administrators had higher percentages ranging from 65.7% to 76.0%. According to them, the customers' focus (76%) is the most influential principle, followed by Continuous Improvement and Innovation (73.9%). However, they considered Design Quality and Process Management (Technical system) (66%); Management Information and Communication System (66%) and service quality culture (66%) as least influential TQM principles.

The third internal customer-group is the senior staff, and their ranking of the TQM principles being practised has been shown in column 5 of Table 27. Their rating ranged from 58.5% to 66.9%. The senior staff scored 66.9 percent for Continuous Improvement and Innovation (CII) to be the most influential TQM principles, followed by Tangibles of service (63.4%). The Design Quality and Process Management (58.5%) were considered to be the least influential TQM principle in the implementation.

In the case of junior staff, as shown in the last column of Table 27, they ranked TQM principles being implemented in the university from 51.2% to 56.1%. Their perception depicted that the most influential principle among them

were Tangibles of service (56.1) and Continuous Improvement and Innovation (55.8). They however considered the Internal Customer (Staff) Satisfaction (51.2%) to be the least influential TQM principles.

Discussion of Findings on Research Question Three:

The level of TQM implementation was determined from the internal customers (employees) perspective. Generally, the internal customer subgroups were of diverse views on the levels of TQM implementation in the University having practiced TQM for about 18 years. Obviously, lecturers are directly involved in the provision of service to the primary external customers, the students. However, they were not satisfied with the implementation levels of all the identified TQM Principles.

Nonetheless, the administrators were of the view that few of TQM principles' levels of implementation were high, while the rest were found to be moderately implemented. The supporting staff (junior and senior staff) indicated that the implementation levels of all the TQM principles were neither low nor high. However, the internal customer subgroups had different views about its level of implementation in the University quality management system.

Some of the views of the internal customers substantiate of the responses made by some of the institutional management. For instance, the degree of support and commitment by top management is relevant for successfully TQM implementation, and it is one of the most important TQM principles, however in practices both management and internal customers considered it to be superficial.

Almost all the participants admitted that management information and

communication systems exist, however in terms of effectiveness, it was neither low nor high. Record keeping and information flow about quality concept and benefits from the TQM approach, monitoring procedures and the sharing of TQM success stories were found to be poor. Any effective communication influences an institution to move systematically towards employees' involvement and customer satisfaction, as well as improving the institution performances (Ooi et al., 2007).

In the TQM implementation, measurement is needed to determine the situation of the institution, to assess how much they need to improve on the quality dimension. What was lacking was the Quality Improvement team to make follow-ups on improvement activities. Nonetheless the repercussion is that, the horizontal and vertical communication between the two units (academic unit and administration and support unit) of the university seems to be ineffective.

The success in TQM practices is impossible without the full and active involvement of all employees. Once customer needs are understood, at the macro and more detailed levels, there is the need to pay heed to the voices of the employees of institutions (Phipps, 2001). Listening to the voices of staff is one of the ways to actively involve them. It is a very important success factor for a quality management system. The university therefore needs a strong culture behaviour to benefit from the TQM implementation. Gore and Gore (1999), emphasised that the quality culture of an institution is the strong basis for enhancing an institution's success.

The internal customers also have needs and TQM philosophy deems the importance of satisfying them with those needs (Sallis, 2014). They probably

become satisfied when they had their needs identified and fulfilled in the part of continuous improvement programmes. Their involvement also meant being empowered to make their own decisions in matters related to service quality delivery. The internal customers; lecturers, administrators (senior members), senior and junior staff define the quality of the processes associated with the delivering of services.

In the case of important indexes computed on the internal customers' level of ratings, though all the TQM principles were found to be influential it depended on the customer subgroup. What was most influential to one subgroup in one way or the other did not seem to have any influence on the other subgroup.

The current study supports the results of Ugboro and Obeng (2000) whose study focused on organisations' commitment to the implementation of TQM principles. The respondents (employees) in general were dissatisfied with most of the TQM principles mentioned in this current study, including top management commitment; employee empowerment; education and training on TQM; customer focus and management information and communication systems.

Oakland (as cited in Oakland, 2014), for instance, established that, TQM is concerned with moving the locus of control from outside the individual to within. The objective is to make everyone accountable for their own performance and to get them committed to attaining quality in a highly motivated fashion. TQM practices involve: employee involvement, customer focus, teamwork, reduction of reworks, supplier relationships and continuous improvement in all aspects (Yang, 2005). However, a number of definitions have been provided in

the literature but no single definition can cover the whole aspects of TQM (Eriksson & Hansson, 2003).

Another viewpoint has to do with the two aspects of TQM comprising of the ‘hard’ production and operation oriented and ‘soft’ employee’s related elements (Wilkinson, 1998). The “Soft” side of TQM (TQM principles) that focuses on employees’ related issues becomes more important when it is considered in the context of human resource management and studies have witnessed that TQM practices are positively related with the human resource management (Tari & Sabater, 2006; Wilkinson, 1998). A number of studies (Terziovski, & Samson, 1999; Zakuan, Yusof, Laosirihongthong, & Shaharoun, 2010; Rahman, & Bullock, 2005), claim that TQM practices have a significant impact on organisational performance but it is important that its impact should first be on employees’ (internal customers) satisfaction, prior to its effects on the performance (Prajogo & Cooper, 2010).

Literature on TQM practices has proved empirically that effective implementation of TQM leads organisations towards increased performance (Flynn et al., 1995; Prajogo & Sohal, 2006) and also increased job satisfaction among employees (Boon, Abu, Arumugam, Vellapan, & Kim, 2007). TQM practices are found to have a significant impact on employee’s job satisfaction and it also helps to create a healthy working environment in the organization (Haber et al., 2018).

Research question Four: What are the Effects of TQM Implementation on Overall Service Quality Performance in UCC?

Introduction

The research question four assessed the outcome of Total Quality Management (TQM) implementation in the University on institutional service quality performance. After reliability and validity of the external customers' instruments had been computed, descriptive statistics involving the mean, standard deviation, Cohen's d test (effect sizes), paired sample t-test and important indexes were conducted to inform the outcome of the TQM implementation.

Homogeneity Test of the Views of External Customer Subgroups

The homogeneity test of external customer-perceived service quality using chi-square distribution was conducted to test if there were any differences in perceptions among the various external sub-groups. The data from individual participants of the various external sub-groups in the university were tested using the chi-square test of association. The relative means of perceived service quality with respect to the dimensions of service quality was associated with the respondents. The chi-square test computed is depicted in Table 28. The test statistic was found statistically to be significant, with Chi-Square (χ^2), value of 271.85^a, degree of freedom (2) and p-value = 0.00 < α (0.01).

Table 28: Test Statistics Output of External Customer Sub-groups

External Customer	Observed N	Expected N	Residual
Employer/Business	45	120.3	-75.3
Student	268	120.3	147.7
Alumni	48	120.3	-72.3
Total	361		
Test Statistics			
Chi-Square			271.850 ^a
Df			2
Asymp. Sig.			.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 120.3.			

Therefore, the null hypothesis was rejected and the conclusion was that there are statistically significant differences in the external customer sub-groups' perceptions on service quality dimensions. The deduction is that the University is serving diverse external customers and there is enough evidence to demonstrate that the various customer-groups have different views about the institutional service delivery.

Statistical Analysis of the External Customer Subgroup Perception

In order to clearly establish the diverse views of the respondents, information about the identified five service quality dimensions were subjected to statistical analysis. The five quality dimensions included in this study were: Core service or service product (A); Human element of service delivery (B); Systematization of service delivery: non-human element (C); Tangibles of service (D) and Social responsibility (E). The grand mean scores of the three sub-groups were computed with their interpretations shown in Table 29. The study depicted individual subgroups expectations and how they perceived the strengths and weaknesses of each of the five service quality dimensions.

Table 29: Statistics on the Grand Mean Scores of the Service Quality Dimensions

Dim	Scores/ Interpretation	Employers (45)		Students (268)		Alumni (48)	
		Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean
A	Grand Mean	4.77	2.26	4.17	3.46	4.12	3.38
	Level of Importance /Satisfaction	H/Imp	Unsatis	Impor	Good	Impor	Satis.
B	Grand Mean	4.64	2.29	4.33	3.13	4.21	3.15
	Level of Importance /Satisfaction	H/Imp	Unsatis	H/Imp	Satis	H/Imp	Satis

C	Grand Mean	4.55	2.24	4.34	3.17	4.23	3.38
	Level of Importance /Satisfaction	H/Imp	Unsatis	H/Imp	Satis	H/Imp	Satis
D	Grand Mean	4.54	2.28	4.12	3.24	4.19	3.15
	Level of Importance /Satisfaction	H/Imp	Unsatis	Impor	Satis	Impor	Satis
E	Grand Mean	4.71	2.00	4.05	3.19	4.07	3.17
	Level of Importance /Satisfaction	H/Imp	Unsatis	Impor	Satis	Impor	Satis

Note: Exp. = Expectation; Pcep. = Perception; H/Imp= Highly important; Impor= Important;; Satis= Satisfactory; Unsatis=Unsatisfactory

Dim = Dimension; **A** = Core service or service product; **B**= Human element of service delivery; **C**=Systematization of service delivery: non-human element; **D**=Tangibles of service (Servicescapes); **E**= Social responsibility

Core service or service product (A)

The first service quality dimension assessed was the Core service or Service product (symbolised with letter A). The core service portrayed the content of service or the essence of the service being provided by the institution. The study solicited information on the customers’ needs and expectations prior to the establishment of any form of relationship with the University, while on the perception part, interest was in the outcome of customer’s experiences after receiving services from the University (see Table 29 and detailed computation in Appendix B).

The Employers expectation grand mean for the quality dimension was 4.77. This might mean that, to employers, the Core Services were highly important as far as an education service is concerned. However, the employers’ perception mean was 2.26, indicating “Unsatisfactory”. The implication is that the employers were probably not content with the University service products. The means of responses from the students and alumni customer groups are shown in the same

Table 29. The students' overall expectation mean was 4.17 rated in the "Important" category. However, their perception part had an overall mean of 3.46 indicating "satisfactory" rating and meaning the Students' were satisfied with the delivery of the Core services.

The Alumni has overall expectation mean was 4.12 for the Core Service. It implies that the Alumni, like their students' counterpart, perceived the Core Service as important. Their experiences gained with the university had the perceived means of 3.38 rated in a "satisfactory" category.

Human element of service delivery (B)

The second service quality dimension is the Human element of service delivery. There were eight items in defining it. The employers' respondents had an overall expectation mean of 4.64 indicating "highly important" rating as shown in Table 29 (with detailed computation in Appendix B-2). In the case of the perception mean, the overall mean of 2.29 was scored and interpreted as an "unsatisfactory" rating. Employers were therefore not satisfied with the Service quality performance on this dimension. Students' overall expectation mean for human elements of service delivery was 4.33. They considered the dimension to be "highly important". Nonetheless, they were content since their perception mean rating was 3.13. In the case of Alumni on this quality dimension, their overall expectation mean was 4.21 indicating that it is "highly important" quality dimension to them. Their experiences gained with the university had an overall perception mean of 3.15 meaning they were satisfied with it (see Table 29).

Systematisation of service delivery: non-human element (C)

In the case of the systematisation of service delivery, five items were assigned to it and employers' customer group overall means for both expectations and perceptions were 4.55 and 2.24 respectively. This meant the employers' expectation for the dimension was “highly important” and through their experiences gained they were unsatisfied. The students' overall expectation mean of 4.34 suggested that this quality dimension was “highly important” to them. However, their perceptions mean of 3.17 portrayed that they were satisfied with the delivery from the university. Alumni with an overall mean of 4.23 depicted that the quality dimension was “highly important” to them. Their overall perception mean of 3.38 showed that they were satisfied with the delivery.

Tangibles of service (Servicescapes) [D]

The tangibles of service had five items with the employers' expectation and perception means of 4.54 and 2.28, respectively. The implication is that employers found the Tangibles of service to be highly important, but they were not satisfied with the delivery. For the students their expectation for the Tangibles of service was 4.12 showing highly important, while their perception for the Tangibles of service was 3.24 depicting satisfactory or showing they were satisfied. Alumni customer group, on the other hand, had expectation mean of 4.19, which is highly important. They also perceived the delivery as satisfactory with the overall mean of 3.15.

Social responsibility (E)

The fifth and the final service quality dimension used was Social responsibility. It had five items. Their overall means for expectation was 4.71 while the perception was 2.00. This might mean that they deemed the dimension to be highly important to the employers, while their experiences with the university probably made them to perceive the dimension as “unsatisfactory”. The students overall expectation mean was 4.05 indicating the dimension was important to them as shown in Table 29. Their perception mean of 3.19 probably meant that they perceived it to be satisfactory. Alumni overall expectation means for social responsibility was 4.07 with their perception mean of 3.17. This might mean that the dimension was important to them and they were satisfied with the University’s performance.

Relative Important Indexes Analysis for External Customer Sub-groups

The level of significance of the service quality dimensions was measured in two major parts which portrayed how they influenced the respondents’ expectations and perceptions.

Important indexes for the sub-group expectation

Importance Index facilitates the identification of the level of significance of the quality dimensions contributing to service quality delivery in the university. The external customers could have developed some expectations prior to the establishment of a relationship with the University and therefore their responses

were used to rank the quality dimensions according to the customer subgroups. Table 30 depicts the external customer sub-groups indexes for the service quality dimensions according to the three selected customer sub-groups and their expectations and perceptions.

Table 30: Relative Important Indexes for External Customers Sub-groups

Expectation Indexes			
Service quality dimension	Students	Alumni	Employer
Core service or service product (A)	83.3 (3 rd)	82.5 (4 th)	95.3(1 st)
Human element of service delivery (B)	84.9 (2 nd)	84.2 (2 nd)	92.7(2 nd)
Systematization of service delivery (C)	86.8 (1 st)	84.7 (1 st)	91.0(3 rd)
Tangibles of service (Servicescapes) (D)	82.4 (4 th)	83.8 (3 rd)	90.8(4 th)
Social responsibility (E)	81.0 (5 th)	81.5 (5 th)	90.3(5 th)
Perception Indexes			
Service quality dimension	Students	Alumni	Employer
Core service or service product (A)	69.2 (1 st)	67.6(1 st)	70.1(3 rd)
Human element of service delivery (B)	62.6(5 th)	63.0(4 th)	75.9 (1 st)
Systematization of service delivery (C)	63.4(4 th)	67.6(1 st)	74.7(2 nd)
Tangibles of service (Servicescapes) (D)	64.8(2 nd)	63.1(3 rd)	69.7(4 th)
Social responsibility (E)	63.8(3 rd)	63.4(2 nd)	64.0(5 th)

The student group considered the “Systematization of service delivery: the non-human element” as the most important quality dimension they expected from the university with a score of 86.8 percent. The implication might be that non-human elements are the most influential quality dimension that students focused on prior to their entry into the University for Education Service.

The students also rated the Human element of service delivery (85%) as the second important dimension they expected to see in operation. This was followed by the “Core service or service products” (83%) which constituted the main services of acquiring knowledgeable skills. The Alumni customer group had their expectation similar to that current students. They rated the “Systematisation of service delivery” as the most important dimension with 85 percent followed by

the “human element of service delivery” 84.2 percent, however, the alumni ranked Tangibles of service (83.8%) as third most important.

The Employers/Businesses were of different views as they ranked the Core service or service product (95%) as the most important expected service quality dimension. This could probably be due to the fact that they need graduates with employable skills to would fit for the job. However, they ranked “Human element of service delivery (93%)” second, followed by Systematization of service delivery (91%). Each of the three external customer sub-groups considered the “Social responsibility” as the lowest service quality dimension in terms of the level of importance.

Important indexes for sub-group perception

In Table 30, information is provided on the sub-groups’ perceptions concerning the ranking of the quality dimensions based on the external customers’ perceptions of the services provided by the university. In determining the relevancy of the quality dimensions of the Indexes, the experiences of customers sub-groups were used. Students ranked the Core service or service product as the most important or influential quality dimension with 69 percentage score. They also considered the tangible service aspect (65%) as second, while the dimensions of Systematization of service delivery (63.4%) and Human element of service delivery (62.6%) were ranked 4th and 5th, respectively.

The Alumni group, on the other hand, perceived the core service or service product and Systematization of service delivery as their most satisfaction quality dimension with a 68 percent score. However, they also perceived the human

element of service delivery (63%) as their lowest satisfied quality dimension. On the other hand, the Employers considered the human element of service delivery (76%) as their most influential quality dimension, followed by the Systematization of service delivery (75%) with social responsibility perceived to be the lowest level of satisfaction.

Hypothesis Testing: Paired Samples t-test

A hypothesis test was conducted to determine if differences exist between the respondents' expectations and perceptions. It is imperative to test the hypotheses as evidence in support of the gap analysis to be computed on service quality dimensions used in assessing the delivery of education service to external customers. To test the difference between service quality expectation and perceived service quality delivered, a paired sample t-test was used to determine if there was any significant difference between expectations and perceptions. In all the five dimensions at the 99% (0.01) confidence level, there was a significant difference between what external customers expected from the University of Cape Coast and their perceptions of the services offered at University. Table 31 shows the overall customers' results of mean differences in expectations and perceptions. The arithmetic mean differences, the standard deviation, as well as standard error mean of the expected and perceived service were computed with SPSS version 21 software. It is evident from the results that the mean differences for the service quality range from -10.18 to -2.81 on the five dimensions (see column 2 of Table 31).

Table 31: Paired Samples t-test of All External Customers

Dimension	Paired Differences						
	Mean	Std. Dev.	Std. Error Mean	99% Confidence Interval of the Difference		t	Sig. (2-tailed)
				Lower	Upper		
PA- EA	-2.81	4.035	0.212	-3.356	-2.256	-13.21	0.00
PB-EB	-10.18	8.573	0.451	-11.343	-9.006	-22.55	0.00
PC-EC	-4.95	4.810	0.253	-5.608	-4.297	-19.57	0.00
PD-ED	-4.76	5.644	0.297	-5.531	-3.993	-16.03	0.00
PE-EE	-4.33	5.837	0.307	-5.122	-3.531	-14.09	0.00

Note; degree of freedom (df)=360; P= perception E= Expectation

The t-test results with the significance values (p-values = 0.00) for the service quality dimensions among the three selected external customers are statistically significant. The study can vividly conclude that there is a gap between customers' expectations and perceptions of the service quality dimensions used in measuring the University of Cape Coast service performance.

Service Gaps Analysis and Effect Size

The Gap5 out of the seven service quality gaps models professed by Parasuraman et al., (1985), which is the discrepancy between customer expectations and their perceptions of the service delivered, was considered in the study. It is known as the customer gap definition which is related to the external customers (final consumers) and as such was considered to be the true measure of service quality in this study from the final consumers' perspective. The procedure for the computation has been analytically framed showing the true picture of the service Gap as shown in figure 13.

The framework depicts the level of gaps that exists between customers' expectations and perceptions among the selected external customers of the University in the content of service quality.

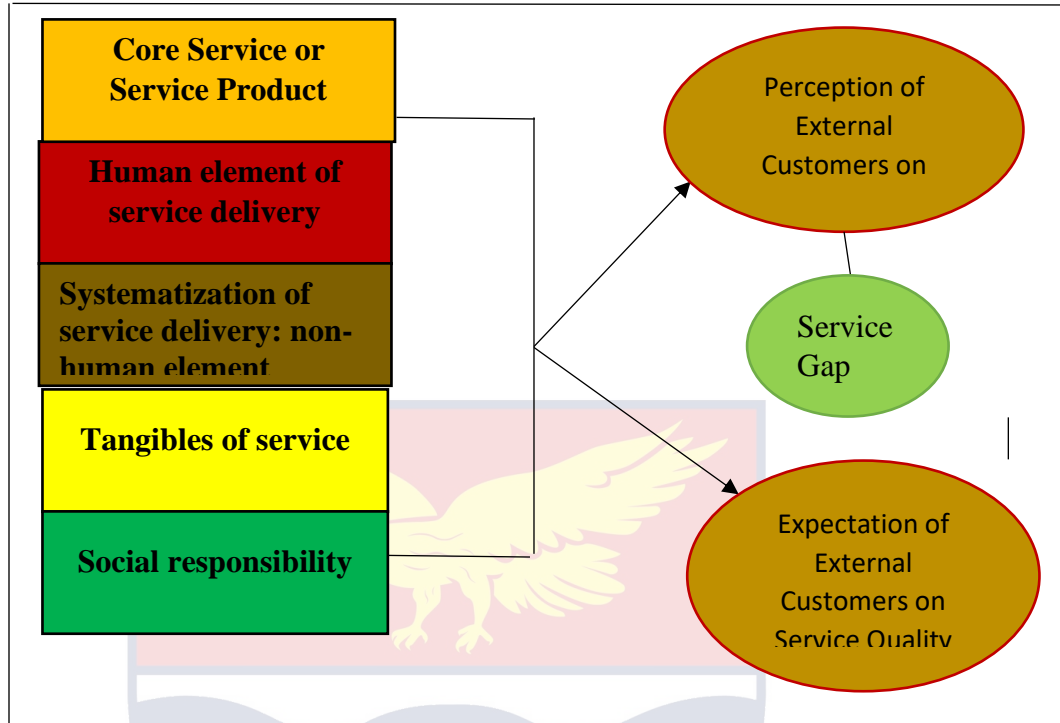


Figure 13: Analytical Framework for Service Gaps (Fieldwork, 2017)

Service quality Gap (G) is obtained by subtracting Expectation (E) scores from the Perception (P) score for each item ($G=P-E$). Three possible results are likely to happen. First is, either perception (P) exceeding expectation (E), thus ($P > E$), which means service quality is very satisfactory to the customer; if perception (P) equals expectation (E), thus ($P=E$), then service quality is satisfactory and finally, when perception (P) is less than expectation (E), ($P < E$), the service quality is poor or unsatisfactory to the customers.

External customers' view on service performance was based on essentially five service quality dimensions namely: core service or service product; the human element of service delivery; systematization of service delivery: non-human element; tangibles of service (servicescapes) and social responsibility. Berry, Zeithaml, and Parasuraman, (as cited in Parasuraman et. al., 1985) iterated

that, service quality is the conformance to customer (consumer) specification which is counts by the customer, not management.

They suggested that service quality is determined by comparison of perception with expectation. Since the institutional customers have diverse views, and hypotheses tested also established the facts, the service gap analysis is necessary to be done on individual sub-group basis. Nevertheless, it is also necessary to look at overall views of selected external customers together at each service quality dimension. The service gaps as portrayed by all the external customers together, with the means score differences per each dimension indicated in the fourth column in Table 32. The overall external customers' gap scores of the five service quality dimensions are having negative signs against the mean difference. It is worth noting that the negative signs attached to the values are an indication of a significant shortfall in meeting customers' expectations across all service dimensions. The highest gap score was the "Human element of service delivery (1.33), followed by the Systematization of service delivery: non-human element (1.27).

Table 32: Service Quality Gap Scores for External Customers

Service Quality Dimension	E-Mean	P-Mean	P-E	Effect size
Overall External Customers				
Core Service or Service Product	4.24	3.30	-0.93	0.70
Human element of service delivery	4.36	3.03	-1.33	1.19
Systematization of service delivery	4.36	3.08	-1.27	1.03
Tangibles of service	4.18	3.11	-1.07	0.84
Social responsibility	4.14	3.04	-1.10	0.74
Students				
Core Service or Service Product	4.17	3.46	-0.71	0.68
Human element of service delivery	4.33	3.13	-1.20	1.24
Systematization of service delivery	4.34	3.17	-1.17	1.10
Tangibles of service	4.12	3.24	-0.88	0.88
Social responsibility	4.05	3.19	-0.86	0.79

	Alumni			
Core Service or Service Product	4.14	3.12	-1.02	0.86
Human element of service delivery	4.23	3.38	-0.85	1.14
Systematization of service delivery	4.14	3.18	-0.95	0.83
Tangibles of service	4.01	3.15	-0.86	0.86
Social responsibility	4.14	3.12	-1.02	0.65
	Employer			
Core Service or Service Product	4.77	2.26	-2.51	0.62
Human element of service delivery	4.63	2.32	-2.31	0.93
Systematization of service delivery	4.55	2.24	-2.32	0.86
Tangibles of service	4.54	2.23	-2.31	0.61
Social responsibility	4.77	1.98	-2.79	0.56

E-mean = Expectation Mean; P-mean = Perception Mean; P-E = Gap Score,

The findings depict that, the customers together expecting more from both the Human and Non-human service delivery of the University service and therefore perceived the service delivery as low. In general, the gap differences between the expectation and perception of the Core service were considered to be the lowest (0.93). A p-value can inform the reader whether an effect exists or not, however, the p-value will not reveal the magnitude of the effect. In reporting and interpreting research findings, both the statistical significance (P-value) and substantive significance (effect size) are essential results to be reported. To interpret this effect, the common language effect size has been computed and shown in the last column of Table 32. For instance, the “human element of service delivery” and “non-human service delivery” had the largest effect size of 1.19 and 1.03 respectively for overall customers’ service gap scores. It implies, the magnitude of the effect on these two quality dimensions is large on service delivery of the university.

The finding of the service gaps at the individual external customer sub-group levels are also depicted in the same Table 32. The gap scores from the

students, being the primary external customer group of the University was computed to ascertain their views. It is observed from the results that the students' view is in line with the overall perceptions of the three sub-groups. Students attach more importance to the service delivery aspects of the service dimensions, giving human elements of service delivery (1.20) and non-human elements (1.17) service gaps, which are consistent with the trend of the overall gap scores. Students are of the view that the University has more room to improve on their human and non-human service delivery. In the case of the “core services”, with the expected mean of 4.17, students perceived it (3.46) as the most satisfying service quality dimension with the lowest gap score of (0.71) and the lowest effect size of 0.68, which is rated “mediocre”.

The Alumni customer-group attached importance (expectation) to almost all the quality dimensions. The “core services or service product” and “social responsibility” had the largest service gaps scores with the value of (1.02) each, however, the core services' magnitude of effect (0.86) is larger as compared to social responsibility (0.65) which is mediocre (see Table 32)..

A look at the gap scores for employers, show that their perception fell short of their expectations with vast service gaps as portrayed in all the five quality dimensions. The highest gap score was seen from social responsibility (2.79), followed by the core service or service product (2.51). This may imply that the employers expect the University to improve upon the service dimensions, more especially the social responsibility and core service. However, the magnitudes of effect on the two dimensions with highest service gaps scores

(Social responsibilities = 0.56; Core services = 0.62) were found to be medium, as compared to human (0.93) and non-human (0.86) elements of service delivery which are large.

Discussion of Findings on Research Question Four

The quality of a product or service is a customer's perception to which the product or service meets his or her expectations. It is the outcome of an evaluation process, where the customers compare their expectations with the services they have received (Gronroos, 1984). This section of the study measured the service quality performance primarily from the perspective of how to meet or exceed the external customer's expectations (Parasuraman, Zeithaml, & Berry 1988; Zeithaml, Parasuraman, Berry, & Berry, 1990). In answering the research question four, the service quality was viewed as a measure of how the delivered service level matches consumer's expectations (Kang, Jame & Alexandris, 2002). Thus on aggregate, there is the existence of service gaps between external customers' expectations and their perception of the quality of service delivered to them by the university. A paired sample t-test was used to test for evidence in support of the service gap analysis on quality dimensions. It is also referred to as repeated measure t-test, and could be used when you have data from one group of participants, the external customers. It depicted that the service gaps actually exist. There was evidence of diverse views among the selected external customer subgroups of UCC, the students, employers, and Alumni. The subgroups have varied expectations and perceptions and they were found to vary with respect to each of the service quality dimensions. When responses from the

subgroups were analysed separately, it was found that the service gap was larger in the side of employers on all the five dimensions. This may indicate that employers had greater concerns about the services the University provides to students.

Perhaps, the students considered the human and non-human aspect of quality dimensions to be more relevant to them when they sought for admission into the University, just like the Alumni customer-group who had had the past experience. However, whereas the students were satisfied with the core service after being with the University for some period, the Alumni were not satisfied with the core service and social responsibility of the University. By implication, students usually expect more service delivery, while studying in the University. However, the employers and businesses that need the services of the institutional graduates considered the “core service” or “service product”, as the most important dimension. Their experience depicted a low level of satisfaction for it.

Nonetheless, the quantitative part of the current study found a significant difference between external customers’ expectations of the service that TQM institution should provide and the perception of services being provided at University of Cape Coast (UCC). These findings are not surprising, since UCC like most Universities of the developing world, strives to do their best though their best may not be enough.

A number of researchers have concluded that TQM implementation has effects on the organisation’s performance, both manufacturing and service industries. Others were of different views, whereas they came out to say that,

TQM implementation does not lead to improvements in the organisation's performance. Conflicting research findings have been reported surrounding the applicability of TQM concepts in service industries as started in the manufacturing sector. The relationship between TQM practices and institutional performance for both manufacturing and service industries has also been investigated by many researchers notably among them were (Sallis, 2014; Ahmad et al. 2012; Sadikoglu & Olcay 2014). However, the findings from these studies have been inconsistent. Some of the studies established that a positive relationship exists between TQM practices and service performance, while few indicated the existence of either negative or insignificant relationship between TQM and performance (Bou & Beltran 2005; Gunday, Ulusoy, Kilic, & Alpkan, 2011; Kaynak, 2003; Miyagawa & Yoshida, 2010).

The study literature has revealed that different researchers have used different indicators to measure organisational performance and for that matter, there are no universally accepted define variables (Fening et al., 2008; Zakuan et al., 2010). Nevertheless, this current study used a modified version of the five service quality dimensions identified by Sureshchandar, et al., (2001 and 2002) in order to answer research question four. This section is the third aspect of the three distinct assessments of the total evaluation of TQM implementation, the outcome criteria. It is imperative to examine the outcome criteria in addition to the TQM implementation from the external customers' perspective since they are the consumers of the education services and the university has established or made a deal with them (Bhat, 2017; Chua, 2004).



CHAPTER SEVEN

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

In this final chapter, an overview of the study is presented. This includes restating the main aim and the research questions. This is followed by the key findings, contribution to knowledge, operational recommendations and suggestions for further related research.

Overview of the Study

To understand the origins of Total Quality Management (TQM), it is important to understand the contributions of several quality experts such as Deming, Juran, Feigenbaum, Crosby, and Ishikawa. These researchers laid the foundation for ensuring quality and therefore being regarded as “gurus” in the field of TQM. Although they were having different means of defining TQM, their set of principles in respect of general arguments talked about one and the same thing.

The total evaluation of TQM implementation which the current research focused on constitutes three distinctive assessments. However, it is obvious that, empirically, total evaluation of TOM implementation (practices) in university education presents significant challenges to researchers. The reason is that all that to be done to complete the three different assessments involves very different methods and investigative strategies. Although, systematic data are not available on the proportion of TQM institutions that directly assess customer preferences and satisfaction, nevertheless, TQM institutions could use perception means to obtain customer data. Conducting a total evaluation of TQM implementation at the University of Cape Coast as a case study is timely and fills the research gap. The existing gap is the failure to have a total evaluation of the TQM implementation in education institution operating with TQM approach for a longer period to ensure customers’ satisfaction through continuous improvement.

The Research Purpose and Questions

The purpose of the study was to examine the TQM implementation at the University of Cape Coast. It also explored the effectiveness of the TQM implementation on the satisfaction of the institutional customers. To be more focus on the research, the study was guided by the following research questions:

1. How does institutional management acknowledge the TQM as an approach to the Quality Management system in UCC?
2. What are the implementation barriers of TQM as practised at the University of Cape Coast (UCC)?
3. To what extent do the internal customers perceive the implementation of the principles of TQM?
4. What are the external customers' perceptions of service quality in relation to TQM implementation at UCC?

The specific research questions were identified through literature review on the quality concept and TQM implementation in service industries, more especially in education setting; evaluation studies that have been conducted in Higher Education Institutions (HEIs) of both the developed and developing countries and the researcher's experiences as quality facilitator in the University institution. The three forms of the assessment examined comprised the assessment of TQM principles being practiced in the University from a management perspective, the internal customers perception on the level of TQM implementation (process criteria), and how the external customers experience the outcome of the implementation (outcome criteria).

In order to achieve the aim and find answers to the research questions of this study, a case study approach was adopted. The University of Cape Coast is the first Ghanaian university to establish quality management unit in 2001 that was purposively selected. The study adopted the embedded mixed method design, specifically the concurrent embedded strategy. The reason was that the study qualitatively ascertained the experiences of institutional managers with regard to the TQM principles being practised at UCC and the existing relationship with service quality performance.

Documentary review was done to seek for the best TQM practices being practised in other parts of the world. Both questionnaires and in-depth guide were utilised to collect relevant data to answer the study research questions. The purpose of the in-depth interviews with top and middle management was to examine the TQM philosophy being implemented in the University. An interview guide was developed to assist in soliciting information on the experiences of the top and middle management. Eight themes were developed after the interview messages had been transcribed based on the management awareness and understanding of the quality concept, TQM philosophy and its practices in the University. In all two top management and five middle management comprising the Provost of the Five Colleges were interviewed. The questionnaire investigated the level of TQM implementation and outcome criteria from customers' perspectives. In all, 259 internal and 361 external customers' usable questionnaires were returned for the empirical analysis, giving response rates of approximately 72% and 84%, respectively, and an overall response rate of 78%.

Key Findings

Validity and reliability of the survey instruments

The analysis of the study started from computation of validity and reliability of the instruments. For the consumers of the research to have much confidence in the data elicited, the interview guide was accurate and transcription consistency was checked. The survey instruments for both internal and external customers were tested valid and reliable. The test-statistics Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) values of 0.96 for internal customers' instrument, 0.96, and 0.97 for the external customers' expectation and perception instruments respectively indicated that they are valid and reliable (see detailed results in Appendix C). The implication is that, the items were highly correlated with the factors they intended to measure and since each of the reliability coefficients was more than 0.70 they were considered acceptable and reliable.

Hypotheses tested

In support of the research questions of the study, hypotheses were tested to examine the homogeneity among the institutional customer groups. The hypotheses tested included the Chi-square-test of goodness of fit; Relative important indexes; Paired Samples t-test and Effect size for both internal and external customer groups. All the hypotheses tested indicated statistically significant differences in perceptions among the various internal and external customer sub-groups. With the significance level of 0.01, and the corresponding confidence level of 99%, the conclusion was that the views of internal customer subgroups are not the same on the level of TQM principles being practiced in the

University. The hypothesis also depicted that there is differences among the external customers' expectations and perceptions of the quality dimensions used in measuring the University service performances. The magnitude of effect on the existing service gags ranges from medium to large.

Study research questions

The first research question was *“How does institutional management acknowledge the TQM as an approach to the Quality Management system in UCC?”*. To answer this research question, a comprehensive literature review was done for information on the quality concepts and quality approaches. The literature revealed among others empirical studies on the TQM principles being practised and that of the University of Cape Coast.

The management respondents provided information that proved of having knowledge and understanding of TQM as quality approach in the University Quality Management System (QMS). There are some TQM tenets the respondents mentioned that identify the university as TQM institutions. Notably among them are the quality management policy in place; involvement of its institutional customers like students, the primary customers, and the local communities in the management and stakeholders consultative meetings; conduct of alumni and employer studies (tracer studies); having human resource policies that guide recruitment, staff training, and development, and academic affairs policy for admissions and graduation of students. Other TQM tenets that identify UCC as TQM institution include: a corporate strategic plan that portrays the vision and mission, as well as the key thrust of the university and the establishment of

Directorate for Academic Planning and Quality Assurance (DAPQA) to facilitate and promote the quality management system of the University.

However, the management respondents were unhappy with the TQM operation in the university. It was pointed out that, the University quality management system is not actively propagating full TQM implementation in all units. Some of the conflicting views include the structure, roles and responsibilities of various customer groups in the quality management; the establishment of quality improvement teams as needed groups in managing quality and identification of various institutional customers and their needs.

The second research question was on “*the implementation barriers of TQM in the University of Cape Coast*”. The study literature revealed some barriers that prevented a number of TQM organisations from achieving the full benefits and advantages, due to considerable difficulties faced during the introduction and implementation of TQM for quality improvement.

The management respondents admitted and mentioned some major implementation barriers to TQM at UCC, which display similarities in reference to what the previous studies portrayed. They mentioned lack of education on quality of which the quality management structure, roles and responsibilities of individuals need to know; lack of quality awareness which has generated into misinterpretation and misconstruction of TQM philosophy and procedures; superficial understanding of the processes involved in the application of TQM in education; internal customers (Staff) resistance to change; feeble integration of quality and institutional culture; non-availability of enough resources to work

with; lack of effective communication among the units of the university; poor records keeping and information management; unenthusiastic and poor supervision of assigned tasks to subordinates; lack of commitment from middle and frontline management for implementation of policies and above all the non-existence of Quality Improvement Teams (QITs).

The third research question was *“To what extent do the internal customers perceive the implementation of the principles of TQM.”* The study literature revealed that there are many TQM principles developed and used in various studies for successful implementation of TQM in different organisations. The 11 TQM principles used in this study were found among the most extracted ones across many studies on TQM especially in the higher education context.

The findings were that, the Lecturers, being directly in-charge of the teaching and learning enterprise, see the level of implementation of all the eleven TQM principles as low. The administrators (senior members) who work directly under top and middle management of the University perceived the level of implementation of most TQM principles to be high and moderate. Nonetheless, both Senior and Junior Staff were of the view that the level of implementation is neither low nor high (moderate).

The fourth research question was *“the external customers’ perceptions of service quality in relation to TQM implementation at UCC”*. The research question was finding out about the perception the external customers had concerning the implementation of TQM in UCC. All the three subgroups were of the view that, they could not see the full benefit from the TQM implementation at

UCC. Their responses depicted shortfalls where their perceptions fell below their expectations for all the five quality dimensions used in measuring the service quality performance. They perceived the human and non-human elements of service delivery and social responsibility as the dimensions having more shortfalls

In spite of the existence of service gaps, the relevance and satisfaction levels of the quality dimensions were ranked differently by the customer subgroups. Students and Alumni groups see human and non-human elements of service delivery as most important dimensions, but through the experience gained after receiving the services from the university, both subgroups were mostly satisfied with the provision of core services or service products. The employer subgroup on the other hand, perceived the core service or service products as the most important (expected) dimension, while they were satisfied with the human elements of service delivery from the experience with the university.

Conclusions

Based on the literature reviewed, and findings from the current study through the interviews and administration of questionnaires, the following conclusions have been drawn in terms of the stated research questions.

Research Question One:

The management admitted that TQM has proved to be a vital ingredient for quality service delivery in education institutions, and now has its permanent roots in the mission and vision of the University education. The University quality management system are in operation for longer time, but the stakeholders

knowledge and understanding and the implementation of TQM principles is superficial. In quality management system, the structure, roles, and responsibilities of individuals have not been spell out clearly. It is generally accepted that the success of TQM operations mostly depends on its implementation strategies being adopted. Nonetheless, the strategies also rest on the Institutional top and middle management awareness of the TQM philosophy..

Research Question Two:

The study has exposed considerable barriers and difficulties that the University is facing in its quality management system, through the implementation of the TQM approach. Being familiar with, and understanding the barriers that could hinder the success of TQM initiatives is essential for the survival of TQM implementation. The hindrance factors identified include lack of education on quality concept and TQM philosophy, employee's resistance to change; little enforcement from quality directorate and lack of continuous improvement teams.

Research question three:

This study has assessed the level of TQM implementation in University of Cape Coast. According to the administrators (senior members non-teaching) respondents, the level of implementation is moderate and high. The Lecturers in teaching and learning consider them as lowly implemented, while both the senior and junior staff respondent see the level to be neither low nor high. This is in line with the conflicting views of the management respondents that, quality management structure, roles, and responsibilities of individuals are unknown in the operation system. In the educational setting, one customer group might consider a certain

dimension highly acceptable, while others might differ due to the diverse nature of their needs and wants.

Research question four:

The external customers of the University are final consumers of the education service being provided, hence their perception could surely determine the service quality. The customer subgroups expectations are diverse nature and their perception on the service quality is well-informed contribution in quality management. The gap analysis shows that the human and non-human elements of service delivery and core services are the dimensions having more gaps between customers' expectations and perceptions of service quality as indicated by the three subgroups. Once this research provides some perspectives on the field of service quality, it is believed that there are a number of things that should be done to confirm the demonstrated methodologies as well as to expand the use of these five quality dimensions in designing any improvement of quality services.

The current research is of the view that the principles of the five quality experts mentioned earlier serve as guidelines for TQM implementation and to meet or exceed customers' expectations within the University through continuous improvement within an institution. What is of greatest importance is the relationship and collaboration between the prescriptions of the quality experts and the underlying TQM principles. Once this research provides some perspectives on the field of service quality, it is believed that there are a number of things that should be done to confirm the demonstrated methodologies as well as to expand

the use of these five quality dimensions in designing and improving quality services.

Contributions to Knowledge

This study has made significant contributions to the body of knowledge in literature on evaluation of TQM implementation in education sector. By developing research instruments tested to be valid and reliable to determine the management awareness and perceptions of the two major customer groups, internal and external customers.

The study also, possibly will either uncover new facts or principles, suggest relationships that were previously unrecognised, challenge existing truths or assumptions, afford new insights into shallow phenomena or suggest new interpretations of known facts that can amend human perception around the world (Phillips & Pugh, 2010).

Quality in Higher Education Institutions in general and in particular the Universities seems to be devoid of empirical studies that address the practices and impact aspects of TQM principles from all major stakeholders perspectives. The study could inform management and other stakeholders of the case study university institution and other sister universities to have a better understanding of how TQM could be effectively approached and implemented. Another contribution is the practical implications of the study which might be helpful to University institutions intend to practice TQM. The identified barriers to TQM implementation which are discouraging many education institutions to integrate quality management system into their corporate strategic plans. The study offers a holistic study that will

help researchers and practitioners to better understand the complexities of TQM in the education context

Recommendations for Policy Makers and other Stakeholders

Based on the findings, the following are recommendations for institutional management and other stakeholders in order to have full benefits from the operationalisation of the quality management system in the University:

1. The Directorate of Academic Planning and Quality Assurance (DAPQA) of the University of Cape Coast needs to create awareness to stimulate the commitment of institutional management about TQM. Both the top and middle management of the university need to be fully acquainted with the quality concept and the TQM philosophy being practiced through awareness and commitment. It should include the awareness of the following: the need for TQM in education; successful TQM stories in an educational context; the benefits of TQM; and commitment for introducing, directing and supporting the TQM implementation.
2. The University Management, DAPQA, and Training and Development section (T&D) of the Directorate of Human Resource should develop a strategy for operating TQM by paying more attention to the identification, analysis, and adoption of an appropriate institutional culture that suits TQM implementation. The university should take into account that, the successful implementation of TQM requires an institutional quality culture to be integrated into the quality management systems. Development of Institutional Quality Manual is appropriate.

3. It is imperative for the university management to establish the three groups or teams needed when operating Total Quality Management as specified in study literature. The groups should be composed of the controller group, the quality facilitator group, and quality improvement teams. The controller group is the top authority, responsible for setting up and monitoring policies and procedures of the facilitators and quality improvement teams. The facilitators should be the quality managers and officers to spearhead the quality management system, while the Quality improvement teams is necessary as at when needed to follow-up monitor the successful implementation of the TQM.
4. Employee's empowerment is an important issue in TQM implementation and the University management should pay more attention to how to satisfy those internal customers (the employees) and increase their empowerment
5. Comprehensive, continuous education and training should be a must if the TQM implementation is to succeed. The DAPQA in collaboration with Training and Development section in the university should offer training on quality concept. The training offered should include TQM awareness; structure, role and responsibilities of quality management; problem-based solving and special job skills training for quality facilitators and other stakeholders, the Provost, Deans, Directors, Heads of Department and Sections, as well as supporting staff of the university.
6. Due to the accessible (wide access), the university management should fully support the idea of having an effective institution-wide quality management

(the TQM approach). The establishment of quality assurance desks and committees at the Departments, Faculties/Schools, Colleges, and Administrative and Support Units should be in force. Management should have the responsibility to address the service quality gaps identified by the institutional customers.

7. The Provost, Deans of Faculties/Schools and Heads of Department should regularly get in touch with their customers and familiarize themselves with their needs. Specifically, through consultative meetings with the students and local communities, in touch with the alumni and employers through tracer studies, and establishment of links with businesses through internship system.
8. The Top management, DAPQA in collaboration with the Departmental Quality Assurance Officers should put mechanism to monitor the Poor and ineffective supervision of work at various units addition to academic departments. The middle and frontline management of the university should be given some flexibility and authority to interpret and apply policies in a manner that would be meaningful and productive in their particular contexts to eliminate staff resistance to change and family related issues that compromise quality.

Suggestions for Further Research

This study, nevertheless, has its limitations which suggest some directions for possible extensions in the future.

First, the study was based solely on data from one public University in Ghana. It is therefore recommended that other researchers interested in the area extend it to other universities in countries with a similar culture in order to conduct a

comparative analysis and facilitate the development of a deeper understanding of the quality management system in education.

Secondly, using a wider and a larger sample of participants than the 804 represented in the current study sample is necessary in order to confirm the generalisability of the findings to a larger population of internal and external customers in both public and private university institutions. Further empirical studies using larger sample sizes and greater geographical diversity may be helpful to validate the findings of this study.

The instruments used for the current study could be adopted by the University management to elicit the institutional customers' views in order to incorporate their views in decision-making on education service quality delivery.

The list of factors identified by this research could be used by researchers interested in investigating the implementation of the TQM approach in other sectors. Again, looking at the present scope of the study, it is suggested that the same research could be carried out in other tertiary institutions in Ghana which are TQM-oriented for certain period of time by using the same or adapted instrument. Future studies could use this instrument to examine the TQM's impact on employees' perception, more specifically, whether it is associated with employees' job satisfaction, as well as external customers' perception to inform decision making in both the public and private Universities.

The second cycle institutions are considered as suppliers of students to the University education sector. It is therefore recommended that such studies are conducted in secondary schools. When there is improvement of quality in this sector,

it will have positive impact on the enhancement of quality in the universities that enroll them.

Specification and measurement of the TQM principles of quality management allow managers to obtain a better understanding of quality management practices and allow researchers to proceed with the task of developing and testing theories of quality management, as well as to examine certain hypotheses concerning quality management.



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APPENDICES

APPENDIX A: Detailed Computation of the Mean Scores by item for each of the 11 TQM principles assessed

Top-management Commitment and Leadership									
Item No.	Item Sym.	Admin. (13)		Lecturer (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
1	TM1.	3.85	High	2.60	Low	3.21	Mod	2.72	Mod
2	TM2.	3.38	Mod	2.54	Low	3.23	Mod	2.74	Mod
3	TM3.	3.85	High	2.56	Low	3.19	Mod	2.74	Mod
4	TM4.	3.31	Mod	2.37	Low	2.85	Mod	2.72	Mod
<p>TM1 = Extent to which top-management commitment to the TQM programme and pursues long-term quality objectives</p> <p>TM2 = Tendency of the top management to view employees (internal customers) as valuable and long-term resources.</p> <p>TM3 = Extent to which top-management discusses and reviews quality related issues on TQM in their management meetings</p> <p>TM4 = Extent to which top-management is actively involved and supports the quality improvement process</p>									
Human Resource Management									
Item No.	Item Sym.	Admin. (13)		Lecturer (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
5	HR1	3.62	High	2.58	Low	3.04	Mod	2.91	Mod
6	HR2	3.31	Mod	2.52	Low	3.03	Mod	2.91	Mod
7	HR3	3.85	High	2.58	Low	3.31	Mod	2.83	Mod
8	HR4	3.00	Mod	2.37	Low	3.04	Mod	2.78	Mod
9	HR5	3.15	Mod	2.48	Low	3.00	Mod	2.66	Mod
10	HR6	3.15	Mod	2.46	Low	2.65	Mod	2.50	Low
11	HR7	3.15	Mod	2.46	Low	2.76	Mod	2.78	Mod
<p>HR1 = The selection and recruitment process in terms of objectivity and right person for the right job.</p> <p>HR2 = Use of work values and ethics as criteria for employee selection.</p> <p>HR3 = Effectiveness of the university to link education and training of staff to its long term plans and strategies</p> <p>HR4 = Training of staff in team-building and group dynamics.</p> <p>HR5 = Extent to which the staff are empowered to operate independence to achieve results.</p> <p>HR6 = Extent to which staff are encouraged to voice their opinions, criticisms and feedback on institutional performance</p> <p>HR7 = Evaluation of the effectiveness, extent and type of involvement of employees in TQM programmes</p>									

Design Quality and Process Management									
Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
12.	TS1.	3.38	Mod	2.60	Low	2.98	Mod	2.72	Mod
13.	TS2.	3.15	Mod	2.48	Low	2.89	Mod	2.69	Mod
14	TS3.	3.46	High	2.33	Low	2.96	Mod	2.73	Mod
15	TS4	3.23	Mod	2.42	Low	2.87	Mod	2.72	Mod
16.	TS5.	3.31	Mod	2.44	Low	2.92	Mod	2.66	Mod
<p>TS1 = Effectiveness of institutional quality management teams for problem-solving</p> <p>TS2 = Integration of customer feedback in the design of operational procedures and processes.</p> <p>TS3 = Extent to which the university co-ordinates activities among different Departments/Sections during the service development processes</p> <p>TS4 = Extent to which the service delivery processes are standardised and simplified without hassling anyone</p> <p>TS5 = Emphasis on developing procedures for reducing the overall service delivery man/hours.</p>									
Management Information and Communication System									
Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
17	MI1.	3.38	Mod	2.56	Low	3.06	Mod	2.68	Mod
18	MI2.	3.08	Mod	2.29	Low	2.94	Mod	2.64	Mod
19	MI3.	3.77	High	2.40	Low	3.20	Mod	2.74	Mod
20	MI4.	3.08	Mod	2.40	Low	3.03	Mod	2.77	Mod
21	MI5	3.08	Mod	2.21	Low	2.92	Mod	2.70	Mod
22	MI6.	3.38	Mod	2.27	Low	2.90	Mod	2.69	Mod
<p>MI1 = Extent to which the internal customers communicate with the management on matters relating to customer service.</p> <p>MI2 = Extent of the periodic communication of the effectiveness of TQM processes to staff at all levels</p> <p>MI3 = Effectiveness of the overall communication process in the university</p> <p>MI4 = Degree to which Departmental meetings are conducted at regular intervals to plan, implement and monitor the effectiveness of quality improvement programmes.</p> <p>MI5 = Effective use of the data related to customer service for improving the quality level in the university</p> <p>MI6 = Use of measures for proactive prevention rather than reactive correction</p>									
Systems Quality Culture									

Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
23	SQ1.	2.92	Mod	2.22	Low	3.10	Mod	2.60	Mod
24	SQ2.	3.31	Mod	2.35	Low	3.08	Mod	2.69	Mod
25	SQ3.	3.00	Mod	2.60	Low	3.27	Mod	2.68	Mod
26	SQ4.	3.23	Mod	2.48	Low	3.20	Mod	2.70	Mod
27	SQ5.	3.23	Mod	2.29	Low	3.11	Mod	2.66	Mod
28	SQ6.	3.23	Mod	2.19	Low	2.99	Mod	2.73	Mod
29	SQ7.	3.08	Mod	2.21	Low	2.95	Mod	2.76	Mod
<p>SQ1 = Extent to which, the staff at all levels realise that the real purpose of their existence is 'service to customers'.</p> <p>SQ2 = Degree to which the staff believe that TQM plays a vital role in strengthening the university's ability to compete in a highly competitive institutions.</p> <p>SQ3 = Resistance of the staff to change.</p> <p>SQ4. Trust, openness and good relationships among the staff.</p> <p>SQ5 = Extent to which 'team spirit' dominates individualistic preferences and projections</p> <p>SQ6 = . Extent to which the institutional structure facilitates fast decision-making and enables quick response to customers' requirements</p> <p>SQ7 = Extent to which the university is known by majority as an institution with minimum hierarchy and bureaucracy</p>									
Tangibles of Service (Servicescapes)									
Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
30	SC1.	3.46	High	2.38	Low	3.24	Mod	2.80	Mod
31	SC2.	3.54	High	2.37	Low	3.26	Mod	3.03	Mod
32	SC3.	3.46	High	2.27	Low	3.06	Mod	2.76	Mod
33	SC4.	3.38	Mod	2.29	Low	2.99	Mod	2.74	Mod
34	SC5.	3.77	High	2.62	Low	3.30	Mod	2.68	Mod
<p>SC1 = Extent to which the university ensures that there is positive impact of the prevailing physical environment on her customers</p> <p>SC2 = Degree to which signs, symbols, advertisement boards, pamphlets and other artifacts in the institution are appealing to the customers.</p> <p>SC3 = Degree to which the physical layout of infrastructure facilities and other furnishings are comfortable for the staff to work in.</p> <p>SC4 = Extent to which the physical layout of equipment and other furnishings are comfortable for the customers to interact with the staff</p> <p>SC5 = Extent to which the way staff are dressed have a pleasing and neat appearance</p>									
Social Responsibility									

Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
35	SR1	3.62	High	2.56	Low	3.25	Mod	2.68	Mod
36	SR2	3.23	Mod	2.42	Low	3.08	Mod	2.70	Mod
37	SR3.	3.15	Mod	2.31	Low	2.96	Mod	2.68	Mod
38	SR4	3.38	Mod	2.46	Low	3.13	Mod	2.60	Mod
39	SR5.	3.54	High	2.50	Low	3.24	Mod	2.61	Mod
40	SR6.	3.54	High	2.35	Low	3.15	Mod	2.70	Mod
<p>SR1 = Extent to which the university deliver its core mandate and the level to which it promotes ethical conduct in everything it does.</p> <p>SR2 = Service transcendence' going beyond what institutional customers are expecting by giving more than what they expect</p> <p>SR3. Giving equal treatment to all the customers, stemming from the belief that everyone, big or small, should be treated alike.</p> <p>SR4 = Providing good service at an affordable fees, but not at the expense of quality, to diverse customers</p> <p>SR5 = Having access for all categories of potential learners in most places convenient to all sections of the society.</p> <p>SR6 = Having a sense of social responsibility characterized by outreach programmes educating economically and socially needy ones</p>									
Benchmarking									
Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
41	BM1.	3.38	Mod	2.50	Low	3.08	Mod	2.78	Mod
42	BM2.	3.54	High	2.33	Low	3.08	Mod	2.83	Mod
43	BM3.	3.38	Mod	2.15	Low	3.05	Mod	2.70	Mod
44	BM4.	3.38	Mod	2.21	Low	3.04	Mod	2.64	Mod
45	BM5.	3.31	Mod	2.46	Low	3.14	Mod	2.66	Mod
<p>BM1 = Emphasis on benchmarking the services and processes with respect to those of other universities</p> <p>BM2 = Emphasis on benchmarking the training programmes with those of other universities.</p> <p>BM3 = Emphasis on benchmarking the level of customer focus with those of other universities</p> <p>BM4 = Emphasis on benchmarking the effectiveness of Human Resource Management (HRM) with those of other universities.</p> <p>BM5 = Emphasis on benchmarking the level of commitment of the University for the Society as a whole with those of other universities</p>									
Customer Focus									

Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
46	CF1.	3.46	High	2.42	Low	3.07	Mod	2.63	Mod
47	CF2.	3.38	Mod	2.52	Low	3.08	Mod	2.68	Mod
48	CF3.	3.62	High	2.46	Low	3.12	Mod	2.68	Mod
49	CF4.	3.62	High	2.27	Low	3.05	Mod	2.60	Mod
50	CF5.	3.62	High	2.29	Low	3.02	Mod	2.67	Mod
51	CF6.	3.69	High	2.35	Low	3.09	Mod	2.64	Mod
52	CF7.	4.15	High	2.71	Low	3.47	High	2.94	Mod
<p>CF1 = Extent to which customer focus and quality are driving forces behind day-to-day Operations of the University</p> <p>CF2 = Providing services to the customers as per the promised schedule</p> <p>CF3 = Willingness to help customers and the readiness to respond to customers' requests.</p> <p>CF4 = Effective use of customer feedback to improve the service standards.</p> <p>CF5 = Effectiveness of customer-grievance redress procedures and processes</p> <p>CF6 = Giving individual and caring attention as much as possible to the customers by having the customers' best interests at heart.</p> <p>CF7 = Diversity and range of services (having a wider range of educational services from the university (e.g. regular, sandwich and distance learning).</p>									
Internal Customer (Staff) Satisfaction									
Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	Level	Mean	Level	Mean	Level	Mean	Level
53	IC1.	3.46	High	2.25	Low	2.99	Mod	2.67	Mod
54	IC2.	3.38	Mod	2.25	Low	2.99	Mod	2.69	Mod
55	IC3.	3.31	Mod	2.04	Low	2.92	Mod	2.70	Mod
56	IC4.	3.31	Mod	2.19	Low	2.88	Mod	2.72	Mod
57	IC5.	3.15	Mod	2.23	Low	3.07	Mod	3.00	Mod
<p>IC1 = Degree to which the management actively devises strategies to improve staff satisfaction</p> <p>IC2 = Effectiveness of staff (internal customers) grievance redress.</p> <p>IC3 = Providing performance-oriented group incentives (motivation).</p> <p>IC4 = Effectiveness of the appraisal system in giving each appraise an idea of what is expected of him/her in the future.</p> <p>IC5 = Design of career paths for staff, (staff progress) with opportunities and limitations clearly specified</p>									
Continuous Improvement and Innovation									

Item No.	Item Sym.	Admin. (13)		Lecturers (52)		Senior Staff (106)		Junior Staff (88)	
		Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
58	CII1.	3.62	High	2.42	Low	3.29	Mod	2.81	Mod
59	CII2.	3.77	High	2.29	Low	3.33	Mod	2.82	Mod
60	CII3.	3.69	High	2.12	Low	3.42	High	2.75	Mod

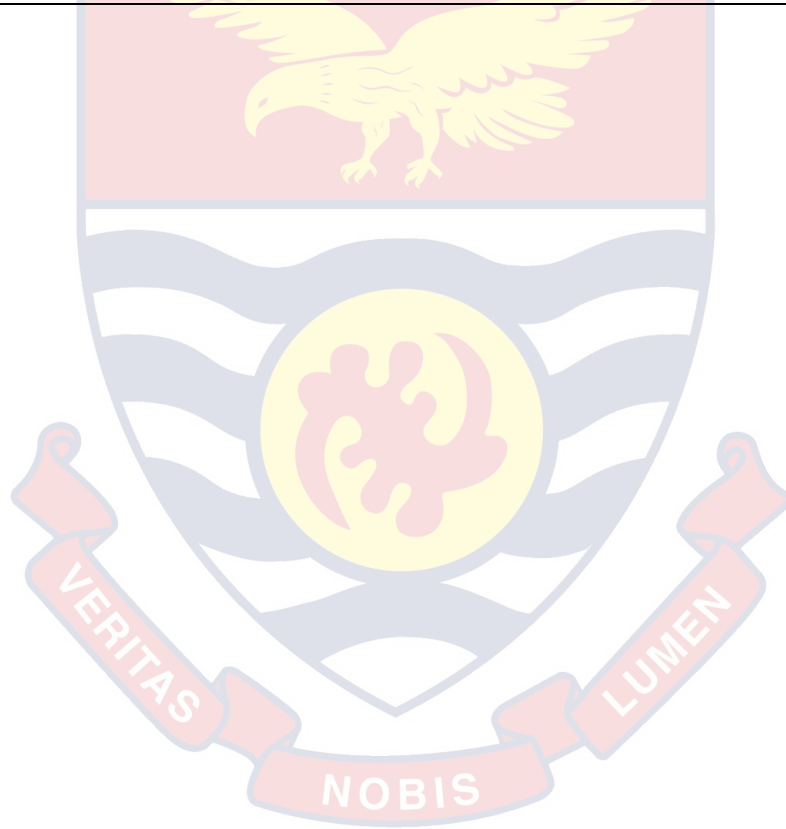
Perceived Continuous Improvement and Innovation

CII1 = Extent to which the university believes that 'continuous improvement' results in a competitive advantage

CII2 = Emphasis of continuous improvement in all functional units and at all levels.

CII3 = Extent to which the drive for quality processes and improvement dominate the need for obtaining excellence grades for graduates.

Note: level = level of implementation; Mod=Moderate; Item sym.= Item symbol



APPENDIX B: Detailed Computation of the Mean Scores for each of the five Service Quality Dimensions

Mean Scores on the Core services or service products (A)						
Core services or service products (A)	Employers (45)		Students (268)		Alumni (48)	
Item	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean
1.	4.69	2.20	4.34	3.55	4.33	3.46
2.	4.73	2.18	4.18	3.44	4.15	3.29
3.	4.82	2.22	4.12	3.50	4	3.46
4.	4.82	2.42	4.03	3.35	3.98	3.31
Grand Mean	4.77	2.26	4.17	3.46	4.12	3.38
Level of Importance/ Satisfaction	<i>H/Imp</i>	<i>Unsatis</i>	<i>Impor.</i>	<i>Good</i>	<i>Impor.</i>	<i>Satis.</i>
1. The university should be an institution having a wider range of education services (e.g. tuition, advice, counselling, outreach)						
2. University with diversity and range of services should have more options in every service.						
3. The university should be an institution that provides information through all media service facility.						
4. Should be a university that must have the most service operations in all units.						
Human element of service delivery (B)						
Human element of service delivery (B)	Employers (45)		Students (268)		Alumni (48)	
Item	Exp. Mean	Pecp. Mean	Exp. Mean	Item	Exp. Mean	Pecp. Mean
1.	4.64	2.40	4.37	3.08	4.13	3.13
2.	4.69	2.22	4.56	3.39	4.42	3.35
3.	4.73	2.24	4.53	3.13	4.33	3.23
4.	4.51	2.20	4.46	3.09	4.23	3.02
5.	4.56	2.18	4.19	3.09	4.06	3.15
6.	4.64	2.44	4.16	3.21	4.23	3.15
7.	4.60	2.47	4.22	3	4.04	3.1
8.	4.71	2.20	4.18	3.08	4.23	3.08
Grand Mean	4.64	2.29	4.33	3.13	4.21	3.15
Level of Importance/ Satisfaction	<i>H/Imp</i>	<i>Unsatis</i>	<i>H/Imp</i>	<i>Satis.</i>	<i>H/Imp</i>	<i>Satis.</i>
Mean Scores on the Human element of service delivery						

<ol style="list-style-type: none"> 1. The university should provide services at the time it promises to do so. 2. The entire university should keep records accurately. 3. The university should have staff who are willing and ready to help their customers. 4. The university that listen to the voices of customers to improve service standards. 5. The staff of the university should be consistently pleasing, humble and courteous. 6. The university should get adequate support from all functional units to provide quality service. 7. The university should have an effective procedures and processes for customersgrievance 8. The university staff should be expected to give customers care and individual attention. 						
Mean Scores on the Systematization of service delivery (C)						
Systematization of service delivery: non-human element (C)	Employers (45)		Students (268)		Alumni (48)	
Item	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean
1.	4.36	2.29	4.13	3.13	4.08	3.29
2.	4.6	2.16	4.37	3.19	4.31	3.42
3.	4.69	2.18	4.44	3.21	4.21	3.33
4.	4.56	2.31	4.42	3.16	4.33	3.48
Grand Mean	4.55	2.24	4.34	3.17	4.23	3.38
Level of Importance/ Satisfaction	<i>H/Imp</i>	<i>Unsatis</i>	<i>H/Imp</i>	<i>Satis.</i>	<i>H/Imp</i>	<i>Satis.</i>
1. A university to have structured services delivery process without any hassles.						
2. University with enhancement of technological capability to serve customers more effectively.						
3. The university to have adequate and necessary skilful staff to deliver quality service to customers.						
4. University to have adequate and necessary facilities for good customer service.						
<i>Note: H/Imp= highly important; Impor= important; Unsatis=Unsatisfactory; Satis=Satisfactory</i>						
Mean Scores on the Tangibles of service (D)						

angibles of service (Servicescapes) (D)	Employers (45)		Students (268)		Alumni (48)	
Item	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean
1.	4.53	2.51	4.45	3.07	4.40	3.04
2.	4.47	2.29	4.17	3.15	4.27	2.98
3.	4.56	2.31	3.9	3.44	4.10	3.35
4.	4.62	2.24	4.05	3.31	4.15	3.27
5.	4.51	2.07	4.04	3.24	4.02	3.12
Grand Mean	4.54	2.28	4.12	3.24	4.19	3.15
Level of Importance/ Satisfaction	<i>H/Imp</i>	<i>Unsatis</i>	<i>Impor.</i>	<i>Satis.</i>	<i>Impor.</i>	<i>Satis.</i>
1. The university should have up-to-date equipment.						
2. The ambient conditions of university's premises and campuses should be careful noted (temperature, ventilation, noise and odour)						
3. The university internal customers should be well dressed, neat and professional appearance						
4. The appearance of the physical facilities of the university should be in keeping with the type of services provided.						
5. The university physical facilities should be visually appealing materials and facilities associated with the service.						
Mean Scores statistics on the Social responsibility (E)						
Social responsibility (E)	Employers (45)		Students (268)		Alumni (48)	
Item	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean	Exp. Mean	Pecp. Mean
1.	4.51	2.11	4.35	3.31	4.33	3.25
2.	4.64	2	3.94	3.09	3.98	3.08
3.	4.8	2.04	4.04	3.24	4.1	3.23
4.	4.8	1.91	4.04	3.16	3.96	3.12
5.	4.82	1.96	3.9	3.15	4.00	3.17
Grand Mean	4.71	2.00	4.05	3.19	4.07	3.17
Level of Importance/ Satisfaction	<i>H/Imp</i>	<i>Unsatis</i>	<i>Impor.</i>	<i>Satis.</i>	<i>Impor.</i>	<i>Satis.</i>
1. The university that gives equal treatment and opportunity to everyone.						
2. A university that focuses on Customer delight making customers realise their unexpressed needs by giving more than what they expect.						
3. A university that provide education service at a reasonable cost, but not at the expense of quality.						
4. An institution having access for all categories of potential applicants in the society.						
5. A university with social responsibility characterized by `outreach serviceto inhabitants of the communities.						
<i>Note: H/Imp= highly important; Impor= important; Unsatis=Unsatisfactory; Satis= Satisfactory</i>						

APPENDIX C: The Test-statistics for Measure of Sampling Adequacy

Internal customers : KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.963
Bartlett's Test of Sphericity	Approx. Chi-Square	11440.401
	df	1770
	Sig.	.000
External customers' Expectation: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.955
Bartlett's Test of Sphericity	Approx. Chi-Square	5607.366
	df	325
	Sig.	.000
External customers' Perception: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.966
Bartlett's Test of Sphericity	Approx. Chi-Square	7151.414
	df	325
	Sig.	.000



APPENDIX D: RESEARCH INSTRUMENTS

Appendix D-1: Interview Guide for Top and Middle level Management (VC, Pro-VC, Registrar and Provost)

<i>University of Cape Coast</i>
<i>College of Education Studies</i>
<i>Institute for Educational Planning and Administration (IEPA)</i>
<i>Ph.D. in Qualitative Research Based</i>
Topic: Total Quality Management Implementation and Service Performance in University of Cape Coast
I would appreciate the opportunity to meet with you briefly and discuss the practice of your specialty, as the Vice chancellor/Pro-VC/Registrar/Provost . I am especially interested in your views regarding quality management system and TQM principles being practiced in UCC. Any further insights you have on service quality would be greatly appreciated.
Interview Guide
1. Interviewer: Please in your view, how will you explain the quality concept ?
2. Interviewer: In adapting quality management, originally developed for manufacturing industries, how relevant is quality being ensured in the service industries like your university?
3. Interviewer: Does it mean we have differences between the quality management in education and manufacturing.
4. Interviewer: Do you have quality management system in this University?
5. Interviewer: As one of the Top-Managers of the university, how do you employ quality management in your administration?
6. Interviewer When you look at quality it normally goes with concept like quality inspection, quality control, quality assurance, quality improvement and TQM; could you briefly talk about each of them?
7. Interviewer: At what point does quality improvement comes in?
8. Interviewer: Who is responsible for improvement, is it the same DAPQA or there must be someone else?
9. Interviewer: Do you seem it relevant to have quality improvement team in your university, even though DAPQA in a way is spearheading institutional quality as you said.
10. Interviewer: You made mention that quality management in education is for human aspect, is there any terms that management takes into consideration when talking about total quality management. I mean the principles in human aspect?
11. Interviewer: From your point of view, does the University have one customer or more than that?
12. Interviewer: Do we have internal customers of the university? If yes who are those?
13. Interviewer: they become part of it, so apart from students being internal who again if any?
14. Interviewer: Administrative and support staff what status are they?

15. Interviewer: how can the University satisfy the internal customers, people like lecturers and other staff?
16. Interviewer: Does the university provide the training to the internal customers?
17. Interviewer: Is there any link between quality that is being practice and service performance of the University?
18. Interviewer: What about quality culture of the people working with in the university?
19. Interviewer: How is management committed to the implementation of Total Quality Management system in University?
20. Interviewer: Do the internal customers of the university need to involve in TQM implementation?
21. Interviewer: Do you seem it necessary to have quality education for internal customers of the university? Is it being done in your outfit?

Appendix D-2: Internal Customer Questionnaire on TQM

Topic: IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT AND SERVICE PERFORMANCE IN UNIVERSITY OF CAPE COAST (UCC)
This questionnaire has been devised to determine the Total Quality Management (TQM) implementation level in University of Cape Coast through the internal customers' perspective. The items corresponding to the 11 selected principles of TQM, with respect to the 60 items are given below on a five-point Likert scale. Please indicate the appropriate rating level with respect to each statement in space provided using the scale below. <i>Extremely low= 1, Low = 2, Moderate = 3, High=4 and Very highly=5</i>
Section A: Background of respondent
Respondent's code (<i>For office use only</i>)
1. Gender: Male [] Female []
2. Employee Status: Senior member (administrator) [] Lecturer [] Senior staff [] Junior staff []
3. Highest level of education completed? None [] JHS/Middle [] SHS/Secondary [] HND/Diploma [] Bachelor [] Masters (MA/MSc/MPhil) [] PhD []
4. Nature of Employment: Full time [] Part-time [] On retirement contract []
5. Your Department/Faculty:
6. For how long have you worked at your current position? (in years). [] []
7. For how long have you worked in this institution (in years). [] []
Section B: General TQM opinions: <i>Total Quality Management (TQM) is a philosophy that says that uniform commitment to <u>quality</u> in all areas of an institution promotes an institutional culture that meets the perceptions of</i>

<i>customers on product or service quality. TQM covers the entire institution, all the staff and all functions, including external customers.</i>					
The items corresponding to the 11 selected dimensions of TQM, with respect to the 60 items are given below on a five-point Likert scale. Please indicate the appropriate rating level with respect to each statement in space provided using the scale below. <i>Extremely low= 1, Low = 2, Moderate = 3, High=4 and Very highly=5</i>					
(1) Top-Management Commitment and Visionary Leadership(TMCVL)	1	2	3	4	5
1. Extent to which top-management commitment to the TQM programme and pursues long-term quality objectives					
2. Tendency of the top management to view employees (internal customers) as valuable and long-term resources.					
3. Extent to which top-management discusses and reviews quality related issues on TQM in their management meetings					
4. Extent to which top-management is actively involved and supports the quality improvement process					
(2). Human Resource Management (HRM)	1	2	3	4	5
1. The selection and recruitment process in terms of objectivity and right person for the right job.					
2. Use of work values and ethics as criteria for employee selection.					
3. Effectiveness of the university to link education and training of staff to its long term plans and strategies.					
4. Training of staff in team-building and group dynamics.					
5. Extent to which the staff are empowered to operate independence to achieve results.					
6. Extent to which staff are encouraged to voice their opinions, criticisms and feedback on institutional performance.					
7. Evaluation of the effectiveness, extent and type of involvement of employees in TQM programmes.					
(3) Design Quality and Process Management (Technical system)(DQPM)	1	2	3	4	5
1.Effectiveness of institutional quality management teams for problem-solving					
2. Integration of customer feedback in the design of operational procedures and processes.					
3. Extent to which the university co-ordinates activities among different Departments/Sections during the service development processes.					
4. Extent to which the service delivery processes are standardised and simplified without hassling anyone.					
5. Emphasis on developing procedures for reducing the overall service delivery man/hours.					
(4) Management Information and Communication System (MICS)	1	2	3	4	5
1. Extent to which the internal customers communicate with the management on matters relating to customer service.					
2. Extent of the periodic communication of the effectiveness of					

TQM processes to staff at all levels.					
3. Effectiveness of the overall communication process in the university					
4. Degree to which Departmental meetings are conducted at regular intervals to plan, implement and monitor the effectiveness of quality improvement programmes.					
5. Effective use of the data related to customer service for improving the quality level in the university.					
6. Use of measures for proactive prevention rather than reactive correction.					
(5) Service Quality Culture (SQC)	1	2	3	4	5
1. Extent to which, the staff at all levels realise that the real purpose of their existence is 'service to customers'.					
2. Degree to which the staff believe that TQM plays a vital role in strengthening the university's ability to compete in a highly competitive institutions.					
3. Resistance of the staff to change.					
4. Trust, openness and good relationships among the staff.					
5. Extent to which 'team spirit' dominates individualistic preferences and projections.					
6. Extent to which the institutional structure facilitates fast decision-making and enables quick response to customers' requirements.					
7. Extent to which the university is known by majority as an institution with minimum hierarchy and bureaucracy.					
(6) Tangibles of service (Servicescapes)(TS)	1	2	3	4	5
1. Extent to which the university ensures that there is positive impact of the prevailing physical environment on her customers.					
2. Degree to which signs, symbols, advertisement boards, pamphlets and other artifacts in the institution are appealing to the customers.					
3. Degree to which the physical layout of infrastructure facilities and other furnishings are comfortable for the staff to work in.					
4. Extent to which the physical layout of equipment and other furnishings are comfortable for the customers to interact with the staff.					
5. Extent to which the staff are dressed have a pleasing and neat appearance.					
(7) Social Responsibility (SR)	1	2	3	4	5
1. Extent to which the university delivers its core mandate and the level to which it promotes ethical conduct in everything it does.					
2. 'Service transcendence' going beyond what institutional customers are expecting by giving more than what they expect.					
3. Giving equal treatment to all the customers, stemming from the belief that everyone, big or small, should be treated alike.					
4. Providing good service at affordable fees, but not at the expense of quality, to diverse customers.					
5. Having access for all categories of potential learners in most					

places convenient to all sections of the society.					
6. Having a sense of social responsibility characterized by outreach programmes educating economically and socially needy ones.					
8. Benchmarking (BM)	1	2	3	4	5
1. Emphasis on benchmarking the services and processes with respect to those of other universities.					
2. Emphasis on benchmarking the training programmes with those of other universities.					
3. Emphasis on benchmarking the level of customer focus with those of other universities.					
4. Emphasis on benchmarking the effectiveness of Human Resource Management (HRM) with those of other universities.					
5. Emphasis on benchmarking the level of commitment of the University for the Society as a whole with those of other universities.					
9. Customer Focus (CF)	1	2	3	4	5
1. Extent to which customer focus and quality are driving forces behind day-to-day Operations of the University					
2. Providing services to the customers as per the promised schedule.					
3. Willingness to help customers and the readiness to respond to customers' requests.					
4. Effective use of customer feedback to improve the service standards.					
5. Effectiveness of customer-grievance redresses procedures and processes.					
6. Giving individual and caring attention as much as possible to the customers by having the customers' best interests at heart.					
7. Diversity and range of services (having a wider range of educational services from the university (e.g. regular, sandwich and distance learning).					
(10) Internal Customer (Staff) Satisfaction (ICS)	1	2	3	4	5
1. Degree to which the management actively devises strategies to improve staff satisfaction.					
2. Effectiveness of staff (internal customers) grievance redress.					
3. Providing performance-oriented group incentives (motivation).					
4. Effectiveness of the appraisal system in giving each appraise an idea of what is expected of him/her in the future.					
5. Design of career paths for staff, (staff progress) with opportunities and limitations clearly specified.					
(11) Continuous Improvement and Innovation (CII)	1	2	3	4	5
1. Extent to which the university believes that 'continuous improvement' results in a competitive advantage.					
2. Emphasis of continuous improvement in all functional units and at all levels.					
3. Extent to which the drive for quality processes and improvement dominate the need for obtaining excellence grades for graduates.					

Section C: Any other information from you that might help the interpretation of your responses given?.....

.....

Appendix D-3: External Customers Questionnaire on Service Performance

<i>University of Cape Coast</i>					
<i>College of Education Studies</i>					
<i>Institute for Educational Planning and Administration (IEPA)</i>					
<i>Ph.D. in Qualitative Research Based</i>					
<i>Topic: Total Quality Management Implementation and Service Performance in University of Cape Coast</i>					
Customer subgroup code: (<i>Researcher use only</i>) Date:					
Section A: measuring expectations of service quality					
Institutional customers expect different levels of service quality from their universities to lead to their satisfaction. As an Alumnus and customer of this university’s services please read the following statements and rate their importance to your organisation, with respect to service quality performance .					
Please consider all of these dimensions when you evaluate each of the aspects contained in the statements. Tick the appropriate number using the five-point Likert scale ratings: highly unimportant = 1, Not important = 2, moderately important= 3, Important = 4 and highly important = 5 . Your answers will be kept confidential and will be used for statistical purposes only.					
<i>(A) Core service or service product</i>	1	2	3	4	5
1. The university should be an institution having a wider range of education services (e.g. tuition, advice, counselling, outreach)					
2. University with diversity and range of services should have more options in every service.					
3. The university should be an institution that provides information through all media service facility.					
4. Should be a university that must have the most service operations in all units.					
<i>(B) Human element of service delivery</i>	1	2	3	4	5
1. The university should provide services at the time it promises to do so.					
2. The entire university should keep records accurately.					
3. The university should have staff who are willing and ready to help their customers.					
4. The university that listen to the voices of customers to improve service standards.					
5. The staff of the university should be consistently pleasing, humble and courteous.					
6. The university should get adequate support from all functional units to provide quality service.					
7. The university should have an effective procedures and processes					

for customers' grievance					
8. The university staff should be expected to give customers care and individual attention.					
<i>(C) Systematization of service delivery: non-human element</i>	1	2	3	4	5
1. A university to have structured services delivery process without any hassles.					
2. University with enhancement of technological capability to serve customers more effectively.					
3. The university to have adequate and necessary skilful staff to deliver quality service to customers.					
4. University to have adequate and necessary facilities for good customer service.					
<i>(D) Tangibles of service (Servicescapes)</i>	1	2	3	4	5
1. The university should have up-to-date equipment.					
2. The ambient conditions of university's premises and campuses should be careful noted (temperature, ventilation, noise and odour)					
3. The university internal customers should be well dressed, neat and professional appearance					
4. The appearance of the physical facilities of the university should be in keeping with the type of services provided.					
5. The university physical facilities should be visually appealing materials and facilities associated with the service.					
<i>(E) Social responsibility</i>	1	2	3	4	5
1. The university that gives equal treatment and opportunity to everyone.					
2. A university that focuses on 'Customer delight' making customers realise their unexpressed needs by giving more than what they expect.					
3. A university that provide education service at a reasonable cost, but not at the expense of quality.					
4. An institution having access for all categories of potential applicants in the society.					
5. A university with social responsibility characterized by 'outreach service' to inhabitants of the communities.					
Section B: Any expectations of you that were not mentioned above? Indicate the most three.					
a)					
b)					
c)					
Section C: measuring perceptions of service quality					
The dimensions of service quality in education considered in this study include the following: <i>Core service or service product; human element of service delivery; Systematization of service delivery (non-human element); Tangibles of service (servicescapes)</i> and <i>Social responsibility</i> .					
Please consider all of these dimensions when you answer the following questions. Tick the appropriate number using the five-point Likert scale below: very unsatisfactory = 1, unsatisfactory = 2, satisfactory = 3, good = 4 and very good = 5 . Your answers will be kept confidential and will be used for statistical purposes only.					

(1) Core service or service product	1	2	3	4	5
1. Diversity and range of services (having a wider range of education services from the university (e.g. tuition, advice, counselling, outreach).					
2. Intensity and depth of service (having more options in every service).					
3. Service innovation (providing information through media service facility).					
4. Availability of most service operations in all units of the university.					
(2) Human element of service delivery	1	2	3	4	5
1. The University is providing services as promised.					
2. A university with systems of keeping accurate records.					
3. Willingness to help customers and the readiness to respond to customers' requests.					
4. University which uses the feedback from customers to improve service standards.					
5. Staff who are consistently pleasing, humble and courteous.					
6. The university involves all staff to provide services right the first time.					
7. Effectiveness of customer grievance procedures and processes.					
8. Giving caring and individual attention to customers by having the customers' best interests at heart.					
(3) Systematisation of service delivery: non-human element	1	2	3	4	5
1. Having a highly standardised and simplified delivery process so that services are delivered without any hassles or excessive bureaucracy.					
2. Enhancement of technological capability (e.g. computerization, networking of operations, etc.) to serve customers more effectively.					
3. Adequate and necessary personnel for good customer service.					
4. Adequate and necessary facilities for good customer service.					
(4) Tangibles of service (servicescapes)	1	2	3	4	5
1. The university having well-equipped and modern facilities to boost of.					
2. The ambient conditions such as temperature, ventilation, noise and odour have been taken care of at the university's premises and campuses.					
3. Employees who have a neat and professional appearance.					
4. Extent of the physical layout of equipment and other furnishings being comfortable for customers to interact with staff.					
5. Visually appealing materials and facilities associated with the service.					
(5) Social responsibility					
1. Equal treatment and opportunity stemming from the belief that everyone, big or small, should be treated alike.					
2. 'Customer delights' making customers realize their unexpressed needs by giving more than what they expect.					
3. Giving good service at a reasonable cost, but not at the expense of quality.					
4. Having establishment locations in most places convenient to all sections of the society.					

5. A social responsibility characterized by 'outreach service' to inhabitants of the communities within the jurisdictions of the university.					
Section D: Any other information from you that might help the interpretation of your perception given?					
a)					
b)					
c)					
Section E: Respondent Background Information					
(1). Alumnus					
1. Gender: Male <input type="checkbox"/> Female <input type="checkbox"/>					
2. Employee Status: Administration <input type="checkbox"/> Technical/Professional <input type="checkbox"/>					
3. The organisation where you work:					
4. Position in your current job?					
5. How many years have you been an Alumnus to the University? []					
6. Indicate the kind of Degree (s) you have Obtained from alumnus University in question? First Degree <input type="checkbox"/> Masters (MA/MSc/MPhil) <input type="checkbox"/> PhD <input type="checkbox"/>					
(2). Student					
8. Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female					
9. Sponsorship Status: () Self-Sponsored () Parent/Guardian					
10. What programme are you per suing? () Humanities () Sciences () Medicine					
11. What is your current level of education (L100 excluded)? () L200 () L300 () L400					
(3) Employer					
12. Name of the organisation:					
13. Year of establishment:					
14. Organisational status? () Public () Private () Quasi-Private					
15. How long have you established/establishing contract with the University (UCC)					
16. ()					
17. How many graduates your organisation has/is engaged/engaging their services for the last five years? ()					

APPENDICES E: ETHICAL CLEARANCE

Appendix E-1: University of Cape Coast- Institutional Review Board (UCC-IRB) Clearance Letter

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 03321-33172/3 / 0207355653/ 0244207814

C/O Directorate of Research, Innovation and Consultancy

E-MAIL: irb@ucc.edu.gh

OUR REF: UCC/IRB/A/2016/91

YOUR REF:

OMB NO: 0990-0279

IORG #: IORG0009096



8TH FEBRUARY, 2017

Mr Albert Justice Kwarteng

Directorate of Academic Planning and Quality Assurance (DAPQA)

University of Cape Coast

Dear Mr Kwarteng,

ETHICAL CLEARANCE –ID :(UCCIRB/CES/2016/05)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol titled **'Implementation of total quality management and service performance of selected public universities.'**

This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'S. Asiedu Owusu'.

Samuel Asiedu Owusu

Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST

APPENDIX E-2: A Letter to Top and Middle management (Protocol letter)

DAPQA, UCC
31st March, 2017
0244517582

REQUEST FOR AN INTERVIEW SESSION

I am currently a registered PhD student with the Institute for Educational Planning and Administration (IEPA), University of Cape Coast (UCC). I wish to humbly request for a short interview session (at most 45 minutes) with you.

The interview is on the “implementation of Total Quality Management (TQM) and service performance in University of Cape Coast (UCC). The topic which is my PhD research area has the aim of examining how TQM is accepted and being practiced in the University.

I would appreciate the opportunity to meet with you briefly and discuss the practice of your speciality, as the **Vice-Chancellor/Pro-VC/Registrar/Provost**. I am especially interested in your views regarding quality management system and TQM principles being practiced in UCC. Any further insights you have on service quality would be greatly appreciated.

University of Cape Coast has been purposely selected for being the first public university in Ghana to set up Quality Assurance Unit (2001) and now a Directorate. Fifteen years in existence, it is imperative to have the total evaluation of TQM practices being practiced in the University.

I am with this application to contact your office to schedule your own convenient time in between 10 -31st May, 2017 for this informational meeting.

This study is being conducted under the supervision of Professor Emmanuel Kofi Gyimah, Department of Education, College of Distance Education, UCC and Dr. Eric Anane, Institute of Education, UCC.

Attached to this letter are copies of introductory letters from IEPA and UCC Institutional Review Board (UCC-IRB).

Yours faithfully,

Albert Justice Kwarteng
(PhD. Student, IEPA, UCC)

APPENDIX F: EARLIER QUALITY EXPERTS PROPOSED PRINCIPLES OF TQM

Appendix F-1: Crosby 14-step programme (Principles) of Quality	
Principles	Explanation
1. Management commitment:	To make it clear where management stands on quality;
2. Quality improvement team:	To run the quality improvement programme;
3. Quality measurement:	To provide a display of current and potential non-conformance problems in a manner that permits objective evaluation and corrective action;
4. Cost of quality:	To define the ingredients of the cost of quality, and explain its use as a management tool;
5. Quality awareness:	To provide a method of raising the personal concern felt by all personnel in the company toward the conformance of the product or service and the quality reputation of the company;
6. Corrective action:	To provide a systematic method of resolving forever the problems that are identified through previous action steps;
7. Zero defects planning:	To investigate the various activities that must be conducted in preparation for formally launching the Zero Defects programme;
8. Supervisor training:	To define the type of training that supervisors need in order to actively carry out their part of the quality improvement programme
9. Zero defects day:	To create an event that will make all employees realize, through personal experience, that there has been a change;
10. Goal setting:	To turn pledges and commitment into actions by encouraging individuals to establish improvement goals for themselves and their groups;
11. Error causal removal:	To give the individual employee a method of communicating to management the situation that makes it difficult for the employee to meet the pledge to improve;
12. Recognition:	To appreciate those who participate;
13. Quality councils:	To bring together the professional quality people for planned communication on a regular basis;
14. Do it over again:	To emphasize that the quality improvement program never ends.
Appendix F-2: Deming proposed 14 principles of TQM	
Principles	Explanation
1. Create constancy of purpose towards improvement of product and service, with the aim of in competition.	It is the responsibility of management to create an environment of stability and continuous improvement of services through a long-term plan, vision, and mission.
2. Adopt the new philosophy:	We can no longer live with commonly accepted levels of delays, mistakes, defective workmanship. The first point could be achieved if the management adopts the new philosophy of change, commitment, and dedication to

	continuous improvement. There is the need to replace the old management procedures which are ineffective in today's business environment with the new method of management.
3. Cease dependence on inspection to achieve quality.	Eliminate the need for inspection on a mass basis by building quality into the product/service in the first place. There should be a mechanism to check the processes and systems rather than waiting until the product or service is done before detecting the non-conformance to the customers wants. Prevention is better than detection as implies.
4. End the practice of awarding business on the basis of the price tag	Instead, minimise total cost and establish a long-term relationship of loyalty and trust with customers. Avoid doing selection based on one particular criterion. An institution with more diversified programmes will survive more than those looking at one.
5 Continuous improvement:	Improve constantly and forever the system of production and service. Deming believes in quality out of obstacles of administration, and focusing on human resources aspect.
6. Institute training and staff development	The need to Institute training for the employees on the job, by the establishment of educational programmes and training of internal customers.
7. Institute leadership:	The aim of supervision should be to help internal customers to do a better job. New management methods required and managers should lead, guide and support staff properly.
8. Drive out fear, so that everyone may work effectively for the organisation.	That will help remove fears from working staff in the case of new eliminate punishment and establish a safe environment that all ideas will be discussed.
9. Remove barriers that rob people pride in workmanship.	Through teamwork, problems associated with the production process could be avoided.
10. Eliminate slogans, exhortations, and targets for the workforces that ask for zero defects and new levels of productivity.	There is the need to go beyond achieving quantitative goals and hammer on quality. Eliminate work standards (quotas) and management by objectives, substitute leadership instead.
11. Remove barriers	Remove barriers that rob people in management and the hourly workers of their right to pride of workmanship.
12. Institute a vigorous programme of education and self-improvement,	To ensure the acquisition of new skills and good execution both for workers, middle and top management. Management is to have a long term commitment to the implementation of all the above-mentioned points.
13. Put everybody in the institution to work	To accomplish the transformation. The transformation is everybody's job and therefore by creating a structure in top management.
14. Management of an institution should	Which allows for the successful implementation and compliance with his previous 13 points? Management is

define an overall quality framework,	required to organise itself as a team to implement the quality management system. (Deming, 1986; Anastasiadou, 2015).
Appendix F-3: Feigenbaum’s tenets (principles) of TQM system	
1. Quality is an institution-wide process.	
2. The customer defines quality.	
3. Effective quality requires both individual and team effort.	
4. Quality is a management philosophy.	
5. Quality and innovations are mutually dependent.	
6. Quality is an ethical standard.	
7. Quality requires continuous improvement.	
8. Quality is the most cost-effective method for improving productivity.	
9. For quality to work properly, it must be implemented as a total system and involving both customers and suppliers.	
Appendix F-4: Juran’s ten steps to quality improvement	
1. Build awareness of the need and opportunity for improvement.	
2. Set goals for improvement.	
3. Organize to reach the goals (establish a quality council, identify problems, select projects, appoint teams, designate facilitators).	
4. Provide training.	
5. Carry out projects to solve problems.	
6. Report progress.	
7. Give recognition.	
8. Communicate results.	
9. Keep score.	
10. Maintain momentum by making annual improvement part of the regular systems and processes of the company.	

