UNIVERSITY OF GHANA, LEGON

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SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

ORGANIZATIONAL FACTORS AFFECTING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SYSTEMS IN ACADEMIC LIBRARIES: A CASE STUDY OF THE UNIVERSITY OF GHANA, BALME LIBRARY.

BY

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DECLARATION

I, hereby, declare that except for references to other works which have been duly acknowledged, this thesis is the result of my own original work under the supervision of Professor Ellis. E. Badu and Dr. Emmanuel Adjei of the Department of Information Studies, University of Ghana, Legon, and that no part of this work has been presented for another degree in this university or elsewhere. I accept responsibility for any shortcoming of this work.

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Date

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Date: …… Date: …….

DEDICATION

In memory of my late uncle, Retired DSP Ernest Kuukure Maayeb and my late course mate and good friend Ben-Isaac Nyamekye. May their souls rest in perfect peace.

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I wish to acknowledge first and foremost the immense support, understanding, cooperation and patience of my supervisors, Prof. E. E. Badu and Dr. E. Adjei who made it possible for me to undertake this study and submit this thesis. My sincere gratitude goes to them for their invaluable guidance, support, patience and encouragement throughout the course of the thesis work and in other spheres of my life.

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Above all, I thank the Almighty God for his sufficient grace and guiding me through the successful completion of this dissertation. Finally, I take full responsibility for all shortcomings, misinterpretation and weakness that may be identified in this work.

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LIST OF ABBREVIATIONS

ICT- Information and Communication Technology

IS- Information Systems

UGLS- University of Ghana Library System

OPAC- Online Public Access Catalogue

UGcat-University of Ghana Catalogue

UGspace-University of Ghana Space

ROI- Return on Investments

ILS- Integrated Library System

PCs- Personal Computers

CVF- Competing Values Framework

OCAI- Organizational Culture Assessment Tool

ARL- Association of Research Libraries

GLA- Ghana Library Association

CARLIGH- Consortium of Academic and Research Libraries in Ghana

PLA- Primary Level Automation

ISD- Information Services Division

TCO- Total Cost of Ownership

FTP- File Transfer Protocol

UPS- Uninterruptible Power Supply

MIS- Management Information Systems

ERP- Enterprise Resource Planning

CDS- Computerized Documentation System

ISIS- Integrated Set of Information Systems

UPSA-University for Professional Studies, Accra

UG- University of Ghana

LAN- Local Area Network

WAN- Wider Area Network

CD-ROM- Compact Disc-Read Only Memory

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ABSTRACT

The study investigated five major organizational factors namely: organizational structure, organizational culture, top management, human resource capabilities and the availability of physical ICT infrastructure, and their implications on the efficient utilization and development of ICT systems at the Balme Library of the University of Ghana, Legon. The aim of studying these organizational factors was to aid in the improvement of ICT to promote efficient delivery of information services in academic libraries in Ghana. Based on a cross-sectional survey methodology under the quantitative approach, data was collected from 70 selected library staff across sections of the University of Ghana, Balme Library whose line of duties involved the use of ICT. A census sampling technique was adopted for data collection. Statistical Package for the Social Sciences was used to analyze data that were collected via questionnaires, and complimented through observations. The major findings of the study were that, there was a mutual influence between the organizational culture and organizational structure of the Balme Library. Moreover, limited internet bandwidth, obsolete software and inadequate technical support were deemed infrastructural challenges facing the library. Similarly, the lack of comprehensive human resource development was considered a major hindrance, as most participants advocated for more training given their dynamic technological environment. In view of these challenges, the study proposes a more flexible organizational structure and an innovative culture to suit the dynamism of the academic library environment. The study further proposes increased financial investments in internet connectivity, software, and ICT technical support staff. Finally, the study advocates for further training of library staff to equip them with the relevant ICT skills.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The role of academic libraries in any institution of higher learning cannot be underestimated. Academic libraries play a very integral role in the provision of academic resources for teaching and learning. They also provide a place for students and faculty to do their research and advance knowledge in their fields of endeavors. In the past, most traditional library services and collections did not require Information and Communication Technology (ICT) tools and equipment (Agyen-Gyasi, Lamptey & Frempong, 2010; Akpan & Madu, 2014). Collections were particularly in print format while services such as acquisition, processing and dissemination of library materials were often carried out manually.

However, the demand for efficient and effective information provision, coupled with the changing needs of students and faculty, has compelled academic libraries to adopt ICT in most of their core services (Agyen-Gyasi *et al.,* 2010). Consequently, academic libraries have become concerned with how to resource themselves with appropriate technological tools to enhance teaching, research and learning. With technological advancements, virtually every aspect of library services such as cataloguing, acquisition, serials control, circulation functions, distribution of commercial publications, multimedia information delivery systems, collections and textbooks have in one way or the other been automated or digitized (Ajayi, 2002; Ani, Esin & Edem, 2005; Siddike, Munshi & Sayeed, 2011).

The move to adopt ICT has been spearheaded by the parent institutions which these academic libraries serve. Academic libraries, including the Balme Library which is the hub of learning at the University of Ghana, have had their fair share of ICT implementation to improve the efficiency and effectiveness of services provided to faculty and students.

In 2012, the University of Ghana inaugurated a two-million-dollar grant library project known as the Research Commons. The project, sponsored by the Carnegie Corporation of New York, was aimed at enhancing the academic output of students and researchers. The library further received 1.5 million dollars from its benefactors for the initial management of the project, and an additional 2.3 million dollar grant was again approved by the corporation for the Balme Library to commence the second phase of the project (Adanu, 2006).

The Carnegie projects enabled researchers to have, among other services, access to a state-of-the-art technology which includes up-to-date software in the sciences and humanities, Microsoft office applications and hardware such as laptops, laser printers, digital projectors and screens, as well as scanners. The then vice-chancellor of the University of Ghana, Professor Ernest Aryeetey indicated that, the project was a microcosm of a larger set of activities reflecting the urgent desire of the university to imbibe ICT in all aspects of its services.

Akpan and Madu (2014) and Thompson and Pwadura (2014), in enumerating the benefits of ICT in academic libraries, indicate that, ICT leads to an increased enhancement of service delivery, avoids the repetition of routine tasks, generates library statistics easily and is more reliable as compared to manual processes. While the benefits of ICT in academic libraries cannot be underestimated, several concerns about its efficient use have been raised. The over-arching question then becomes what factors account for the efficient utilization of ICT in academic libraries?

Much of the literature available seem to agree that the success of adopting ICT systems does not only stem from the technical features such as design, data, cost and operations. Instead, ICT success is largely dependent on the appreciation of the non-technical features (organizational factors) since organizations do not operate in isolation but rather, are made up of structures, work groups, cultures, people and resources (Laudon & Laudon, 2014).

Laudon and Laudon (2014) further assert that, historically, ICT system designs have been preoccupied with technical issues at the expense of organizational concerns. This assertion is further buttressed by Weerakkody, Dwivedi and Irani (2006) who also posit that, organizational influence on ICT systems is often an overlooked area. The end result has often been the adoption of ICT systems that are not aligned with an organization's strategy, structure, culture, resources and personnel capabilities. In the view of Laudon and Laudon (2014), without an organizational alignment, such ICT systems create tensions, instability and conflicts.

Organizational factors consist of the entities, conditions and events within an organization that influence choices and activities, and potentially expose the strengths and weaknesses found within the organization (Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012). Factors that are frequently considered part of the internal environment of organizations include employee behavior, organizational culture, organizational structure, management style, organizational goal alignment, and financial, human and infrastructural resources (Buruncuk & Gülser, 2004; Laudon & Laudon, 2014).

As pointed out by Laudon and Laudon (2014), management and organization theorists have viewed ICT systems as closely interrelated with all other components of an organization which include the strategy, tasks, structure, people and culture. They further indicate that, by virtue of the interdependence of these components, a change in one component affects all other components. Therefore, an organization's staff, task, structure, culture and resources are bound to be affected when an information system is introduced. By implication, the introduction of a system means redesigning or realigning the organization as well. Daft (2007) adds that, irrespective of their size, organizations look out for the right structures and processes that can help them achieve efficiency while minimizing losses.

Adopting ICT has a powerful behavioral implication on organizations as it ultimately alters individuals' and groups' interactions. Bordia, Lloyd, Restubog, Jimmieson and Bernd (2011)

have indicated that adopting new technologies in organizations is an aspect of change management where libraries may adopt new strategies and processes to strive for a competitive edge in the global marketplace. Organizations, therefore, tend to adopt a technology if it is consistent with their culture, preferred work practices and resources available. In the view of Ragsdell (2000), innovations such as ICT means entering new territories which will require adapting to new rules.

In an age where academic libraries must contend with very scanty and meager resources in undertaking their own developmental projects, (Achugbue, Uwaifo & Igun, 2015; Onoriode, Oghenetega & Jackson, 2012), it is only imperative for library managers to do a thorough scrutiny and assessment to determine the factors inherent in the organization that are likely to affect the development and use of ICT systems partly because, "the parties who are involved in using ICT perceive the success or failure of ICT systems differently" (Belassi & Tuckel, 1996, p.141).

This view is aptly expressed by Al-Fadhli, Corrall and Cox (2016) who posit that there is a relatively quantifiable amount of literature that seeks to understand the underlying organizational factors that shape technology adoption in academic libraries in each country and with time. Yet, there is a dearth of literature on the role of organizational factors in facilitating ICT systems in academic libraries in Ghana.

1.1.1 Profile of University of Ghana

Often referred to as the premier university in Ghana, the University of Ghana was founded as the University College of the then Gold Coast through an Ordinance on August 11, 1948 (Badu, 1999) to provide and promote university education, learning and research. It is the oldest and largest of the eight public universities in Ghana. It currently has a student population of about thirty-seven thousand, nine hundred and forty (37,940) with a male to female ratio of

about 1.4:1. The University of Ghana was ranked the 7th best university in Africa by the Times Higher Education Ranking in April 2016 and:

> Over the last sixty-five years, the University of Ghana has evolved into one of Africa's leading universities, recognized worldwide for the academic and research excellence of its faculty, student body and for the professional success of its alumni (ORID, 2016, p.2).

This assertion by the ORID supports the university's own mandate:

> "As a University poised to distinguish itself in research to make an impact at the national and international level, the University has launched a new strategic plan. The new strategic plan (2014-2024) is intended to consolidate the gains made from the review of the University's mission and practices and situate these within the context of a very dynamic environment of higher education in Ghana and beyond" (UG, 2017).

Similarly, the University's vision is to "become a world-class research-intensive university over the next decade". Its mission is to "create an enabling environment that makes the University of Ghana increasingly relevant to national and global development through cutting-edge research as well as high-quality teaching and learning" (UG, 2017).

1.1.2 Profile of Balme Library

To further understand the factors that may affect ICT delivery in academic libraries, it is essential to focus on an academic library which had moved past the early stages of ICT adoption and has a good degree of ICT penetration in all aspects of its services. This study was, therefore, conducted at the Balme Library of the University of Ghana.

The Balme Library, located in Ghana's premier university, was established in the year 1948. It is one of the biggest academic libraries in Ghana in terms of size and range of collection, and

the oldest in terms of age. The Balme Library is the nerve center for academic work at the University of Ghana and has become a model for the establishment of subsequent academic libraries in Ghana. All academic-related functions such as teaching, research and learning find their support-base in the library where all types of documents are organized for easy access by members of the university community (Dadzie & Van der Walt, 2015).

The Balme Library, in addition to the various autonomous libraries – in schools, institutes, faculties, departments, and halls of residence constitute the University of Ghana Library System (UGLS) (UG, Balme Library, 2017). The UGLS is one of the most important agents of instruction and research. Its mission is, "to achieve excellence in the provision and promotion of information services as well as learning materials in a range of formats to meet the research, teaching and learning needs of the University's mission" (UGLS Strategic Plan, 2014). The vision of the UGLS is, "to be a dynamic entity at the heart of learning, teaching and research endeavors of the University. This, it seeks to do, by playing a leadership role in the collection, organization, and dissemination of information for teaching, research and learning and to be the first point of call for users in information access" (UGLS Strategic Plan, 2014).

The Balme Library operates a hybrid system. This implies that both print and electronic resources are available for utilization (UG, 2017). The Library's collections consist of textbooks, reference materials, electronic journals, books and academic databases. While the Balme Library stocks materials that cut across all disciplines within the University of Ghana, the departmental, school and institute libraries restrict themselves to their various disciplines.

The Balme Library was the first to automate its functions and services in Ghana as far back as 2003. This was aimed at providing efficient and effective services to its ever increasing number of patrons. Since then, the Balme Library and its other satellite libraries has witnessed a steady rise in its user base.

The UGLS is dynamic and continues to adapt to changing technologies and patron information needs which is a major reason it was selected for this study. The libraries in UGLS continue to provide excellent ICT services, products and facilities. Products include reference materials, textbooks, journal databases, study carrels and library instruction. ICT facilities on the other hand include the Research Commons (RC), Knowledge Commons (KC), Faculty Commons (FC), Ghana-South Korea Information Access Centre and Multimedia rooms some of which are equipped with electronic support. These facilities are fitted with state-of-the-art devices and gadgets such as computers, scanners and printers (UG, Balme Library, 2017).

The UGLS information provision terminals – such as the UGcat terminals at issue hall, circulation desk, and other information access halls – are all automated to allow for efficient searching, retrieval and circulation of information to users. The Balme Library also permits off-campus access to its electronic resources by faculty and students. Among some of the services provided by the Balme Library include printing and binding services, reprographic services, students with special needs services, course reserves, digitization and repository services, and library instruction services (UG, Balme Library, 2017). Aside these services, the Balme Library also provides training on the use of various ICT and research tools such as Mendeley, Endnote, OPAC, UGcat, UGspace and Plagiarism Checks. Similarly, it also provides articles and software installation services at the request of the user.

The Balme Library has been consistent in the digitization and uploading of scholarly publications onto the University of Ghana Space. For example, in the 2015-2016 academic year, 2,203 academic materials were uploaded unto the UGSpace (UG Research Report, 2016). The library also subscribes to a wide variety of academic journal databases including Academic Search Complete, EBSCOhost, Emerald, JSTOR, Oxford University Press, Policy Press, Sage Journals Online, Taylor and Francis & Wiley.

According to the UGLS (2014) strategic plan for 2014-2019, its goals regarding technology is to adopt a state-of-the-art technology in all its departments and core services. This will be achieved by;

1. Improving already existing ICT infrastructure of the University of Ghana Library System.
2. Developing a programme for adequate maintenance and upgrading of current ICT infrastructure.

The library is open to faculty and students from 8.30 a.m.-10.00 p.m. during weekdays and from 8.00 a.m.–4.00 p.m. over the weekend. During the Inter-Semester break, however, the library opens from 8.30 a.m.–5.00 p.m. on weekdays and 8.00 a.m.–4.00 pm on Saturdays. (UG, Balme Library, 2017).

1.2 Definition of Terms

An ***Organization*** is a social unit of people that is structured and managed to meet or pursue collective goals. An organization exists when people interact with one another to perform essential functions that help attain goals.

Organizational factors consist of the entities, conditions and events within an organization that influence choices and activities, and potentially exposes the strengths and weaknesses found within the organization (Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012). For the purpose of this study, organizational factors were restricted to the non-technical features which include the management/people component of organizations.

Information and Communication Technologies (ICTs) can be broadly defined as a diverse set of technological tools and resources used to create, disseminate, store and manage

information. For the purpose of this study, ICT will be used interchangeably with Information Technology (IT) and Information Systems (IS).

Information and Communication Technology (ICT) Systems is a set-up consisting of hardware, software, data and the people who use them. It commonly includes communication technology such as the internet.

Academic Libraries encompass research libraries that work closely with other members of their institutional communities to participate in, support, and achieve the educational mission of their institutions by teaching the core competencies of information literacy the abilities involved in identifying an information need, accessing needed information, evaluating, managing, and applying information, and understanding the legal, social and ethical aspects of information use. In Ghana, they comprise the libraries of the country's tertiary institutions.

An ***organizational structure*** defines how activities such as task allocation, coordination and supervision are directed toward the achievement of an organization's goals.

Organizational culture can be defined as a set of values, beliefs and behavior patterns that form the core identity of any organization and helps in shaping employees' behavior.

Top management relates to the highest level of management within an organization who have the day-to-day tasks of managing an organization. They accomplish this by translating policies into goals, objectives and strategies.

Human resource capabilities is defined as the additional knowledge, skills and abilities required for roles within an organization that leads to effectiveness in the organization.

ICT infrastructure is defined as the shared technology resources that provide the platform for the organization's specific information system applications, physical devices and software applications required to carry out tasks in the entire organization. This consist of computing

platforms used to provide computing services (including computer hardware, software, data management technology), as well as networking and telecommunications technology, and technology services (Ankrah, 2014; Laudon & Laudon, 2010).

1.3 Statement of the Problem

According to the Standish Group (2015) chaos report, 66% of ICT systems (based on the analysis of 50,000 ICT projects worldwide) end in partial or total failure. Interestingly, these statistics have followed a similar trend over the last five years. The report further states that, 17% of ICT systems end up so badly that they jeopardize the existence of some organizations (Schwalbe, 2015). This has a trickle-down effect as evidence from the library and information science literature suggest that the use of ICT systems has largely been unsuccessful in some academic libraries (Akpan, & Madu, 2014; Barzekar & Karami, 2014; Dekkers & Forselius, 2007; Farzandipur, 2016).

Massive automation has been undertaken at the Balme Library over the last few years even though ICT has proliferated the Balme Library since the last four decades (Dadzie & Van der Walt, 2015). Notable is the digitization of library collections, automation and the setting up of ICT purpose-built facilities for learning and research. Similar ICT projects are on-going in much more relatively younger and smaller academic libraries across the country (Dadzie & Van der Walt, 2015; Thompson & Pwadura, 2014). Even though ICT has been proliferating in the University of Ghana, Balme Library over the last four decades (Adanu, 2006; Dadzie & Van der Walt, 2015), a review of available literature revealed that much of the earlier studies conducted on the Balme Library were on various areas of ICT research, most of which tended to focus on the technical side (i.e. availability and use) (Adanu & Alemna, 2005; Badu & Markwei, 2005; Dadzie & Van der Welt, 2015). However, no empirical study has been carried out to investigate the organizational factors that influence the use of existing ICT systems at the Balme Library.

As a regular patron of the Balme Library, the researcher has observed with keen interest some organizational practices which he believes, if corrected, could improve the efficient utilization of ICT systems at the Balme Library. While there is the tendency to generalize the findings of some academic libraries – as postulated in the literature –to all academic libraries around the world, individual academic libraries will need to investigate the internal factors unique to their context (Buruncuk & Gülser, 2004).

To address this gap, this study investigated the organizational factors that are most likely to affect ICT systems in academic libraries in Ghana, using the University of Ghana, Balme Library as a case study. The study is imperative, considering that academic libraries face a major problem of securing a steady stream of revenue from financiers like government, donors and university administrators to implement and continuously support their use of ICT systems (Badu, 2009; Daft, 2007). However, the success of ICT in academic libraries is necessary to increase Return on Investments (ROI), justify future ICT investment projects, maximize efficiency and effectiveness in the use of ICT for research, teaching and learning, and improve the overall performance of academic libraries.

1.4 Purpose of the Study

The purpose of this study was to investigate the organizational factors affecting Information and Communication Technology (ICT) systems in academic libraries using the University of Ghana, Balme Library as a case study. From a comprehensive list of organizational factors from related studies (e.g. Ghobakhloo *et al.,* 2012; Hussein, Selamat, Mamat & Abdul, 2005; Laudon & Laudon, 2014) this study investigated five organizational factors that may influence the use of ICT in an academic library setting. They include the organizational structure, organizational culture, top management support, human resource capabilities and the library's physical ICT infrastructure.

1.5 Objectives of the Study

The study intended to address the following objectives:

1. To assess the efficiency and effectiveness of the present organizational structure on the use of ICT systems at the Balme Library.
2. To find out the influence of organizational culture on the use of ICT systems at the Balme Library.
3. To determine the level of top management commitment and support in advancing the use of ICT at the Balme Library.
4. To determine the human resource capabilities available to support the use of ICT systems at the Balme Library.
5. To assess the extensiveness of physical ICT infrastructure available to support the continuous use of ICT systems at the Balme Library.
6. To proffer some appropriate recommendations for policy interventions based on the findings of the study to improve the use of ICT systems at the Balme Library.

1.6 Research Questions

To accomplish the objectives of the study, the following questions were posed:

1. How efficient and effective is the present organizational structure on the use of ICT systems at the Balme Library?
2. How does organizational culture influence the use of ICT systems at the Balme Library?
3. How committed and supportive is top management toward the use of ICT systems at the Balme Library?
4. What are the human resource available to support the use of ICT systems at the Balme Library?

5. Does the Balme Library have the requisite physical ICT infrastructure to support the use of ICT systems?

1.7 Scope and Limitation of the Study

This study concentrated on the organizational factors affecting ICT systems at the Balme Library. The broad and generic nature of the topic makes it imperative to establish its boundaries. ICT systems within the context of this study was limited to all Library Information Systems, upgrades and improvements in library ICT infrastructure and equipment. Also, organizational factors were restricted to the non-technical features which include the management/people component of organizations.

The study also focused on one of the oldest academic libraries and early adopters of ICT systems primarily because of the time and resource constraints of the study. Therefore, the findings from this study cannot be generalized to other academic libraries in Ghana as a result of the specificity of the dynamics of the Balme Library and the fact that the organizational factors that affect the use of ICT systems may differ from one academic library to another. Although the research concentrated on the Balme Library, the implications of the study are however of great value to other academic libraries as well.

Also, even though the various libraries in schools, institutes, faculties, departments, Accra City campus, and halls of residence of the University of Ghana, form part of the University of Ghana Library System (UGLS), they were exempted from the study because they do not fall under the management decision-making structure of the Balme Library due to their partly autonomous nature. More particularly, they are laggards in terms of ICT adoption. They were, therefore, exempted because they do not have a massive penetration and use of ICT systems as compared to the Balme Library.

The variables in this study were restricted to staff and departments of the Balme Library who are directly involved with the use of ICT systems in the core automated library services. These staff comprise of senior members, senior and junior staff from the following departments/sections of the library namely; cataloguing, electronic resources, acquisition, reader services, digitization, periodicals, Africana library, and students' reference section who in one way or the other use ICT in their line of duty.

This research is anchored on the McKinsey's 7S model. However, many researchers have posited that the numerous theoretical approaches for studying organizational factors affecting ICT systems makes it difficult to choose the most appropriate framework (Iceberg, 2006; Nilsen, 2015). In view of this, the researcher recognizes the fact that there could have been a more suitable theoretical framework to situate this study in a better context within an academic library setting than the McKinsey's 7S model applied in this study. This is as a result of the several limitations of the model.

1.8 Theoretical and Conceptual Framework

A theoretical framework is the structure which supports and guides a study. According to Neuman (2007), a theoretical framework is a paradigm or a theoretical system. Thus, a theory is an attempt at synthesizing and integrating empirical data for maximum clarification and unification (Osuala, 2005). Babbie (cited in Powell & Connaway, 2004, p.48), also define theory, "…as a complex set of relationships among several variables" which according to Bentsil (2011) and Mehta, (2013), helps to explain and predict the occurrence of phenomena.

Powell and Connaway (2004) also indicate that, theory helps to reduce the work load in research and can be used to identify the very important propositions for testing, thereby defining and limiting the research area. According to Imenda (2014) the theoretical framework is the soul of every research project and must be used appropriately because it determines how

a researcher formulates his/her research problem, investigates the research problem and the meaning he or she attaches to the data accumulating from the investigation.

1.8.1 McKinsey 7S Model

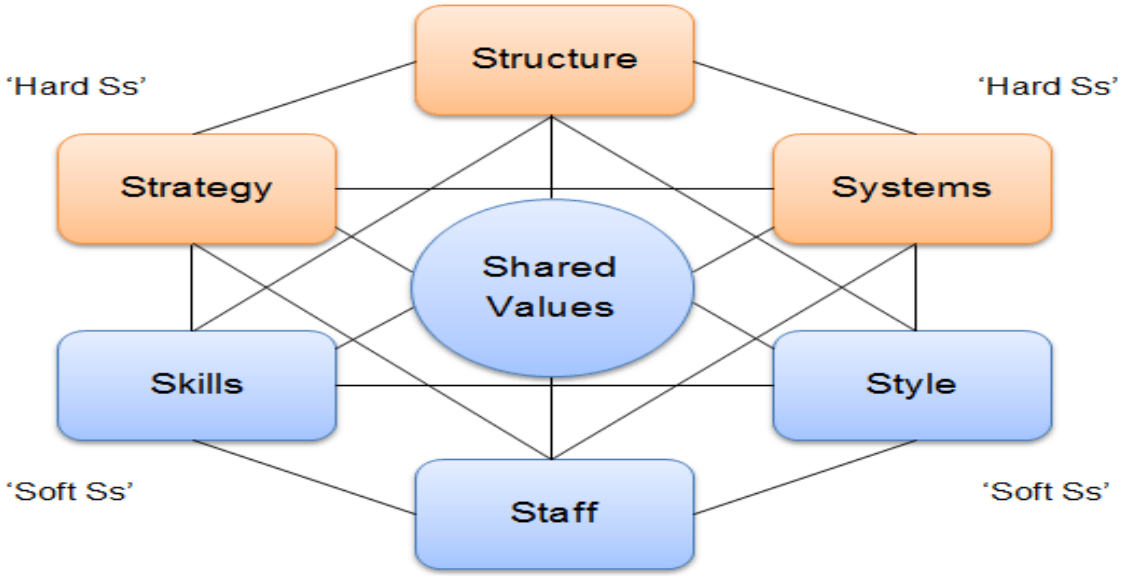
The study was guided by McKinsey's 7S model. With its roots in management and organizational behavior, the model was developed in the 1980s by two consultants working at the McKinsey & Company consulting firm (Peters and Waterman) in their book "Structure is Not Organization" (Alshaher, 2013; Hanafizadeh & Ravasan, 2011). The model is often used as an organizational analysis tool to assess and monitor changes in the internal environment of an organization and has since been used to analyze over 70 large organizations (Alshaher, 2013).

The model is based on the theory that, for an organization to perform well and achieve excellence, seven internal elements of the organization needs to be aligned and mutually reinforcing. The model can be used to help identify what needs to be realigned to improve performance, or to maintain alignment during other types of organizational changes. Irrespective of the type of change – including the introduction of new ICT systems– the model can be used to understand how the organizational elements are interrelated, and to ensure that the wider impact of changes made in one area is taken into consideration. The main elements that are instrumental for organizational effectiveness all begin with the letter "S" and include "structure", "strategy", "systems", "skills", "style", "staff", and "shared values/ superordinate goals" (Alshaher, 2013; Fleisher & Bensoussan, 2015; Hanafizadeh & Ravasan., 2011).

Figure 1.1 presents the connections between the seven elements of McKinsey's model. Ravanfar (2015) indicates that the seven components are categorized under 'soft' and 'hard' areas. Strategy, structure and systems are hard elements that are much easier to detect and control as compared to the soft components of the model. The shape of the model emphasizes

the interconnectedness of the elements. These elements operate collectively as change agents and offer a holistic approach to organizational change. Each element captures several aspects that should be of concern to management. These seven elements present both constraints and opportunities for technological innovation. By implication, the introduction of a system means redesigning or realigning all these elements to fit as well.

Figure 1.1: McKinsey's 7S Model (1982)



Source: Peter, T. J., & Waterman, R. H. (1982).

The major elements of the model are presented as follows;

Strategy is a plan developed by an organization to achieve sustained competitive advantage and successfully compete in the market. An integrated strategy in McKinsey 7S model is one that is clearly articulated, is long-term, helps to attain competitive advantage and is supported by a strong vision, mission and values.

Structure is the basis of formalization and centralization which is basically influenced by the strategy and size of an organization. This includes the level of specialization, levels of centralization and the chain of command.

Systems is an important dimension of organizational effectiveness. Systems refer to the formal and informal procedures that support the strategy and structure of an organization. It includes the daily activities and procedures that staff members of an organization engage in to get the job done and the equipment employed in accomplishing these tasks..

Style/Culture also represents the way an organization is run by top-level managers, how members of the organization interact, what actions they take and their symbolic value. In other words, it is the management style of an organization's leaders.

Staff element is concerned with what type and how much human resource an organization will need and how the organization intends to recruit, train, motivate and reward them. This also encompasses the capabilities of employees.

Skills is the distinctive human resource capabilities of the employees working for the organization. During organizational change, the question often arises as to what skills the organization will need to reinforce its new strategy or new structure.

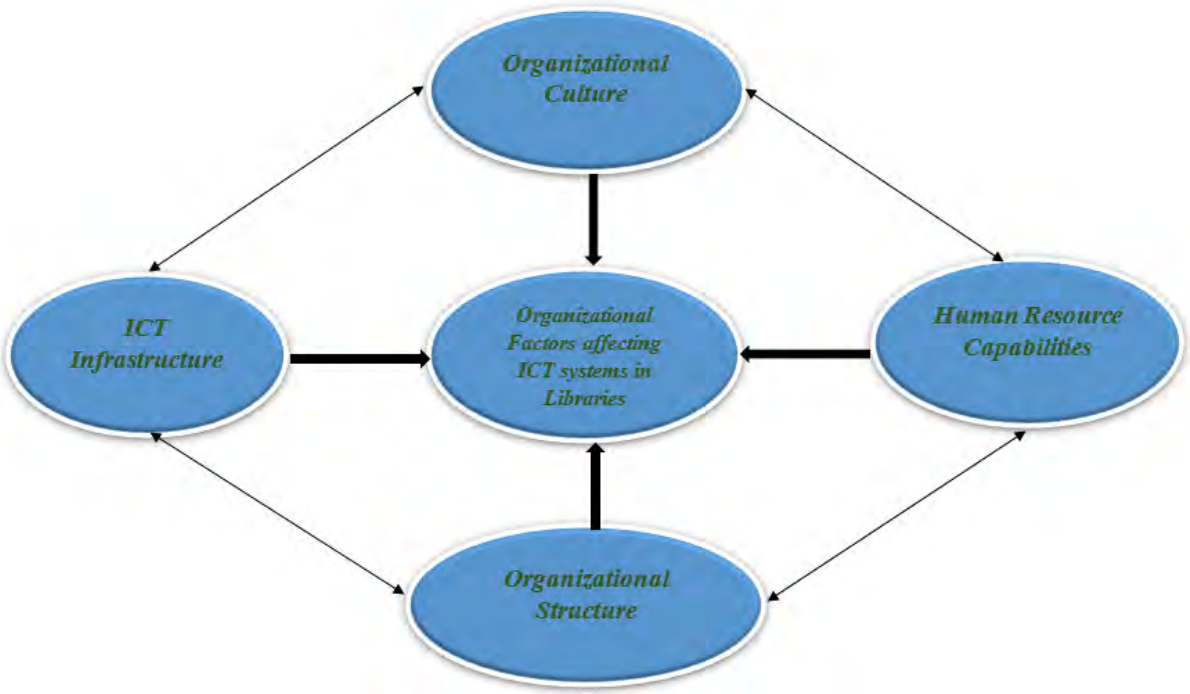
Shared values are the fundamental ideas around which an organization is established. They are considered the core values of an organization that are evidenced in the corporate culture and general work ethic of the organization.

However, this study will limit itself to five variables of the model with reference to the objectives of the study. The components of the McKinsey 7S model adopted to investigate the organizational factors affecting ICT systems at the Balme Library include structure, style, systems, skills and staff. The constructs in the model are further explained by juxtaposing the concepts in relation to the organizational factors affecting the use of ICT in academic libraries.

In this study, the strategy was considered to be the use of ICT systems. The organization was considered to be Balme Library, the staff and skill variable was considered to be the human resource capabilities available to support the use of ICT systems at the Balme Library, the style

variable was considered to be the level of top management commitment and support and the organizational culture while the systems variable was considered to be the ICT infrastructure available to support the library's procedures, processes and routines. The model is further elaborated in Figure 1.2.

Figure 1.2: The adapted McKinsey's 7S Model



Source: Authors Construct.

Based on McKinsey Model (Peters & Waterman, 1982).

The McKinsey's model has been widely applied by several authors in organizational, library and information science research (e.g. Alshaher, 2013; Hanafizadeh & Ravasan, 2011; Singha & satpathy, 2017; Ravanfar, 2015) to assess organizational effectiveness and to explain the organizational factors that enable the sustenance or success of some innovations compared to other less successful ones. As applied in this study to investigate the organizational factors affecting the use of ICT systems in academic libraries, McKinsey's 7S model is primarily

concerned with how these organizational elements influence the way an academic library perceives the need for technology. The model is relevant for this study because it;

1. Examines the likely effects of future changes such as the introduction of a new technology within an organization.
2. Aligns departments and processes during the acquisition or introduction of new technologies.

McKinsey's model has a direct relationship to the research and will guide the researcher in meeting the research objective of investigating the organizational factors affecting ICT systems in academic libraries. The model is relevant to the study because it accounts for the role of the academic library as an organization. It also takes into account the capacity of ICT as an innovation/strategy that needs to be aligned with the organizational structure, culture, level of top management commitment, expertise of library personnel and resources available in academic libraries in order to achieve excellence. This invariably depends on the management of the interrelationship between these seven (7) organizational elements. In Whittblog's (2011) view, introducing a new technology into an organization for instance will require new skills, structures will have to change, and the organization's style and staff will be affected. This, consequently, will also require a new strategy to implement the new technology.

There are, however, many limitations of Peters and Waterman's model though. For example, Fleisher & Bensoussan, (2007) observe that the model may miss some "fine-grained" areas in which gaps in strategy conception or execution could arise. The model also does not add much empirical support thereby making it difficult to assess the degree of fit. Some theorists assert that using Peters and Waterman's (1980) model has been known to have a higher incidence of failure on the part of most organizations in determining their level of alignment partly because of its complexity, and also due to organizational differences that are often ignored (e.g. Normadin, 2012; Odera, 2017).

Despite these criticisms, the Mckinsey's 7S model clearly demonstrates that organizational factors; including structure, , resources (skills and systems), style/culture, and staff, are critical management tool predictors designed to facilitate the process of strategy implementation within the context of organizational change. Based on this line of argument, this study predicted that the success or otherwise of ICT systems in academic libraries could equally be affected by the level of alignment of these five (5) organizational variables under study.

1.9 Significance of the Study

Focusing on the organizational factors affecting ICT systems in academic libraries can be beneficial in facilitating organizational realignment, aid the management process and increases organizational efficiency. Yet, the success of ICT systems in academic libraries would depend on library managers' ability to solicit funds from internal key stakeholders who are beneficiaries and users of ICT. However, to make the story compelling enough to attract stakeholder attention, adequate statistics must be provided through a thorough assessment of the library's ICT systems. Findings of this study would, therefore, help library managers – especially top management of the Balme Library – to determine the precise organizational practices that are likely to improve the effective adoption and utilization of ICT within their institution.

The study is significant to university administrators because it would highlight the organizational inefficiencies that hinder the smooth adoption and use of ICT at the University of Ghana, Balme Library. This is particularly crucial as most academic libraries undertake these ICT projects on a tight fiscal budget and must, therefore, ensure there is value for money and return on investments. Determining these organizational barriers and solutions to them would, thus, help to improve the use of ICT systems at the Balme Library.

Also, the study would reveal some weaknesses and lapses in ICT adoption strategies on the part of academic libraries. This would be, beneficial to management of the University of Ghana,

Balme Library and all other academic libraries, as a re-evaluation of these weaknesses would help determine if these institutional influences should be maintained, changed or realigned with existing IS/IT systems within the library's organizational characteristics for better ICT services.

In addition, the practice of adopting ICT within large academic libraries would aid smaller academic libraries – such as those of the colleges, faculties, departments, schools, institutes and halls that can be categorized as laggards in terms of best organizational practices that could facilitate the development and use of ICT. Managers of smaller libraries, therefore, stand to benefit from this research since the organizational factors affecting ICT within academic libraries would help them to plan and manage an intra-library ICT system taking into account the experience of earlier adopters like the Balme Library.

Furthermore, this study would help address the dearth of literature on the organizational factors affecting ICT systems in academic libraries, which would serve as a useful reference point for librarians who may want to embark on similar ICT projects in the future. It would also provide a basis for future investigations and encourage scholars to contribute to the existing body of knowledge by undertaking further research on the topic given the dearth of literature in this area of study (Al-Fadhli *et al.,* 2016).

Lastly, the results from this study would help the Balme Library and other academic libraries operating within similar contexts to review existing policies on ICT adoption. This would foster the establishment of benchmarks for ICT policies and serve as a guide for future ICT projects not only for Balme Library but other academic libraries across the country.

1.10 Organization of Chapters

The study is organized into six chapters. The chapters have been arranged as follows:

Chapter one: provides a background to the study, a statement of the problem that necessitates the study, purpose of the study, objectives and research questions, scope and limitations, significance of the study and organization of the study. The chapter also provides a theoretical framework on which the present study was anchored.

Chapter two: of the research contains a review of relevant literature to guide the study. The literature was reviewed within a global, African and Ghanaian perspective, and identifies the gap in the literature. The literature review further sought to ascertain what is already known about the "the organizational factors" affecting ICT in organizations and academic libraries for that matter.

Chapter three: presents the research paradigm employed in the study. It also addresses issues such as the research strategy, selection of cases, population, sample and sampling procedure used as well as the mode of data collection and the instrument(s) used in collecting the data for the study. It also explains the techniques used in analyzing the data gathered and methods used in presenting the findings of the study.

Chapter four: focuses on the analysis of data collected from the field. It also presents the findings on the organizational factors affecting ICT systems in academic libraries using frequency tables.

Chapter five: of the thesis presents a discussion of the findings of the study in relation to the research objectives and existing literature.

Chapter six: summarizes the findings and make recommendations based on the outcome of the study. It also provides the conclusion of the study along with recommendations for future studies and implications of the study on policy, practice and theory.

1.11 Chapter Summary

This chapter presented the background to the study, and clearly defined the research problem. The purpose and scope of the study were also dealt with in this section of the study. The chapter further outlined the research objectives and questions, as well as the study setting and relevance of the study. The chapter provided a detailed description of the theory underpinning the study while giving a justification and limitations of the McKinsey's 7s model as used in this study. The chapter concludes with a description of the organization of chapters in the study. The next chapter reviews related literature on the topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review section of this study covers a review of related literature on the organizational factors affecting ICT systems in academic libraries. A literature review is crucial in every research because it puts the current study in focus and links it to broader areas of research (Creswell, 2012; Kumar & Phrommathed, 2005; Taylor, 2005). Apart from affording the researcher the opportunity to know what has already been investigated and what is yet to be investigated, a literature review also helps to develop a general explanation for observed variations in a behavior of the phenomenon under study.

Furthermore, a review of available literature enables the researcher to identify potential relationships between concepts and researchable hypothesis and discover how others have defined and measured them. Data sources used by previous researchers may also be identified. Additionally, an extensive literature review allows for the development of alternative research projects (Kumar & Phrommathed, 2005). Hence, the purpose of this literature review is to ascertain what is already known about the organizational factors affecting ICT systems in other organizations including academic libraries.

This chapter, therefore, discusses all relevant existing works that are pertinent to the study in order to discover the trends and gaps in the literature, with the aim of, "… logically indicating why the proposed study would result in an extension of this prior knowledge" (Fraenkel, Wallen & Hyun, 2015, p.20). In reviewing the literature, the researcher relates discussions back to the statement of the problem, the purpose of the study and objectives of the study. The literature review is divided into two (2) broad themes with some themes further segregated into sub-themes. The first part of the literature review discusses the concept of ICT; specifically the evolution, role and impact of ICT in academic libraries. The second broad theme of the

literature, reviews prior literature on the organizational factors affecting the use of ICT systems. These factors include organizational structure, organizational culture, top management support, human resource capabilities and physical ICT infrastructure. Finally, the chapter gives a summary and conclusion based on the literature discussed. The various themes and sub-themes of the study are grounded within the global, African and Ghanaian perspective.

2.2 Concept of Information and Communication Technology (ICT).

"Information and Communication Technology (ICT) is both a huge industry, and the source of dramatic changes in business practices in all sectors. The term ICT covers a number of related disciplines and areas, from semiconductor design and production, hardware manufacture (mainframes, servers, PCs, and mobile devices), and software, data storage, backup and retrieval, networking, and the internet" (Gentile, 2012, p.4). Hackler and Saxton (2007) also define ICT as "applied computer systems, including computer hardware, software programs, computer networking, and consulting services to support the use and implementation of information technology" (p. 475).

The ability of computers to store and process vast amount of information coupled with the ability of communication technology to transmit this information from one location to another has revolutionized storage, retrieval, and dissemination of information in libraries. Information Technology, Information Systems and Information and Communication Technologies are used sometimes interchangeably in the review of literature.

Friedberg (2003) is of the view that, ICT has changed job functions in organizations in three major ways. Firstly, routine tasks often involved in assembly-line and clerical jobs have been automated. This has to a very large extent replaced semi-skilled and unskilled workers. Secondly, ICT has also changed the performance of non-routine task often by skilled personnel. Lastly, ICT compliments many technical and managerial jobs, thereby raising productivity.

Invariably, the emphasis on the role of ICT is gradually shifting with more attention being paid to the users of the technology and their interactions with ICT. Generally, ICTs are perceived as having positive effects on quality of work life which increases enthusiasm and improves higher skilled personnel, higher paying and complex jobs.

2.2.1 Evolution and Use of ICT in Academic Libraries

Many industries and specific organizations have successfully implemented ICTs and as a result enjoy great competitive advantages (Wang, 2007). Due to the numerous advantages of ICT, Adamou and Ntoka (2017) assert that the last few decades have witnessed an increased use of technology. This has consequently become an essential part of the institutional objective of libraries to transform the dissemination of knowledge and to change how libraries work.

The use of ICT in libraries dates to the early 1960s (Haliso, 2011; Islam & Islam, 2006). This is aptly expressed by Borgman, (1997) as cited in Adanu (2006), when she asserts that "computers have been used for about four decades now for different functions in libraries, especially in the developed world" (p.101). Developed countries achieved this feat earlier and therefore have an edge over developing countries whose track of developing library automation is hindered by some factors.

According to several authors (e.g. Elbert, Fuegi and Lipeikaite, 2012, Kamba, 2011; Haliso, 2011), these factors include poor planning strategies, low levels of infrastructural development, fear of loss of jobs among librarians, inadequacy of skilled staff, lack of theoretical knowledge, lack of computer culture, lack of knowledge on the importance of ICT in libraries and lack of funds.

Haliso (2011) recounts how between the years 2000-2001, academic libraries in Canada had already subscribed to 436,731 electronic journals. Similar attainments were made in libraries in Singapore and Saudi Arabia where ICT initiatives were massively undertaken with the initial

design of ICT policies. The earliest record of the use of ICT in academic libraries in Africa and for that matter Sub-Saharan Africa dates to the early part of the 1960s. In Ghana for example, plans to implement the use of ICT in most academic libraries had been in the pipeline for quite some time (Adanu, 2006; Badu & Loughridge,, 1997).

According to Muhammad (2014) library automation began in the 1970s, when libraries began acquiring software such as the Machine-Readable Catalogues (MARC). Since then, notable progress has been made in library automation in Sub-Saharan Africa. In the 1980s, network and communication technologies, optical discs and CD-ROMs were introduced. The major goal of the early ICT software used in basic library routines such as circulation, acquisitions and cataloguing was to make library operation and services efficient and effective. The 1990's witnessed massive leaps in the application of ICTs in libraries such as the Internet and World Wide Web protocols (Badu & Markwei, 2005). The period from the year 2000 is often described as an era of automated libraries and 24/7 access to unlimited electronic resources (Elbert *et al.,* 2012; Muhammad, 2014)

In Kenya, most academic libraries around the 1980's were utilizing Computerized Documentation System/Integrated Set of Information System (CDS/ISIS) library software. CDS/ISIS was used mainly for maintaining databases. For instance, the University of Nairobi maintains a list of research theses in Kenyan institutions of higher learning and a list of publications held in libraries in Kenya using CDS/ISIS (Mutula, 2012).

In Ghana, however, literature available suggests that academic libraries embarked on computerization from as far back as the mid-1980s and some of them have been successful in providing services like the use of CD-ROM, internet connectivity and access to databases of full text journal articles and abstracts (Adanu, 2006; Asamoah, 2003; Dadzie & Van Der Welt, 2014; Owusu-Ansah & Adjei, 2015; Thompson & Pwadura, 2013). For instance, the first ever automation in the University of Ghana, Balme Library was carried out in the year 1987.

However, it was not until 2003 that a large-scale automation process, sponsored by the Carnegie Corporation of New York, was undertaken at the University of Ghana, Balme Library.

Ahenkorah-Marfo and Borteye (2010) also report that the main library of the Kwame Nkrumah University of Science and Technology started some form of automation in the mid-nineties. The computerization of the library commenced with a free CD/ISIS for windows software which was an information retrieval software package developed by UNESCO. However, massive automation commenced in the year 2007 after a series of meetings and consultancy on the way forward.

As reported by other authors (e.g. Amekudee, 2005; Dadzie & Van Der Welt, 2014), several other public university libraries in Ghana such as the University of Mines and Technology, Tarkwa, University of Cape Coast, Sam Jonah and the University for Development Studies libraries are in the process of automating their libraries while some are at the verge of completion.

The literature is rife with information on various aspects and stages of automation in academic libraries. A study conducted by Ramzan and Singh (2009) regarding the extent of computerization of university libraries in Bangladesh revealed that, out of twenty university libraries that took part in the survey only six of them were partially computerized, eleven libraries were about to be computerized and three libraries had made plans to be computerized.

Sampath and Biradar (2010) also studied the use of ICT in college libraries in Karnataka, India, to determine the status of library automation and the barriers to automation. The results showed that the application of ICT in Indian college libraries had not reached an appreciable level, and this was attributed to a lack of funds, lack of skilled staff and inadequate training.

Despite the enormous benefits of ICT in academic libraries, a brief analysis of country reports indicates that many libraries in Africa are still grappling with its implementation and subsequent adoption (Akpan & Amadu, 2014; Elbert *et al.,* 2012; Owusu-Ansah, & Adjei, 2015).

In summary, academic libraries globally of which Ghana is no exception are gradually moving away from the traditional and archaic ways of serving patrons. This has resulted in the introduction of ICT with features such as digital libraries, e-resources and the setting up of multi-purpose ultra-modern facilities for teaching, learning and research.

2.2.2 ICT Systems Infrastructure in Academic Libraries

The aim of an ICT infrastructure is to support all ICT systems resources and services within an organization. ICT infrastructure involves hardware, software, and telecommunication equipment (Ankrah, 2014).Ultimately, sufficient infrastructure is very essential for the successful application of ICT in libraries. Thus, an organization's ICT infrastructure consists of four elements;

a) Computer hardware consists of the physical tools used for capturing, processing, storage and output activities.
b) Computer software consists of computer programs that control the computer hardware.
c) Communication technology, also consist of both physical devices and software which links computers located at various locations.
d) Data which is usually in the form of facts or numbers, collected to be examined, considered and used to help in decision-making (Ankrah, 2014).

Agyen-Gyasi *et al.* (2010) also categorize present information technologies found in libraries into three (3). They include computers, storage media and telecommunications facilities. They

opine that the combination of these three technologies has led to an improvement in the quantity and quality of library services rendered to users and a reduction in delivery time.

Patil, Kumbarand and Krishnanada as (cited in Islam and Islam, 2006) have also reported that ICT components frequently used in most academic libraries can be categorized into three (3) broad components. These categories include;

a) Computer technology,
b) Communication technology and
c) Reproduction technology

Examples of computer technologies are work stations, mainframe computers, super computers, personal computers, micro technology, software technology, and artificial intelligence. Communication technology is comprised of audio and audio-visual technology, telephones, teletext, facsimile transmissions, electronic mail, voice mail, teleconferencing, satellite technology, the internet and network technology. Micrographic technology, printing technology and reprographic technology also constitute the reproduction technologies used in academic libraries.

Odeh (2011) in his analysis of ICT applications in libraries in Nigeria, identified ICT equipment and facilities to include laptops, desktop computers, storage devices, networks, output devices, photocopying machines, scanners and telecommunication facilities such as Local Area Network (LAN), Wider Area Network (WAN) and Wireless Internet Network. It was also found in his study that there was a high level of usage of these equipment by faculty, students and library staff.

Adanu (2006) asserts that the use of ICT in libraries is not limited to only the acquisition of computers but also networking of these computers, as well as the purchase and installation of software for an Integrated Library System (ILS). Islam and Islam (2006) further indicate that

the technologies used to support communication of information include fixed wireless and satellite communications, and broadcasting networks. Both authors concluded that a holistic comprehension of ICT encompasses human, telecommunication and information policies (Adanu, 2006; Islam & Islam, 2006)

Suku and Pillai (2005) carried out a study to determine the automation activities of academic libraries in Kerala. The study focused on aspects of automation such as information technology infrastructure, in-house activities, automated services and their usage. Amongst some of the major challenges identified by the study include the laborious purchasing procedure for the acquisition of hardware and software, non-availability and under-utilization of campus Local Area Network (LAN), intermittent power cuts, the non-availability of standby generators and heavy-duty Uninterruptible Power Supply (UPS) backups.

Cleveland (1998) also examined the technical architectural challenges and issues in setting up a digital library. The study found that high speed local networks and fast internet connectivity, a variety of servers such as web servers, and File Transfer Protocol (FTP) servers are very important components which influence the overall management of automated library systems. Based on these findings, the author recommends that libraries must enhance and upgrade their network architecture to accommodate electronic materials.

Barton and Waters (2005) also advocate that 24-hour service availability, scalability backups and recovery programmes, system maintenance, system customization, international multilingual support, and data loading are core technical areas that must be considered in automating libraries.

2.2.3 Functions of ICT in Academic Libraries

Parker *et al.* as (cited in Wang, 2007) categorize the general functions of ICT into the following;

a) Substitutes: Where power is deemed to be designated in technology rather than people. This strategy is generally driven by financial considerations with the aim of improving the efficiency and effectiveness of an organization.
b) Complimentary: Improving productivity and employee output by providing more ingenious approaches to carrying out tasks using ICT.
c) Innovation: This is achieved through increasing a competitive edge by creating new products and services.

Within the library and information science literature, Shuva (2005) identified five (5) functions of ICT in an academic library environment. These technologies for libraries consist of;

a) Database organization and management, library management and operation activities in the library;
b) Telecommunication technologies whose function and activities include library networks and information networks.
c) Reprographic technologies whose activities include photocopying, microfilming, optical and audiovisuals.
d) Library technologies function and activities which include classification, cataloguing, indexing, abstracting and database creation
e) Technical communication capacities which include technical writings, editing and publishing.

Saraf, (cited in Shuva, 2005) however summarized these functions to include automation; telecommunications (networks); electronic mail, electronic bulletin and electronic

conferencing; online searching; compact disk (CD-ROMs); tele facsimile (fax); and personal computer applications.

Williams and Channaveeraiah, (2008), acknowledging the goal of information technology in libraries, state that, the function of ICT is to institute communication facilities to improve information transfer and access that provide support to learning and research pursuit through cooperation and involvement of different stakeholders with the learning environment.

2.2.4 Impact of ICT systems on Academic Libraries

One of the factors that might affect ICT adoption in the organization is the impact it makes. With regards to the use of Information Technology in organizations, Saidel and Cour (cited in Hackler and Saxton, 2007) indicate that, ICT has the power to revolutionize aspects of organizational employees' working conditions such as workload and interpersonal relationships which could ultimately have a considerable impact on both employees and job satisfaction. However, a considerable gap exists between developing countries, more specifically African countries, and developed ones in terms of the impact of ICT (Elbert *et al.,* 2012; Ridwan, 2015).

With respect to academic libraries, the radical change from the traditional and manual process of accomplishing tasks in the library working environment to a rapid adoption of ICT has had a tremendous impact not only on the wellbeing of beneficiaries of library services but also on librarians (Adekanye, 2011; Jeevan & Nair, 2004; Krubu & Osawara, 2010). The current trend in many libraries worldwide is the deployment of ICT facilities in rendering services of various kinds to patrons thereby providing speedy and up-to-date information for their use.

Library automation has several benefits. It reduces the number of repetitive routine tasks, generates library statistics easily, speeds up library services, and more importantly is efficient

than traditional or manual library services (Adanu, 2006; Akpan & Madu, 2014; Thompson & Pwadura, 2006).

Peyala (2011) also asserts that, the automation of acquisition units enhances library functions such as controlling funds. He further notes that automation makes it quicker and easier to check for approved books thereby avoiding duplication. ICTs have, therefore, made it possible to easily obtain and distribute information as well as implement new ways of carrying out tasks in libraries in real time and at a cheaper cost.

Baro (2011), writing on the impact of ICT on academic libraries, indicates that Information and Communication Technology (ICT) has radically transformed most of the services provided by academic libraries. He intimates that, "ICT is heavily utilized in the storage, processing and dissemination of information. It has made the organization of information very efficient, the delivery of basic information services more effective and the dissemination of information to users easier. It has eliminated a lot of routine and repetitive tasks in a library" (p.12).

Thompson and Pwadura (2013, p.75) also in enumerating the benefits of adopting ICT at the University for Development Studies, Navrongo campus library, posit that, "the Navrongo Campus Library is now enjoying the Primary Level of Automation (PLA), where a patron can search to determine the status of a library book before he or she comes to the library to borrow. One can also make reservations through this service. Additionally, cataloguing library materials using OPACs have now been made possible. A great number of materials can now be processed faster and as a result, patrons have quicker and easier access to library materials".

Importantly, manually operated housekeeping chores such as the borrowing and returning of books and materials have become fast, easy and reliable. Also, generation of reports regarding transactions is also done easily and quickly by the click of a button. This helps in efficiently administering the library, as well as cataloguing and circulating books and other library

materials. It also helps to trace, with ease, any overdue material or book borrowed. Patrons can now more easily access materials in the library. Similar views are expressed by Haliso (2011) who suggests that, "Information and Communication Technologies (ICTs) enhances service provision to library clientele. Librarians use ICTs to perform functions like cataloguing and classification, serials management, collection management, budgeting, circulation management, referencing, indexing and abstracting to improve information services to library users" (p.3).

In support of this assertion, Arinola *et al.* (2012) undertook a study to evaluate the impact of ICT on cataloguing and classification of library materials in some selected university libraries in South-West Nigeria. Data was drawn from the survey responses of 10 randomly selected academic libraries in Nigeria and survey questionnaires administered to one hundred and twenty-six (126) randomly selected library staff working in the cataloguing and classification section within the selected libraries. The results lend statistical support to the fact that ICT could bring a lasting relief to the stress of manual classification and cataloguing, which is prone to human error. They suggest however that, this benefit of ICT is not well utilized due to cost, technical know-how and management issues.

Furthermore, Akpan and Madu (2014) also in enumerating the benefits of ICT, indicate that it leads to an increased enhancement of services delivered and makes manually operated traditional chores such as borrowing, and lending of materials more efficient and effective. The use of ICT also avoids the repetition of routine tasks, generates library statistics easily, and more importantly, speeds up and renders more reliable library services, as compared to manual library services.

Mutula (2012) presents the experiences and lessons learned from the University of Botswana library automation project. He found that automation has impacted many projects, thereby increasing access to a diversity of electronic resources, improved the image of librarians,

invented new services, freed physical library space, transformed the library into a social learning environment and enabled access to local content which is made possible through digitization.

Siddike *et al.* (2011) set out to determine the automation of library tasks among automated libraries in Bangladesh. The results of the survey showed that cataloguing of library materials ranked first, among computerized library tasks, with all automated libraries doing it. Next in line were acquisition, serials control and circulation.

Krubu and Osawaru (2010) in their study of how ICT impacted two (2) Nigerian University Libraries discovered that there had been a remarkable increase in the use of ICT across many library activities. This consequently led to faster acquisition, processing, storage, retrieval and dissemination operations. Aside that, it was also observed that the problem of information explosion in this era was been addressed through the use ICT.

Owusu-Ansah and Adjei (2015) indicates that in an era where academic libraries are faced with massive resource-constraints, ICT related services and resources provide an alternative for academic libraries to generate income to support their budgets and other related economic activities. In support of the above assertion made by Owusu-Ansah and Adjei (2015), Lawal-Solarin (2013) in her study of the use of ICT in Nigerian libraries observed that, ICT provided libraries with a larger pool of resources. Facilities such as the internet had become an integral part of ICT and this added value to the services provided by Nigerian libraries which in the long run was expected to facilitate community development. Thus, the review of the literature so far suggests that academic libraries which have automated their services have reaped considerable benefits. This positive impact of ICT systems is confirmed by librarians in the literature reviewed so far.

2.3 Organizational Factors affecting ICT Systems

Many factors affect ICT systems in organizations. These factors can be grouped into the external, task and internal environments. The task environment consists of factors that directly affect and are affected by an organization's important operations. They include competitors, customers, suppliers and labor supply.

The external environment of an organization consists of all the outside factors or influences that impact the operations of an organization. Factors of the external environment include economic, socio-cultural, technological, political and legal factors. These factors do not directly affect the interim processes of an organization, but they can influence its life-long policies.

The internal environmental factors, often referred to as organizational factors, consist of the entities, conditions, events, systems and structures within the control of organizations that influence choices and activities. Organizational factors expose the strengths and weaknesses found within an organization (Zakaria, 2011). Organizational factors form the context within which processes are carried out and they include the organization's structure, management style/culture and resource capabilities. Additionally, the internal environment to a large extent influences organizational activities, decisions, and employee behavior. Therefore, changes in these elements can have a considerable impact on the organization and subsequently on how it uses ICT (Rue, Byars & Ibrahim, 2012).

Jones and George (2014) making similar assertions also indicate that every organization has existing structures, policies and systems which can all change with time as a result of a new technologies. They conclude that each of these internal factors must, therefore, be considered, assessed and dealt with holistically as part of the ICT adoption process. They go further to cite

the example of how a reorganization by virtue of the adoption of a new technology may result in a substantial hiring and training cost for newly structured jobs in an organization.

There is yet no cohesive body of literature to understand the organizational factors affecting ICT adoption in academic libraries. Rather, what exists is a plethora of literature on similar areas of research, most of which are guided by the study context, with several authors (e.g. Anyaoku, Osuigwe, & Oguaka, 2015; Beeson, Mahamid, & Lane, 2003; Melitski, Gavin & Gavin 2010; Schiler, 2003) all attempting to study specific aspects of these organizational factors.

For instance, organizational factors frequently studied by authors include the social and behavioral characteristics of members of an organization (Lucey, 2005). Among these characteristics are employee behavior and the organizational culture. Other have looked at it from the managerial perspective which includes top management support, leadership style and managerial ICT knowledge (Buruncuk & Gülser, 2004; Laudon & Laudon, 2014). These characteristics, in the view of Lucey (2005), are modern ideas that largely stem from the scientific management movement in the early part of the last 20th century.

Yeh and Walter (2016) in their assessment of the critical factors contributing to the successful use of an Integrated Library System (ILS) revealed that from a strategic perspective, top management involvement, staff/user involvement, interdepartmental communication, and staff user emotion greatly affected implementation outcome.

A study of factors affecting ICT projects in academic Libraries in Kuwait also identified factors in the areas of national policy, decision making styles, librarian's status and staff shortages as crucial determinants in the use of ICT. These factors, according to the study, could either be drivers or inhibitors, and these factors bear a complex relation to each other (Al-Fadhil *et al.,* 2016).

Ghobakhloo *et al.* (2012) in their review of literature on organizational factors categorized the organizational factors influencing ICT adoption into four broad themes. They include Top management commitment, end user capabilities, availability of resources and organizational behavior/characteristics. Daft (2007) opines that, organizations irrespective of their size, look out for the right structures and processes that can help them achieve efficiency while minimizing losses. Thus, evidence from the literature appears to categorize internal environment/organizational factors under the following: organizational culture, organizational structure, top management support, management style, managerial IT knowledge, organizational goal alignment, resource allocation, information systems infrastructure and leadership styles (Gagnon *et al*., 2012; Macharia & Pelser, 2014; Onoriode, Oghenetega & Jackson, 2012; Yeh & Walter, 2016).

Beleiu *et al.* (2013) assert that these organizational factors are usually interrelated. Hence, knowing the organizational factors that exert more influence on ICT systems aid the management process and increases an organization's efficiency. From a practical perspective, an organization's structure might restrict the adoption of certain strategies. This therefore implies that the strategy must align with the organization's current policies, or the conflicting policies must be modified or adjusted to realign with the strategy (Jones & George, 2014; Robbins & Coulter, 2009; Rue *et al*., 2012,)

The use of ICT in libraries and the specific organizational factors affecting its use have been investigated by a number of studies (Barzekar & Karami, 2014; Del Aguila-Obra & Padilla-Meléndez, 2006; Haliso, 2011). This study combines studies in the field of management and organizational behavior with the aim of investigating the link between specific organizational factors and the use of ICT systems in an academic library environment. Also, much of the evidence presented in the literature is based on data collected from the ever-dynamic private

business sector (Al-Ghaith, Sanzogni & Sandhu, 2010; Chen, 2003; Zhen, Garthwait, & Pratt, 2008).

Very little is known about what pertains in academic libraries regarding the relationship between organizational factors and ICT utilization. In this regard, literature based on other fields of endeavor is, quite deficient in explaining the organizational factors affecting ICT systems in academic libraries. This study, therefore, expands on the evidence in the literature to cover academic libraries, "...due to the unique characteristics of each organization and its specific conditions of technology diffusion" (Ghobakhloo *et al.,* 2012, p.59). In the context of this study, the organizational factors include the Balme Library's ICT staffing structures, work culture, top management support, human and infrastructural resources.

2.3.1 Organizational Structure

An essential organizational factor that affects ICT systems is an organization's structure. Buruncuk and Gülser (2004) are of the view that adopting ICT systems has a powerful behavioral and organizational impact as it ultimately transforms how individuals and groups interact. Dess, Lumpkin and Taylor (2005) write that, the relationship between strategy and structure implies that structure must follow strategy. Therefore, a fit must be established between an organization's structure and infrastructure, and ICT structure and infrastructure if current structure places certain restrictions on the use of ICT (Laudon & Laudon, 2014; Rue *et al.,* 2012).

Veisi, Veisi and Hasanvand (2012) define organizational structure as the, "division of responsibilities and decision-making levels in an organization" (p.3882). Gibson *et al.* (2011) also define an organization's structure as, "the formal pattern of how its people and jobs are grouped" (p.8). Several authors (e.g. Gibson *et al.,* 2011; Schonfeld, 2016; Veisi *et al.,* 2012) are of the view that the organizational structure is often illustrated by an organizational chart.

Gibson *et al.* (2011) however argue that, organizational structures can be far more complex than just viewing it as an organization's chart on a piece of paper or frame on a wall. The purpose of an organization's structure according to Mullins (2007) is to, "…create a framework of order and command through which the activities of the organization can be planned, organized, directed and controlled" (p.564).

Most functions within organizations – of which academic libraries are not exempted – continue to be automated. This has affected contemporary organizations' structures immensely, as ICT has introduced new ways of conducting businesses in libraries. In the view of Rue *et al.* (2012), adopting ICT means eliminating human minds and hands from an organization's most routine tasks and replacing them with ICT systems. Empirical studies by (e.g. Brodar, Čalopa & Pihir, 2009; Lucey, 2005; Mirmasoudi, Farjami & Pourebrahimi, 2012) indicate that organizational structural elements such as levels of formalization, specialization, level of centralization or decentralization, hierarchy of authority, span of control and chain of command tend to affect the use of ICT systems in academic libraries.

For instance, centralization has been found to be positively or negatively associated with new systems, depending on the phase of the technology and how often the technology is for changing inputs into outputs (Robbins & Coulter, 2009). Elements of an organization's structure such as the level of centralization, specialization and formalization tend to influence the type of structure in vogue in an organization, and are considered adequate for assessing its impact on the use of ICT. These are the mechanistic and organic organizational structures, and both have been discussed extensively in the management and organization behavior literature.

According to Lunenburg (2012) mechanistic organizations are some of the oldest forms of traditional organizational designs. They tend to be hierarchical, bureaucratic and can either be simple, functional or divisional. They are often characterized by;

1. highly centralized authority,
2. formalized procedures and practices, and
3. Specialized functions.

Mechanistic organizations are relatively easier and simpler to organize, but rapid change is very challenging in contrast to organic organizations. Employees in mechanistic organizations are found to work separately and on their own assigned tasks. There is a definite chain of command within them and decisions are made as high up the chain as possible (Robbins & Coulter, 2009). Mechanistic organizations have strict organization policies or operating standards and an abundance of documentation. This structure is considered to be the more stable of the two structures. Organizations using the mechanistic organizational structure typically hold tight control over processes and employees (Jewczyn, 2010). Rules are implemented and rarely deviated from and there is a very clear chain of command to delegate responsibilities and power throughout the organization. Manufacturing companies are known to practice this type of structure, although other groups like universities and academic libraries also benefit from mechanistic organization.

According to Lunenburg, (2012) organic organizations are some of the modern forms of organizational designs. They are characterized by;

1. Horizontal communications and interactions (2)
2. Low specialization as knowledge resides wherever it is most useful, and
3. A great deal of formal and informal participation in decision making.

Employees in organic organizations often work in groups and teams and share inputs on tasks. Additionally, each team handles one task in organic organizational structures. Communication is open between employees, managers and executives, and there is a greater scale of verbal communication between parties (Robbins & Coulter, 2009). There is also more face-to-face time within the hierarchy of power. The organic structure is more adaptable and flexible to

changes in technology, even as the organization grows (Jewczyn, 2010). Examples of organic structures include the coveted positions that lie within giant corporations like Google and Facebook. A major reason for the success of organic organizations is the realization that a happy workplace makes for happy employees. Hence, Jones and George (2014) recommend that managers who are interested in creating autonomy at work places, empowering employees and setting up cross-functional teams adopt organic structures because of their flexibility and responsiveness to complex tasks, technologies and strategies.

Despite the enormous benefits of an organic structure, Jewczyn, (2010) and Lunenburg (2012) opine that, too much decentralization in the use of ICT systems has some disadvantages. These include the abuse of power and authority and the lack of communication among functions which could ultimately prevent synergies of cooperation. This inadvertently affects the performance of an organization.

Jewczyn (2010) and Lunenburg (2012) conclude by advocating for a balance between mechanistic and organic structures. This they refer to as the blended approach between mechanistic and organic structures. Organizations may need to change some of their structural traits as they change and mature. The authors opine that a stable environment operating a well-understood technology amidst the production of stable goods and services will not need to decentralize.

According to Brodar *et al.* (2009), structural dimensions create the basis for measuring and comparing organizations based on the structural factors that reveal their internal characteristics. They further posit that some factors can be included in both structural and contextual factors and one of these factors is ICT, adding that, "ICT impacts not only all the organizational structure elements, but comprehensively changes the effects of all the other mentioned structural and contextual factors, therefore becoming a generic factor" (p.244).

The assertion of Brodar *et al.* (2009) confirms the findings of Mirmasoudi *et al.* (2008) who set out to determine the effect of IT on organizational structures using a sample of 140 managers, heads of branches and experts of 'Refah' Bank in Guilan. Among the findings reported was an observed significant positive relationship between IT and organizational structure. Thus, ICT was perceived to ease complexity and centralization thereby reducing bureaucracy in the organizational structure of the bank. In support of these findings, Shafritz, Ott and Jang (2011) intimate that, an organizational structure that resonates undesired values such as hierarchy, rigidity, homogeneity, power based on authority and associations in closed alliances and the over reliance on rules, restricts flexibility and can be a formidable barrier to effecting lasting technological change.

Research by Gholipour (2004) put forward that ICT systems will undergo change in terms of organizational structure. Therefore, with the adoption of information technology, a flat structure is better recommended than a tall structure while a non-hierarchical is preferred to a hierarchical structure; and non-centralized one also preferred to a centralized structure.

In a study involving 75 participants (made up of accounting staff, chief financial and business information systems staff, vice rectors and heads of finance) from 45 private colleges in the city of Badung in West Java and Banten, Nusa (2015) observed a significant effect of organizational structure on the quality of accounting information systems. The researcher reports that the poor quality of accounting information system were unable to give timely reports which was as a result of a lack of integration with the bank's specification. This was further attributed to a lack of specialization, a higher span of control and chain of command which all yielded low levels than ideally expected in these colleges.

Delic and Nuhanovic (2010) criticize the functional organization type of structure indicating that, it does not provide enough flexibility within an organization. This was after their survey

results showed that 58.51% of sampled Bosnian enterprises were using a functional organizational structure. Based on the findings, the authors advocate that Bosnian enterprises should undergo organizational restructuring, so that the functional structure can be replaced with more prioritized structures such as the multi-divisional or hybrid organizational structures to suit new business conditions.

Quinlan and McHarg (2012) put forward divergent views when they recount the case of the University of Southern California (USC) where a restructuring that merged the University's ICT directorate and library into the University of Southern California Information Services Division brought about several challenges. Amongst some of the observed challenges was a lack of representation of management of the library in the core-functional activities of the library. Additionally, there was a sense of disenfranchisement among library staff which was caused by the team-and-center organizational structure which was institutionalized during the period of the merger of the two departments.

The challenges that arose from the merger ultimately led to a dissolution of the merger and the library assumed its original structure of greater local authority and responsibility which was deemed more appropriate in the prevailing circumstances. Based on these observations and experiences, Quinlan and McHarg (2012) argue that, "creating a more solid foundation based on innovation is not sufficient. They put forward that "…aggressively encouraging innovative ideas has on occasion bred more skepticism than excitement" (p.160). However, in an uncertain, changing environment where high-technology companies are producing state-of-the-art products, top managers will need to empower employees and also allow teams to make important strategic decisions to enable their organizations cope with the changing environment.

In view of all the above, Mullins (2007) recommends the need for a continuous review of an organization's structure, especially with large organizations, so as to ensure that it is the most

appropriate form for the particular organization's growth and development. This is in line with the contingency theory which stipulates that "managers design structures to fit the factors or circumstances that are affecting the organization the most and causing them the most uncertainty" (Mullins, 2008; p.208). Thus, there is no one best way to design an organization but rather, the design should reflect each organization's specific circumstances. In view of this, several researchers have proposed that in some stable situations, mechanistic structures may be more suitable while in other circumstances, organic structures might be the most effective.

2.3.2 Organizational Culture

Evidence from the literature all support the fact that organizational culture is one factor that influences ICT systems in an organization. According to Mullins (2007), a major determinant of an organization's structure is its culture. In the view of Ragsdell (2000), innovations such as ICT means entering new territories which will require adapting to new rules. This view is further buttressed by Mullins (2007) when he asserts that culture (in terms of how things are done in an organization) and common values, beliefs and attitudes have a tremendous impact on an organization's processes, including the design of structure which is inextricably linked to the wider context of societal structures and cultures.

According to Wang (2007), successful adoption and use of ICTs by organizations is heavily reliant on the ability of an organization to change and adapt in order to fully exploit the use of ICT. In view of this, Wang (2007) recommends that a strategic analysis of an organization's needs and objectives be conducted before proceeding to use ICT.

Organizational culture is one of the most influential aspects of an organization and it reflects the way tasks are realized, goals are set and in how people are guided toward the achievement of those goals (Stare, 2011). Obasan (2012) intimates that, organizational culture is an idea in the field of organizational studies and management which describes the psychology, attitudes,

experiences, beliefs, and values of an organization. Desson and Clouthier (2010) also assert that with time, each organization develops a set of, "tacit and explicit understanding, beliefs and practices" (p.2).

According to Jones and George (2014), "organizational culture comprises the shared set of beliefs, expectations, values, norms, and work routines that influence how members of an organization relate to one another and work together to achieve organizational goals" (p.63). Nikcevic (2016) provides a more comprehensive definition of organizational culture. According to Nikcevic, organizational culture "…includes a system of assumptions, values, norms and attitudes manifested through symbols, developed and adopted by members of an organization through their shared experiences which helps them to determine the meaning of their surrounding environment and how to behave" (p.191).

Shafritz *et al.* (2011) add that, this culture consists of, "many intangible phenomena, such as values, beliefs, assumptions, perceptions, artifacts and patterns of behavior" (p.338). Desson and Clouthier (2010) explain that these cultural variables of a group may not be readily noticed but are generally understood and adhered to by members of the organization. Damschroder *et al.* (2009) conclude that, many initiatives fail because of the less tangible assumptions, thinking or culture of individuals.

Ng'ang'a and Nyongesa (2012) observe that a culture could either be weak or strong depending on the number of values and behavioral norms that are shared, as well as the traditions and number of sub-cultures that exist within the organization. The authors indicate that a strong culture can facilitate communication, decision making and control, and create cooperation and commitment. A weak culture on the other hand may obstruct the smooth implementation of strategy by creating resistance to change. Ng'ang'a and Nyongesa (2012) established a direct relationship between culture and strategy and posit that a close culture-strategy match is crucial

to managing an organization's resources with maximum effectiveness. They further indicate that, a culture that encourages people in an organization to do their jobs in a strategy – supportive manner – contributes effectively to the execution of that strategy. Invariably, an organization's culture and strategy that do not align has to be changed immediately lest it defeats a manager's efforts to make the strategy work.

Ng'ang'a and Nyongesa, (2012) intimate that the onus lies on the 'strategy-maker' to select an appropriate strategy that is compatible with, the 'sacred' or unchangeable parts of the prevailing corporate culture. Once a strategy is chosen, it is the strategy implementer's responsibility to align the corporate culture of the organization with the strategy. However, aligning strategy to corporate culture presents a very strong challenge to managers and organizations. The challenge for managers is in determining what kind of culture will facilitate the execution of the organization's strategic use of ICT. Kulvinskienė and Šeimienė (2009), therefore, recommend the following in managing these challenges;

1. Diagnosing aspects of the organization's present culture that poses challenges to the use of ICT.
2. An innovative thinking about concrete actions management can take to modify the cultural environment and create a stronger fit with the strategic use of ICT.

"The organizational setting within which ICT is implemented forms an integral part of that system" (Indeje & Zheng, 2010, p.2). Therefore, it is important to understand and identify the types of organizational cultures and how this could facilitate or hinder the use of ICT systems. Extant literature exists on the types of organizational culture. For instance, Delic and Nuhanovic (2010) categorized organizational culture typologies. They include;

1. Culture types based on the distribution power.
2. Culture types based on management.

3. Culture types based on the strategies adopted during organizational change.

Tharp (2009) and Kulvinskienė, & Šeimienė (2009) identify four (4) distinct dominant types of organizational cultures that are widely accepted and used in most organizations. They include the clan, adhocracy, hierarchical and market cultures.

The collaboration or clan culture is described by Tharp (2009) as "an open and friendly place to work where people share a lot of themselves'. The environment created within this culture type resembles that of a family. Members of staff are loyal to the employer while the leaders play the role of advisors. Processes are familiar to all and have been the same over the years. Change is rare with this culture type" (p.4).

The creation or adhocracy culture type encourages innovation and has a business-like approach to work. Staff are encouraged to be creative even where risks are obvious. This type of culture mostly depends on business process transformations and challenges.

The control or hierarchy culture is reliant on coordination of organizational processes. Functions are carried out within organized structures and there is a dependence on policies for guidance. Procedures that are stable, efficient and provide high performance results are the main objectives of this type of culture.

With regards to the competition or market culture, "members of an organization compete and seek to meet organizational objectives in a highly competitive manner. The organization depends on and enjoys high repute and success in their market environment, putting emphasis on competitive costs and corporate leadership" (Tharp, 2009, p.5).

It is against this backdrop that ICT systems are introduced. Having in mind that, systems transform processes from the existing to new ones can eventually induce organizational cultural shift, (Indeje & Zheng, 2010), it is obvious that culture will be a challenge during analysis, development and adoption of new ICT systems.

Delic and Nuhanovic (2010) established a direct link between an organization's culture and structure when they intimate that despite the different nature of organizational cultures, it needs to be stressed that they are not mutually exclusive. Organizational culture affects the organizational structure through its connection to uncertainty, changes and risk (Hofstede, 1991). This implies that, an organizational structure that involves risk tolerance and uncertainty will have a lower level of formalization. Likewise, if the organizational culture is deeply opposed to risk and uncertainty, the organizational structure level will be higher.

Level of centralization in an organization is thus affected by the power distance. In this connection, the power distance is, as defined by Hofstede, "the level at which the members of a culture accept the fact that power is unequally distributed in the social system" (Hofstede, 1991). The power distance in organizational structure implies the high decision-making centralization level/autocratic style of leadership, while the low distance power implies decision- making decentralization/democratic style of leadership (Delic & Nuhanovic, 2010). Operating on these assumptions, organizational culture affects the structural type of an organization. Therefore, the importance of identifying cultural types as part of ICT systems development to a large extent is a determinant of what type of technology is adopted in an organization.

One of the insights for libraries in terms of culture as a strategic resource is finding that certain organizational culture types may be more desired by employees. Kaarst-Brown, Nicholson, Von Dran, & Stanton (2004) writing extensively on organizational cultures as a strategic resource for libraries, tried to establish a link between the different types of libraries that exist and the types of organizational cultures using the six dimensions of the Organizational Culture Assessment tool developed by Cameron & Quinn (1999). Kaarst-Brown *et al.* (2004) argue that academic libraries on the macro level tend to be the most formal library organizations

among the traditional library types. Academic libraries are departmentalized and tend to be heavily structured, although individual departments may be fairly flat.

Universities have a significant split in staffing between the faculty and staff. Since many academic libraries represent the staffing levels of their parent organization, library staff are often categorized into the professionals, para-professionals and non-professionals. This encouragement may be formalized through membership in one or more of these categorizations. Most often than not, this has resulted in an integrated policy structure where librarians make decisions based on their professional expertise, while the para-professional and non-professionals follow structured policies (Kaarst-Brown *et al.,* 2004)

Based on the above analysis, Kaarst-Brown *et al.* (2004) conclude that academic libraries operate a hierarchical structure and thus agitate for a restructuring of academic libraries. They argue that traditional hierarchical values have become dysfunctional and thus, need to be replaced by more clan and/or adhocracy models. The authors opine that these two structural forms would allow academic libraries the flexibility needed in different ways to address the issues that impact academic libraries, of which technological change is one.

Kaarst-Brown *et al.* (2004) further argue that the clan-based model encourages smaller teams to form around certain tasks. This model also encourages groups of individuals to be assigned to teams based on types of information sources or services, instead of separating technical services from public services. Subsequently, if there is a change in a technology, clan-based model teams could adjust more quickly than if changes have to work their way through hierarchical management levels.

Several empirical studies have been conducted that attest to the impact of culture on the adoption of innovations in organizations. Daft (2007) recounting the case of Xerox Corporation

– a leading icon of innovation and corporate success – indicates that their failure was due to a dysfunctional corporate culture that was slow to adapt.

Nusa (2015) examined the influence of organizational culture on the quality of Accounting Information System. Collecting data from 75 full-time staff in 45 private colleges in Badung and from a wide range of staff including accounting staff, chief financial and business information systems staff and vice rectors / heads of finance, the study found that organizational culture significantly affected the quality of information systems negatively. Nusa (2015) argues that this phenomenon occurs when the systems are not properly integrated into the organization's culture.

In another online study involving 189 participants consisting of government, non-profit, and social service workers from the United States, Melitski *et al.* (2010) found that there was a relationship between individual perception of organizational culture and individual willingness to adopt technology. The researchers also report that when the culture of an organization is supportive, the probability of adoption is significantly higher. Therefore, individuals who work in organizations where their work is well organized, their opinions solicited and there is constant communication on pertinent issue in the organization are more willing to take the chance of adopting a new technology.

Kulvinskienė and Šeimienė (2009) in their study of organizational culture change conducted an opinion survey of organization members using questionnaires, in-depth interviews and comparative analysis on furniture manufacturing companies. Comparing the results to a study by Cameron and Quinn (2006) which revealed a hierarchical type of culture, Kulvinskienė and Šeimienė's (2009) findings revealed that furniture manufacturing companies were gradually drifting towards the "adhocracy" culture using the organizational culture matrix, which in their view had improved the efficiency of these manufacturing companies.

Carvalho (2010) evaluated the current most important innovations in academic libraries in Delphi with the sole aim of determining if the existing organizational culture types in academic libraries promoted innovation. This technique allowed for the identification of consensus based on the judgement of well-informed library staff. To accomplish this, the researcher analyzed the results using Christensen's (2006) innovation types and Cameron and Quinn's (1999) organizational culture frameworks Competing Values Framework (CVF) and Organizational Culture Assessment Instrument (OCAI). Among his findings, Carvalho discovered that the clan culture was the most valued organizational culture type, while the adhocracy type of culture was more related with innovation and less valued by academic libraries. Based on these discoveries, Carvalho concludes that, despite the type and degree of changes that surround academic libraries, changes in academic libraries are still not focused on innovation as a strategy.

In a similar study using the Competing Values Framework (CVF), Goodman, Zammuto, and Gifford (2001) studied 276 nurses in hospital settings and found that the clan culture was positively correlated with organizational commitment, job involvement, empowerment and job satisfaction. They also found support for lower organizational commitment, job involvement, empowerment and satisfaction in hierarchy cultures.

Awan & Mahmood (2010) developed a structured questionnaire where respondents were asked to rank their preference of organizational culture while keeping in mind the present culture of their organization. The survey instrument was administered to 115 professional librarians. Hypotheses were tested through t-test, Pearson chi-square and ANOVA. The findings of the study revealed that a majority of librarians (44 %) perceived that their organizations exhibited an achievement culture. The second category of librarians (23%) perceived the culture of their organization to be bureaucratic while 11% and 22% respectively thought that their organizations displayed an adaptability and clan culture.

In a comparative study to identify the culture types of 100 higher education libraries affiliated with the Association of Research Libraries (ARL) and 123 similar-sized non-research-oriented colleges and universities, Brooks (2007) discovered that library directors and librarians are currently situated in remarkably similar hierarchical cultures, although most yearn for a clan culture. The findings further revealed that, both ARL and non-ARL library respondents yearned for market cultures when budgets are high and clan cultures when budgets are low when their annual budgets were considered as a factor.

Delic and Nuhanovic (2010) undertook an interdependence analysis of organizational structure and culture with special reference to Bosnian and Herzegovinian enterprises. Empirical evidence from their research showed that the dominant type of organizational culture in Bosnian enterprises was the role culture. Its existence was found in 66% of organizations. This was followed by the task culture among 97% of organizations. The authors attribute this partly to a national culture of ex-Yugoslavian countries often characterized by high levels of power distance and uncertainty avoidance. This, to a large extent, supports the assertion of several authors (e.g. Gerhart, 2009; Nazarian, Atkinson & Foroudi, 2017) that national culture often had a bearing on corporate culture.

2.3.3 Top Management Commitment and Support

Several authors have identified top management support as been a critical factor enabling the adoption and assimilation of advanced technologies (e.g. Chatterjee, Grewal, & Sambamurthy, 2002; Hussein, Selamat, Anom, Karim & Mamat, 2005; Kulvinskienė, & Šeimienė, 2009). Top management according to Wang (2007) relates to the "various levels of leadership" within an organization with regards to ICT use and adoption. Top management support is perceived as the involvement and participation of the executive or top-level managers of an organization in ICT activities. Laudon and Laudon (2014) are of the view that top management support ensures

that limited resources and technological expertise are allocated for the enhancement of new technology.

Organizations led by managers with unfavorable attitudes toward innovation are most likely not to develop structures and administrative processes that support the use of ICT. These organizations are also less likely to provide the necessary resources and authority for ICT success (Ghobakhloo *et al.,* 2012; Kulvinskienė, & Šeimienė 2009). In view of the above, many academic libraries are still lagging behind in terms of technology adoption due to a lack of management commitment to support technology financially or formulate pertinent policies that provide the essential infrastructure for the adoption of ICT.

Several authors (e.g. Jones & George 2014; Ng'ang'a & Nyongesa, 2012; Laudon & Laudon, 2014) posit that managers directly influence organizational culture especially given their multiple roles. For example, Jones and George (2014) state that, managers play a crucial role in the development and maintenance of an organization's culture, likening this relation to an entrepreneur who starts his/her own company.

Haag, Cummings and McCubbrey (2009) indicate that the background of the CEO of any organization influences his or her perspective and this to a large extent influences the way other managers think with regards to the use of ICT. In line with this assertion, Ramzan and Singh (2009) indicate that librarians are key stakeholders who are instrumental and thereby play a key role in adoption of ICT in libraries. Their perception of and attitude toward ICT adoption are critical in determining the levels of ICT application.

Moreover, perceived organizational culture are always found to influence the style of leadership from top management within an organization. Thus, power and role culture are observed to be strongly balanced by distribution of power and as such implied an authoritarian

leadership style while the task culture and people culture were distributed unevenly and as such implied a participative leadership style (Nikcevic, 2016).

Similarly, Rezaei, Asadi, Rezvanfar and Hassanshahi, (2009) found management style to be a contributor of organizational factors on Management Information Systems (MIS) success. However, the study also found that delegating style was more prevalent than directing style. This suggests that managers tend to adopt a delegating style to provide more warmth, cooperation and support to their staff in utilizing new systems.

Several empirical studies have been conducted on the influence of top management on the use of ICT systems. Chairoel, Widyarto and Pujani (2015) examined the influence of managerial characteristic towards IT as a factor influencing IT adoption in organizations. The findings revealed that there was a significant relationship between managerial characteristic factors and ICT adoption among Indonesia Small Medium Enterprises (SMEs). The dominant characteristic influencing IT adoption in that study were attitude toward innovation and knowledge of managers.

Similarly, a study by Sirma, Obegi and Ngacho (2014) on the factors influencing the implementation of computer-based information systems in public universities in Kenya revealed that top management support and approval were critical factors in the successful adoption of information systems.

Negative attitudes of university management on ICT was found to be an important factor that militated against the effective adoption of ICT in university libraries in Nigeria. The least ranked obstacles were the lack of awareness of ICT potentials by users and the poor attitude of staff towards library automation (Ani, Esin & Edem, 2005).

Also, the findings of Babafemi (2017) were consistent with those of Ramzan & Singh (2009) in their respective studies of Nigerian and Pakistani academic libraries. Both studies revealed

that, the most significant organizational factor affecting ICT in libraries were librarians' fear of using technology and their involvement in IT-related decision making.

On the contrary, a study conducted by Maditinos, Chatzoudes and Tsairidis (2011), among 108 ICT managers from 361 selected Greek companies, on the factors affecting the effectiveness of Enterprise Resource Planning (ERP) systems revealed that the role of top management support seems to be of less importance. This was attributed to the fact that top managers only assisted in the resolution of conflicts (a factor which was deemed not to have any direct relationship with ERP system effectiveness).

In the same vein, Dezdar and Ainin (2011) investigated the organizational factors affecting a successful Enterprise Resource Planning implementation. The results of their study indicated that there was a positive relationship between top management support and organizational impact where, "top management support is deemed crucial for ERP implementation success". (p. 920).

This supports an earlier finding by Anyaoku *et al.* (2015) that leaders were characterized positively by respondents in technology appropriating culture. This was explained by the manner in which leaders' appropriate technology to achieve organizational aims. Additionally, Anyaoku *et al.* (2015) found that respondents characterized their leaders as being positively (> 3.50) creative, dynamic, innovative, flexible, cooperative, communicative and participatory. However, the organizations were characterized negatively (< 3.50) in terms of employee initiative and trust.

Al-Fadhil *et al.* (2016) in their study found that a plethora of organizational factors influence the adoption of technology in Academic Libraries in Kuwait. Paramount amongst them were management style and a quest for prestige, lack of library culture among users, and inadequate professional library staff.

2.3.4 Human Resource Capabilities

Organizations are, fundamentally, composed of individuals. The success or failure of any ICT strategy is essentially determined by the characteristics of the human resources of the organization (O'Brien, 2003). In view of this, Jain (2013) recommends that a human resource strategy should be treated like any other strategy; such as a new innovation and should be client focused among others. This is consistent with the central proposition of the human resource theory which posits that end-users are important or perhaps have a greater influence in the adoption of ICT in organizations compared to other factors (Rossignoli, 2011). Therefore, an understanding of individual characteristics may be important in the interpretation of broader organizational trends (Grainger & Tolhurst, 2005).

Jones and George (2014) also indicate that, the human resource available to an organization ultimately affects the organizations choice of structure and culture. The authors argue that, the greater the number of employees and the more highly skilled an organization's human resource, the greater the tendency for the organization to adopt a flexible decentralized structure accompanied by a "professional work culture based on values and norms that promotes employee autonomy and self-control" (p. 211). Therefore, "if any academic library aspires to be growth-oriented, people need to be trained, motivated, rewarded, recognized and empowered to perform to their optimum capabilities" (Jain, 2013). In view of the above, Lucey (2005) intimates that there is an increased demand for skilled personnel at the expense of the unskilled which in the view of O'Brien (2003) is an enormous challenge for most organizations.

Studies on the influence of employees on organizational systems have suggested that it is important for librarians to incorporate technology into library services (Adekunle *et al.,* 2007; Adeyinka, 2012; Ramzan & Singh, 2009). However, the effectiveness of using library technology is determined by personal characteristics such as librarians' educational level, age,

gender, levels of self-efficacy, beliefs, attitude, perception and readiness to use ICT. These characteristics may either have a positive or negative consequence on the use of ICT systems in organizations (Grainger & Tolhurst, 2005; Laudon & Laudon, 2014; Spacey, Goulding & Murray, 2004).

Based on a thorough assessment of the literature, three broad themes have been identified as factors affecting the human resource of an organization's desire to use ICT. They include; self-efficacy and training. Also, based on previous studies, favorable attitudes of librarians has been ranked a major factor influencing ICT adoption in academic libraries (Damschroder *et al.,* 2009; Laudon & Laudon, 2014).

2.4.4.1 Individual Staff Characteristics

Typically, every organization employs individuals with varying ranges of ICT skills and competences. Some individuals might also be more willing to learn about ICT and the application of specific technologies compared to others who might be quite resistant in adapting to new technology (Muriithi, Horner & Pemberton, 2016; Spacey *et al.,* 2004). Spacey *et al.* (2004) looked at the factors that affected public library staff's attitudes to the internet. The authors consider the significance and systematic relationship of gender, age, organizational variables, computer skills, ICT experience and subjective norms on the use of the internet. The study hypothesized that;

1. Computer proficiency would be related to attitudes towards the internet. Specifically, superior computer skills correlate with positive attitudes and lesser skills with negative attitudes, and
2. Individuals who rated their computer skills highly, used the internet more frequently than those who did not.

Both assumptions were found to be positive, as Spacey *et al.* (2016) found that the use of ICT was positively related to demographic characteristics such as level of education and gender. Specifically, their results revealed a higher rate of ICT adoption and use among men than women. Similarly, high usage was recorded by respondents with a Ph.D. level of education (74%) as compared to 26% of people without a Ph.D.

2.4.4.2 Staff ICT Literacy

Perceived efficacy affects how people think, make choices, set goals, commit to the goals, put forth effort, anticipate outcomes from their efforts and persevere during challenging experiences (Bandura, 2006). Self-efficacy in its broadest definition encompasses individuals' estimates of their total capacity to perform in a given situation and therefore reflects a person's degree of self-confidence in performing a particular task (Hannagan & Bennett, 2004; Van der Bijl & Shortridge-Baggett, 2002). Wang (2007) narrows down this definition in relation to the use of ICT, and refers to self-efficacy as an individual's level of ICT skills and belief in their own capabilities to execute courses of action to achieve goals.

In the context of this study, self-efficacy is a significant component of most individual technology acceptance theories, as extant research has demonstrated a strong link between self-efficacy and the use of ICT. Studies have also revealed that the more confident librarians are in their abilities, the more likely they are to use ICT (Mahajan & Kaur, 2012; Owusu-Ansah & Adjei, 2015; Siddike *et al.* 2001). Therefore, employees with low levels of self-efficacy exert low effort and exhibit low level of commitment because they do not trust their ICT skills. Since employees with low self-efficacy do not believe they can accomplish ICT tasks, they do not aspire to greater goals, hence experience lower levels of satisfaction (Mahajan & Kaur, 2012).

Owusu-Ansah and Adjei (2015) in their assessment of ICT resources in polytechnic libraries discovered that a considerable number of librarians had high ICT skills and were aware of

available ICT infrastructure. The authors attribute this to the role of professional bodies like the Ghana Library Association (GLA), the Consortium of Academic and Research Libraries in Ghana (CARLIGH) and other organizations that continuously impart ICT skills through training programs for librarians in Ghana. In support of Owusu-Ansah and Adjei (2015), a study by Atiso and Adkins (2015) also revealed that librarians were conversant with the role of ICTs, despite challenges in having access to ICT.

Similarly, Siddike *et al.* (2001) in their study of factors influencing the effective adoption of ICT in university libraries of Bangladesh revealed that, lack of trained personnel and the lack of awareness of the potentials of ICT by librarians ranked top among these factors. The survey revealed that although ICT was becoming popular in Bangladesh, most library professionals still lacked ICT literacy skills. This, coupled with the lack of skilled manpower to handle computers and other information technologies, made the situation worse. The above findings confirm Anasi *et al.* assertion (as cited in Owusu-Ansah and Adjei, 2015), that while academic librarians are increasingly utilizing ICT tools for knowledge-sharing, a persisting ignorance of existing ICT knowledge-sharing platforms, limited ICT skills and an unhealthy technology environment remain major challenges.

In a self-assessment survey conducted by Adeyoyin (2005) to determine the Information and Communication Technology (ICT) literacy skill levels of library staff of Nigerian universities, the findings revealed that out of 268 professional librarians, only 87 (approximately 32%) were ICT-literate, implying that 181 (approximately 68%) professional librarians were ICT-illiterates. Of the 358 paraprofessionals in those libraries, only 28 (approximately 8%) were ICT-literate, while the clear majority, some 330 (approximately 92 %), were ICT-illiterate. Out of the 1,133 “other” staff members in the survey, a minimal 69 (6 %) staff were ICT-literate, while 1,064 (approximately 94 %) were ICT-illiterate.

Moreover, Owusu-Ansah and Adjei (2015) observe that most of the participating librarians in their assessment of ICT resources in polytechnic libraries were relatively young (between the ages of 31 to 40) and were therefore able to adopt technology. This probably accounted for the high number of librarians who had high ICT skills. The implication of this finding could be that age greatly influences librarian's acceptance and use of ICT systems.

2.4.4.3 Staff Perception and Attitudes

Perception is defined by Rue *et al.* (2012) as "the mental and sensory processes an individual uses in selecting, organizing, interpreting and responding to information he or she receives" (p.50). Attitudes, according to Jones and George (2014), highlight the specific thoughts, feelings and beliefs of employees about aspects of their jobs and the organization as a whole. The use of ICT may be perceived differently by each employee of a library. For some employees, ICT might present the prospects of facing new challenges, gaining promotions or furthering their career. For others, it might means a reduction in tasks, loss of status, the need to change jobs or, in a worst-case scenario, retire from their present job (Ragsdell, 2000). This assertion is corroborated by Lucey (2005) when she opines that the wider social costs of using ICT – such as greater stress, insecurity, unemployment, a sense of alienation from society, poorer health, and possible increase in crime – leaves much to be desired about its possible adoption for most people.

This assertion is further corroborated by Wang (2007) who also asserts that, one of the problems with technology and the workplace is that, not every individual within the organization is ready or willing to become part of a technologically based workforce. He goes further to state that employees are more inclined to resist technology once they find themselves in their "comfort zone" (p.21). It, therefore, becomes difficult for managers to re-engineer certain organizational processes such as the development of new product and services, allocating resources and making decisions. Sirma *et al.,* (2014) cite the case of Egerton

University Library where, despite a whopping 30 million shillings invested by the university into ICT infrastructure, systems were still not fully functioning. The authors add that, end-user departments still preferred to perform these tasks manually even though such services had been automated.

Research which explored the influence of the attitudes of library staff toward the use of ICT equipment found that staff attitudes towards computers were positively associated with computer use and were also predictive of the number of hours of work performed on a computer (Williams & Channaveeraiah, 2008). For example, the enthusiasm or otherwise of an individual to use ICT is reflective of a positive response to ICT or a negative source of active or passive resistance. In the view of Damschroder *et al.,* (2009), the degree to which new attitudes are positively or negatively valued heightens intention to change, which is a precursor to actual change.

Individual behavioral change is known to lead to organizational change. Hence, individual knowledge and beliefs toward changing behavior and the level of self-efficacy to make the change have been extensively studied and are deemed to be the dominating individual characteristics in theories of change (Damschroder *et al.*, 2009). These measures have been summarized to include; individuals' attitudes toward intervention and the value placed on these intervention, as well as familiarity with facts, truths and principles related to the innovation.

2.4.4.4 Staff Training and Development

Adanu (2006) opines that "human beings are often resentful of change and innovation. Training is therefore important into the new and unknown" (p. 104). In the view of Mullins (2007) training should be viewed as a strategic investment in people. Smith (2015) adds that, academic libraries should re-equip and develop the capabilities of staff with new skills and competencies that could be used to address the rapid changes in technology. With the increasing pace of

technology where current skills become obsolete within a short period of time (Rue *et al.,* 2012), training and development demonstrates a commitment to keeping employees on the cutting edge of knowledge and practice (Omotayo & Adenike, 2013). Thompson and Pwadura (2013) share a similar view when they assert that, "the Ghanaian academic library staff, find it difficult to cope with the requirements of the technological age. Training and upgrading of skills of the library staff is a necessary prerequisite for the successful adoption of ICT" (p.72).

According to Rue *et al.* (2012) training involves an employee acquiring skills or learning concepts to increase his or her performance. Training is also defined by Tajafari and Talab (2012) as, "the systematic development of employee's knowledge, skills and attitudes that are required for an organization to meet its goals" (p.7). Jones and George (2014) argue that, highly skilled personnel who internalize strong professional values and norms of behavior by virtue of their training usually desire greater freedom and autonomy and, therefore, dislike strict supervision.

Rue, *et al.* (2012) recommend several methods of training such as training on-the-job which could take the form of rotation; vestibule which requires training in environments similar to those actually used in the job; and apprenticeship training where the employee is given classroom training and computer-assisted instructions. Irrespective of the form in which staff training takes, it should be aligned with the goals and objectives of the library and also take into consideration the needs of the individual library staff (Hannagan & Bennett, 2004).

In view of this, Mullins (2007) proposes a 10-phase planned and systematic approach to effective management of training. These include;

1. A clear commitment to training all levels of staff in the organization.
2. An objective assessment of training needs in relation to the organization's vision, response to change, human resource planning and job analysis.

3. The involvement of staff throughout the process.
4. Establishing a clear set of objectives and a defined policy for training.
5. A carefully planned training programme.
6. A consideration of appropriate training methods which include internal, external and distance courses.
7. Consideration of external courses and training opportunities that are in line with the educational system.
8. Full regard for the training needs of those groups who are not currently active in the work force.
9. Establishing an effective system to review and evaluate trainings.
10. Evaluation of trainings related to objective measurable factors.

In this regard, several efforts have to be made by libraries to strategically position their human resource in terms of knowledge acquisition in ICT. Thompson and Pwadura (2013) and Adanu (2006) recount the experience of changing from a manual library system to an automated library system in the University for Development Studies and the Balme Library respectively. The authors indicate that series of trainings, comprising demonstrations and practical activities, were organized for library staff to acquaint them with the new software that were implemented. Adanu (2006) indicates that staff of the Balme Library received training in computer literacy, retrospective conversion and the use of the Millennium software.

The findings of Dezdar and Ainin's (2011) research also revealed that continuing professional development is associated with end-user satisfaction, which ultimately had an impact on the organization. The authors further indicate that, "education should encapsulate all components of the system, be continuous, and be based on knowledge transfer principles. Top managers and all system users must be fully educated so they understand how the system should be integrated into the overall organization's operations" (Dezdar & Ainin, 2011, p.921).

Banda (2011) examined librarians' attitudes towards the use of ICT in Lusaka, Central and Copperbelt provinces of Zambia. One of the key objectives of the study was to find out if librarians were trained in the use of ICT. Out of 90 librarians who took part in the survey, the general findings of the survey revealed that a majority of the librarians had formal training in the use of ICT through college or university education. Perception toward the use of ICT was, therefore, found to be very positive.

Also, Emojorho's (2013) findings in his assessment of academic libraries' knowledge management for human capital development suggest that academic library staff should have regular training or re-training in order to equip them with modern skills that could be used especially in the era of technological advancement.

Sampath and Biradar (2010), in their study of the use of ICT by librarians in college libraries in Karnataka, India, observed that even though library professionals showed positive attitudes towards the use of ICT applications, they still needed extensive and appropriate training to make use of ICT equipment. There is, therefore, a wide spread consensus in the literature that training enhances librarians' perceptions of the use of ICT (Okiy, 2010; Spacey *et al.,* 2004; Williams & Channaveeraiah, 2008).

However, training without the necessary skills or understanding of staff fears might reinforce staffs' anxieties about using ICT. Training therefore must not take place for the sake of training. Instead, it must be done to provide the necessary skills, right amount of quality information, combat fears, and promote understanding and confidence in ICT use among staff (Williams & Channaveeraiah, 2008). Practicing librarians must also be involved in training and retraining on knowledge of ICT competencies required for them to effectively manage the resources in academic libraries (Asante & Alemna, 2015; Okiy, 2010).

Laudon and Laudon (2014) assert that failure on the part of management to train end users to be comfortable with the new technology and fully understand its potential use is often "sacrificed or forgotten in ICT systems development projects" (p. 624). Mullins (2007) proffers that, there must be a genuine commitment, most especially from top management and throughout all levels of the organization, in order to achieve this.

2.3.5 Physical ICT Infrastructure

The strategy of an organization necessitates aligning its corporate objectives with its available resources. This, therefore, requires reconciling the business the organization it is involved in with the allocation of resources, since resources support the aims and goals of the organization (Hannagan & Bennett 2004).

Similarly, using ICT systems in organizations tend to be expensive and, therefore, requires adequate resources (Ghobakhloo *et al.,* 2012). Academic libraries, thus, need to be resourced with adequate funds, infrastructure and technical expertise, as well as the appropriate technological training to support the long-term use of ICT (Tait, Martzoukou, & Reid, 2016; Tiwari & Sahoo, 2013).

Wang (2007) indicates that, fiscal concerns for ICT require a definition and measurement of the operational and investment cost of every ICT project. In view of this, Ankrah (2014) indicates that the Total Cost of Ownership (TCO) of an organization's technology assets should not only be limited to the initial cost of computer hardware and software, but also costs of long-term investments such as hardware and software upgrades, maintenance, technical support and training.

Networked computers, dedicated staff, library hardware, software, availability and constant supply of electricity, affordable bandwidth and good technical support are all examples of some essential resources and infrastructure that need to be put in place before adopting ICT (Adanu,

2006; Akpan & Madu, 2014; Ghobakhloo *et al.,* 2012; Kyobe, 2011). The employee's knowledge is important to the organization's capability and basic infrastructural requirements, and are a prerequisite to the effective use of ICT (Kyobe, 2011).

Additionally, the physical facilities of the work environment need to be catered for. Facilities such as air-conditioners, proper lighting, appropriate and comfortable chairs, and computers that conform to the use of ICT must be made available. In support of this, Chandrasekar (2011) asserts that poorly designed workstations, unsuitable furniture, lack of ventilation, inappropriate lighting, insufficient safety measures, and lack of personal protective equipment are all impediments to the use of ICT.

Research proves that there is a strong relationship between physical ICT infrastructure and the use of ICT in organizations. However, a high percentage of these studies have reported the decline or non-availability of resources to facilitate the use of ICT in academic libraries (e.g. Majid, Anwar & Eisenschitz, 2001; Nzivo, 2012; Iwhiwhu & Okorodudu, 2012). The situation is even more precarious in academic libraries in developing countries and in Ghana for that matter as a result of dwindling funds for academic libraries. Based on a thorough review of the literature, the researcher examines this trend using two identified factors: technical support and physical ICT infrastructure of an organization.

Laudon and Laudon (2010, p.191) define Information and Communication Technology infrastructure as "the shared technology resources that provide the platform for an organization's specific information system applications. These infrastructure consist of the shared technology resources that provide the platform for the organization's specific information system applications, physical devices and software applications required to carry out tasks in the entire organization". The use of ICT in organizations which thrives on IT infrastructure components consist of computing platforms used to provide computing services

(including computer hardware, software, data management technology), as well as networking and telecommunications technology, and technology services (Ankrah, 2014; Laudon & Laudon, 2010).

Muriithi *et al.* (2016) found a positive relationship between the use of ICT and the availability of technical support as noted in their findings where several respondents lamented about the poor technical support and unreliable services, as evidenced in frequent internet downtimes and the length of time it took to get a problem sorted out. Based on the findings, the authors conclude that users are more willing to use technology if they know that help (if needed) will be available. Muriithi *et al.* (2016), therefore, recommend that universities provide qualified, reliable and adequate technical support, guided by policies regarding the qualifications, number and work definition of the required technical support team.

Rezaei *et al.,* (2009) also found a strong relationship between ICT infrastructure and organizations, with ICT infrastructure ranked the third contributor to ICT success. They argue that the use of ICT is more likely to succeed when ICT infrastructure (hardware and software) and connectivity arrangements exist, as ICT requires the deployment of sophisticated technology.

In view of this, Ankrah (2014) recommends that managers and information systems specialists pay critical attention to hardware capacity planning and scalability to ensure that their firms have enough computing power for current and future needs. Ankrah adds that, organizations also need to balance the costs and benefits of building and maintaining their own hardware and software versus outing or using on-demand computing models (2014).

For example, Muriithi *et al.* (2016) undertook a study to determine the factors contributing to the adoption and use of ICT within research collaborations in Kenyan universities. The findings of the study revealed that sites and materials that require payment for use and internet downtime

led to problems of internet use in over 75% of respondents. This reflects issues in availability of and access to ICT resources, as some study participants further lamented about the lack of cable or wireless networks to support internet connectivity.

Hussein *et al.* (2005) also examined the influence of infrastructural resources on ICT systems quality, information quality, perceived usefulness and user satisfaction among employees of four agencies in Putrajaya, Malaysia. Using a sample of four hundred and fifty (450) participants drawn from these organizations, the researchers report that adequate resources; including finance, staff and time were important criteria in determining ICT success. They further indicate that organizations with sufficient funds and people tend to succeed in implementing their goals and objectives as compared to organizations with less funds and fewer people. Also, according to the authors, the Malaysian government appeared committed to providing improved ICT services, as it had allocated a huge amount of money for national ICT projects (Hussein *et al.*, 2005).

Irrespective of the methods of service delivery needed for academic libraries to meet their vital role in the community and enable them sustain and develop the use of ICT, it is important that these libraries meet the demands of the academic institutions they serve. To achieve this mandate, academic libraries require adequate and appropriate resources in a timely manner.

2.4 Summary and Conclusion of Literature Reviewed

In sum, this chapter contains relevant research that are directly related to the study area. From the above discussions, there is consensus in the literature on the organizational factors which may impede or support the adoption and use of ICT systems. These factors include the appreciation of ICT by an institution's librarian and library management. Other elements include the management decision making structure and existing culture of the organization. Also, adequate human and infrastructural resources to a large extend affect the efficient

utilization of ICT. Capacity building, and training for librarians is also noted to greatly affect the adoption of ICT (Gagnon *et al.,* 2012; Macharia & Pelser, 2014; Onoriode *et al.,* 2012).

However, a review of the literature also revealed that organizational factors that affect the use of ICT systems in organizations vary in identity and strength. One can, therefore, deduce from the experiences of some organizations that, although these factors may intertwine and overlap, some organizations may be better equipped to effectively use ICT than others.

Moreover, from the literature reviewed on the organizational factors affecting ICT systems in academic libraries, a number of gaps were observed. First, many of the studies done on organizational factors that impact ICT systems were conducted in other fields and disciplines such as banks, hotels and catering agencies, institutions of higher learning, health services and construction firms. As such, there are few studies on the topic conducted within an academic library environment.

Also, many of the studies were conducted in more developed countries with dearth of such empirical studies conducted in African countries like Botswana, Kenya, Malawi and Nigeria. There were hardly any studies on the organizational factors affecting ICT development and use within the Ghanaian academic library setting. A study within an academic library setting in Ghana is, therefore, imperative to fill this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the strategy that was employed in determining the organizational factors affecting ICT systems in academic libraries. It also describes the methodology and techniques that were employed in the study. The methodology enabled the researcher to present a comprehensive approach showing how the study was carried out.

It commences with the research approach, followed by the selection of case, and selection of subjects which includes the population of the study, sampling procedure and sample size. The design and application of the data collection tool employed in the study is also explained.

Quantitative analysis techniques which includes the method of data analysis, data presentation procedure used are also described. Finally, ethical considerations underpinning the study are also discussed (Neuman, 2007; Powell & Connaway, 2004).

3.2 Research Design

A research design refers to the procedural framework within which a research is conducted (Malhotra & Birks, 2007). According to Sekaran (2003) a research design is set up to decide on, among other issues, how to collect data, analyze and interpret them, as well as how to provide an answer to the problem.

The research design also includes the method of collecting, measuring and analyzing data gathered. Thus, it involves all the processes by which respondents are chosen and reached for the study. McGivern (2006) indicates that the purpose of a research design is to structure the research so that it delivers the evidence necessary to respond to the research problem as accurately, clearly and unequivocally as possible. The research design employed in this study is the quantitative research methodology.

The purpose of this research was to determine the "organizational factors affecting ICT systems in academic libraries". The choice of a quantitative research design was because of the descriptive nature of the study. Quantitative approaches have also been found to be suitable for analyzing data about people's attitudes, opinions, behavioral patterns, feelings and beliefs (Orodho & Kombo, 2002; Saunders, Lewis & Thornhill 2009; Spata, 2003). The survey method was therefore adopted to establish associations between study participants and their environment as was the case with this study. The survey method was employed to aid in the collection of quantitative data for analysis and the results obtained also gave a high level of reliability (Kumar, 2010).

Data gathered from survey research was used for descriptive purposes only. As much as survey methods are relatively inexpensive, quick and useful in gathering large amounts of useful information, Spata (2003) observes that survey research is deficient because its usefulness to make predictions or explain causes is limited. Surveys are inflexible in that they require the initial study design (the tool and administration of the tool) to remain unchanged throughout the data collection. Finally, when working with surveys, the researcher must also ensure a high response rate from the select sample (Sapsford, 2007) for best results.

3.3 Selection of Case

The unit of analysis in this study is the organization which in this case is the University of Ghana, Balme Library. The selection of case should be guided by a methodological justification (Rohlfing, 2008; Sekhon, 2004). Purposive sampling was, therefore, employed in selecting the Balme Library due to the methodological requirements of this study. John and Christensen (2004) argue that purposive sampling relies on the decision of the researcher, based on some well-known criteria. The justification to purposively select the University of Ghana, Balme Library stems from the following reasons:

a) It has common attributes of the population of all academic libraries. It is also well established and ranked among the top university libraries in the world with respect to its massive ICT infrastructure.

b) The Balme Library has undertaken a considerable number of ICT projects, notable among which are the Carnegie ICT projects. It boasts of an automated library with state-of-the-art technology in carrying out tasks such as cataloguing and classification of information resources, preparation of bibliographies, circulation, staff management, official correspondence within and outside the library, inventory-taking and acquisition. Therefore, it has the basic characteristics and attributes of an automated library system which provides typical ICT services to faculty and students. It has all the units required in an academic library most of which employ ICT in their core services.

c) The Balme Library is the central library of the University of Ghana and as such is open to larger populations than the other libraries within schools, institutes, faculties, departments, Accra City Campus, and halls of residence.

d) Also, the researcher has been acquainted with the library under study for the past six (6) years. As a regular patron of the Balme Library, the researcher has observed with keen interest some organizational practices that impede the efficient use of ICT at the Balme Library.

e) Kothari (2009) also asserts that, the choice of sampled case(s) to a large extent is dependent on factors such as budgetary constraints and timeline. Therefore, given the limited resources and time required to complete the research, and for purposes of proximity and convenience, the researcher deemed it expedient to select the University of Ghana, Balme Library for the study.

3.4 Selection of Subjects

The selection of participants for the study covered the population of the study, sample size and sampling techniques. The researcher needed an appropriate population list or sampling frame to enable him select the sample size.

3.4.1 Population

The concept of population is fundamental to every research. In the scholar's view, a population may be defined as a set of persons or objects which possess at least one common characteristic. Fraenkel *et al.* (2015) also explain that, a population is a group of interest to the researcher to whom the researcher would like to generalize the results of a study. Survey research, according to Fraenkel *et al.* (2015), thus attempts to collect and analyze data from different units to represent a chosen population.

Characteristics of the population must be precisely defined lest findings made about the sample, to represent the population based on insufficient detail, could be misleading and incorrect. The nature of organizations also requires the inclusion of all the various stakeholders of the internal environment of an academic library (here in the Balme Library). Internal stakeholders of an academic library include management and all categories of staff. The staff of the Balme library can be categorized under Professional, Para-professionals and Non-professional librarians. Professionals are made up of staff between the ranks of Librarian and Assistant Librarians, Para-Professionals comprise of staff within the rank of Chief Library Assistants to Library Assistants while the Non-Professionals constitutes the Junior Library Assistants, clerical/administrative and other auxiliary staff such as the drivers and security personnel.

The Balme Library has a total of 106 staff that comprise of 10 professionals, 54 para-professionals and 42 non-professionals. This study, however, limited itself to only the academic library staff of all ranks which includes senior members, and senior and junior staff whose

duties in one way or the other involve the use of ICT equipment. Non-professionals such as security personnel, messengers, drivers, laborers and cleaners were, therefore, exempted from the study.

Excluding this category of non-professional library staff, 75 library staff constituted the population and were therefore targeted for the study. Senior members constitute the management of the library. They take decisions regarding procurement, installation and all other processes that lead to the adoption and use of ICT systems. Although senior members do not directly provide services to students and faculty, the ICT systems inform their analysis of service provision and resource allocation. Also, senior members monitor other staff using the systems and, as such, are mostly responsible for resolving all issues that may arise from the use of these systems. Senior staff directly use the systems to carry out their routine tasks. For example, cataloguing of library materials, acquisition of new materials, lending and borrowing services all require the use of ICT systems. Senior staff also assume a supervisory role in ensuring that subordinates adhere to the proper usage of ICT systems in the library. Junior staff are often considered auxiliary to the senior staff. They are also usually found in most of the core units of the library including cataloguing, reference and electronic support units. They also therefore, maximize the use of ICT.

The researcher arrived at the decision to select these categories of respondents because they are major stakeholders of ICT systems in the library and as direct users, they exert a lot of influence on these systems. Also, as beneficiaries and custodians of ICT systems, these respondents are directly in charge of the utilization, monitoring, maintenance, and evaluation of these facilities. They also oversee the implementation of these ICT equipment and as such are in a better position to provide the information required for the study.

3.4.2 Selection of Sample (Sample Size and Technique)

A sample is a select subset of a population chosen by a process with the aim of investigating properties of the parent population, whereas the sample size is the number of individuals included in the investigation (Everitt, 2006). Tagoe (2009) defines sampling as the process used in selecting a sample or miniature of the population. Neuman (2006) adds that, the goal of sampling is to get a representation of a unit from a much larger population such that the researcher can generalize about the larger population based on the sample.

Since organizational factors affect individual staff decisions to use ICT, the researcher deemed it expedient to include all (75) library staff (senior members, senior and junior staff) as participants in the study. This implied that the entire population of interest became the sample size for the study. Table 3.1 presents a summary of the total number of study participants and their designations. This excludes security personnel, cleaners, porters, laborers, drivers, binders in the junior staff category and other administrative staff.

Table 3.1: Designation and Population of Library Staff

Designation	Target Population	Sampling size
Senior Members	10	10
Senior Staff	30	30
Junior Staff	35	35
Total	**75**	**75**

Source**: **Balme Library Master Staff List, 2018

The researcher's decision to use the entire population was justified considering the target population under study was too small to sample. However, statistically, a sample should be significant to enable generalizations, within measurable limits of accuracy, to the selected population. Leedy and Ormrod (2010) also assert that where the population for the study is less

than 200, the researcher could consider using the entire population for the study. This method enabled the researcher to elicit information from the total study population regarding the research topic. This assertion is further buttressed by Kothari (2009) who asserts that, for small populations, the sample ratio needs to be large to capture a sample that is truly representative of the population. However, when the population to be sampled is large, the sample ratio needs to be small to provide an appropriate sample that can be managed by the researcher.

Another reason for using the entire population was to eliminate the situation of hedging, that is, the low return of questionnaires (Ankrah, 2014). An entire population that is surveyed is called a census. Census sampling is the process of collecting data from every unit of a population under study rather than choosing a sample (Harding, 2006; Kothari, 2003). Parker and Gallivan (2004) assert that, a census survey is a more effective sampling technique when the results of the survey is meant for planning strategies, since the results of the survey are representative of sub-groups within the population under study.

An advantage of a census survey is that every employee has an opportunity to participate. This sampling technique ensures that no one person from the target population feels left out. Also, results from a census survey can be used to understand organizational structure and highlight departmental results which is one of the objectives of this study. This is because there is a greater chance of getting responses that are representative of all sub-groups within the organizational structure when all employees take part in the study (Parker & Gallivan, 2004). However, a disadvantage of the census survey employed in this study is that it is expensive in terms of printing and difficult to undertake with regards to distribution and data collection. Also, including an entire population of interest in a survey process requires additional questionnaire administration time (Harding, 2006).

The final sample respondents obtained consisted of employees from eight (8) departments of the Balme Library where there was greater use of ICT equipment. These include the cataloguing, acquisition, reader services and students' reference, as well as the Africana, electronic resources and digitization departments.

3.5 Mode of Data Collection

Both primary and secondary sources of data were used in the study. Primary data is perceived as new data because it is directly obtained from the research participants of the study (Collis & Hussey, 2013). There are various approaches for collecting primary data, including the use of questionnaires, face-to-face interviews and observations. The data from primary sources were collected from the field through the use of a questionnaire. Panneerselvam (2004) notes that secondary sources of data can either be obtained internally or externally. Secondary data were thus obtained from journal articles, print media documents and books.

3.6 Research Instrument

A research instrument refers to the device(s) used to collect data or the means through which a researcher quantifies the variables in a study (Hsu & Sanford, 2010; MacDonald & Headlam, 2011). This could be in the form of a written list of questions to which answers are recorded by respondents (Kumar, 2010). There are various approaches for collecting data, including the use of questionnaires, face-to-face interviews and observations. However, in conformity with survey research, a questionnaire was the main instrument used in gathering data for this study.

This was however complemented by unobtrusive observations. Unobtrusive observation (Bryant et al., 2009; Aabø and Audunson, 2012; Mandel, 2013) was used to ascertain the use and availability or otherwise of some physical ICT infrastructure across some departments that use ICT at the Balme Library.

This process was employed to corroborate some of the statements made by research participants, especially with regards to ICT equipment and facilities that are required to support the use of ICT at the Balme Library. This enhanced the validity of responses gathered from the questionnaire. According to Cauvery *et al.* (2007), unobtrusive observation has the following advantages;

a) The researcher can acquire information without influence because he keeps himself away from the activities of the group.

a) Non-participant observation gives the observer an impartial status and thereby objectivity is achieved.

b) Observer remains a stranger and gets advantage of the situation and learns the weakness as well as make minute observations without attachment.

The use of a questionnaire as the major data collection instrument for this study facilitated the collection of data by asking sampled library staff to respond to the same set of questions on the "organizational factors affecting ICT systems at the Balme Library". The use of questionnaires, therefore, provided a way of gathering data from respondents in a standardized way, either as part of a structured interview or through self-completion (Lewin, 2005).

3.6.1 Questionnaire

Prior to designing the questionnaire, a thorough review of literature was conducted to determine and categorize concepts, themes and variables used in similar studies. As such, relevant secondary sources such as abstracts, books, policy documents, reports, print media documents and prior research works were consulted for information on the topic under investigation. The questions posed were developed from recurring themes that emerged from the extant literature that the researcher consulted.

The questionnaire contained both structured and unstructured questions to elicit specific responses for quantitative analysis. In all, study participants answered a total of twenty-two (22) mostly closed-ended questions. The average time spent on completing each questionnaire by respondents was 14 minutes. Adapting this strategy enabled the researcher to establish a set of scale measurements by formatting the questionnaire into a complete instrument for communication and subsequently collating the raw data from respondents.

The study used perceptual measures to capture data on the organizational factors affecting ICT systems success. The questionnaire employed in the study was divided into six (6) broad sections with some sections having sub-sections. There were also a variety of questions posed in the questionnaire. Some questions were informational and focused on the demographic characteristics of the research participants. For instance, in section 'A', questions 1-6; while questions in section F of the questionnaire were designed to elicit views and perceptions. However, for most questions in the second to fifth sections, a categorical scale ("yes" or "no") was used to measure the lead questions of some sections of the questionnaire. In most cases, the researcher used a closed-ended 5-point Likert scale, e.g. 'strongly disagree', 'disagree', 'partly agree', 'agree' and 'strongly agree' where respondents were mostly required to rate the extent to which they agreed or disagreed with some positive or negative statements. The questions were posed in a manner that would elicit responses on the effects of these five (5) internal aspects of an organization that need to be aligned with regard to the use of ICT systems. Using the Likert scale, therefore, enabled the researcher to measure the intensity of views from respondents which was used as a basis for conclusion based on the findings.

The factors considered for the study were identified based on McKinsey's 7S model, namely: structure, systems, skills, style, and staff. The following are the five (5) broad themes of the questionnaire based on the objectives of the study which were derived from the concepts of the

adapted theoretical model described in chapter one. The themes used in developing the questionnaire include;

a) Organizational structure
b) Organizational culture
c) Top management commitment
d) Human resource capabilities
e) Physical ICT infrastructure

In the final section of the questionnaire, open-ended question were used to solicit further comments and other considerations respondents may have that were not covered in earlier sections of the questionnaire. The draft questionnaire was first submitted to the researcher's project supervisor and co-supervisor for their inputs. The suggestions from the supervisor(s) assisted the researcher in making one or more partial changes to the questionnaire in order to ensure more consistency and clarity.

Questionnaires had the advantage of targeting a wider audience, as compared to interviews, thereby enabling the researcher to gather large amounts of data on the topic under study, (Kumar, 2010). It also enabled respondents to provide candid responses as their anonymity was assured. Despite the benefits of the questionnaire as a survey tool employed in this study, it was disadvantageous as it could not be customized to individuals, unlike other methods of data collection such as interviews (Spata, 2003). It, therefore, did not provide the researcher an opportunity to collect additional information through probing, prompting and seeking clarity on some responses provided by respondents (Burton & Steane, 2004; Sapsford, 2007). Thus, the findings of the study missed out on some important insights that could have added some depth to the study.

3.7 Pre-Testing

To make sure that the instrument for the data collection was appropriate, a pre-test was conducted. Pre-testing was aimed at ensuring consistency and clarity of the questions asked and also to test the validity and reliability of the questionnaire used for the study. It also enabled the researcher to familiarize himself with the questions to be asked. Ruane (2005) asserts that, researchers need to administer their questionnaires to a small group of people who closely resemble their research population before the actual study. In line with this assertion, a pre-test of the survey instrument(s) was conducted at the University of Professional Studies, Accra (UPSA) Library. The UPSA library was selected because it has the attributes and characteristics of a typical academic library.

Moreover, the UPSA library had equally embarked on the deployment of ICT, although not on as massive a scale as the Balme Library. The UPSA library has an electronic support unit that stocks very large volumes of computers, mostly connected to the internet, which users' access for research purposes (UPSA, 2017). This made library staff at the UPSA library reliably informed about ICT systems. More importantly, the proximity of the two academic libraries made it possible for instruments designed to be tested on time, considering the time constraints of the researcher. Pre-testing of the survey instrument was carried out from 20th to 22nd March, 2018. Given the few staff of the UPSA library, all library staff working in the electronic resource section of the UPSA Library were sampled for the pre-test of the questionnaire. In all, ten (10) questionnaires were administered.

The objective for pre-testing was to ensure consistencies and clarity of the questions asked and also to have a direct sense of how the questionnaire would be answered. It was also to determine the suitability of the survey instrument for the study and check questionnaire wording, question sequencing, and the questionnaire layout. Pre-testing was to further ensure that questions were appropriate enough to elicit the required responses needed for the study. Respondents selected

for the pre-test were asked to make suggestions and recommendations that could help to improve the questionnaire (Cooper & Schindler, 2008; Creswell, 2003).

Some ambiguities in the questions were easily identified by staff of the UPSA library, and these questions were simplified to make them clear and easy to understand. For example, respondents suggested the use of "Professional Qualification" instead of "Position", "20 years and above", and not "18 years and above" for age range of respondents, among others. The attention of the researcher was also drawn to the use of several technical jargons in the questionnaire. In the view of one of the sampled respondents for the pre-test, the use of words and phrases such as "strategy", "align", "organizational structure", "organizational culture", etc. were beyond the scope of some junior library staff and could, therefore, make it difficult for them to understand and provide appropriate responses. In light of this, the researcher modified the questionnaire by providing working definitions where jargons were used and also gave examples. In some instances, the researcher replaced jargons with simpler terms that could easily be understood by all categories of library staff. Lastly, the majority of respondents sampled for the pre-test indicated that the questionnaire was too lengthy. The researcher thus had to take out some questions and merged others that looked repetitive while using observations to make up for questions that could not be asked. Some staff also made inputs on questions they felt should have been captured in the questionnaire but were not.

The recommendations from staff of UPSA Library who seemed well versed in the subject matter were useful in reframing, modifying and, in certain instances, changing some questions. This ultimately led to a complete restructuring of the original questionnaire which was intended to be used for the study.

3.8 Administration of Research Instrument

As noted earlier, questionnaires were used to gather the relevant primary data needed for the study. An introductory letter from the Department of Information Studies was made available to the Librarian of the University of Ghana, Balme Library on the 3rd of March, 2018. Approval from management of the Balme Library to commence the research was given the same day. However, administration of questionnaire, began on the 26th of March, 2018. Questionnaires for the study were administered within the premises of the Balme Library. The researcher spent almost a month administering and retrieving questionnaires.

Fraenkel *et al.* (2015) are of the view that, data in a survey can be collected either by self-administration, via phone, internet, e-mail or face-to-face interviews. The researcher adopted the strategy of going through the various departments of the Balme Library to administer the questionnaire himself. The advantages of administering the questionnaire by the researcher himself were;

a) It enabled a higher response rate.

b) It offered the researcher the opportunity to clarify aspects of the questionnaire where respondents were in doubt (Fraenkel *et al.,* 2015).

In each instance, permission to administer questionnaires was sought from the unit, departmental or sectional head. The nature of the study was also thoroughly explained to the various heads of departments, sections and units. With the aid of a master staff list obtained from the administrator of the Balme Library, the researcher was able to identify target populations in the selected departments. Prior to handing out the questionnaires to the library staff, the researcher introduced himself and expressed his gratitude to the participants for their time and willingness to take part in the research. The purpose and significance of the study was then explained to library staff who were willing to participate in the study. Participants were

duly reminded of their rights and roles in the research, including the right to withdraw at any time without consequences. Participants were further assured that the study was meant only as an academic exercise and that their privacy was assured.

In some departments where the researcher administered the questionnaires, library staff were busy carrying out their duties during the administration process. This was due to the fact that it was the middle of the semester, hence, the peak moments of library patronage. Despite their busy schedules, some staff made time to complete the questionnaire instantaneously, and scheduled appointments were made with other staff for times suitable to them. However, to minimize the length of time needed to administer questionnaires, the researcher adopted the 'drop and pick' strategy in questionnaire administration. Questionnaires were either deposited with the heads of departments to be later distributed to target respondents or deposited with the respondents themselves.

The majority of library staff were very cooperative and supportive of the researcher by completing their questionnaires to enable him to achieve the objectives of the study. Other staff declined to partake in the study. The researcher tried convincing these category of staff as to why the study would be beneficial to them but did not compel anyone of them to take part. Eventually, some changed their minds and answered the questionnaire, though grudgingly.

The researcher retrieved administered/ completed questionnaires from respondents at the end of each week. Retrieved questionnaires were collated and cross-checked by the researcher to ensure consistency, accuracy and completeness. In all, 70 out of 75 participants were contacted and they completed all questionnaires, thus giving a response rate of 97%.

This high response rate is as a result of the meticulous process the researcher adopted in administering the questionnaires. The researcher personally handed most of the questionnaires to library staff and data was collected during the "peak period" of library services that is around

the middle of the semester. The peak period is a season of the academic calendar when the library receives more patronage. Around this period, most students are usually preparing for their mid-semester examinations and this therefore required the availability of more library staff to render services to these students. This confirms the assertion of Musoke and Naluwooza (2017) that, usage of the library tends to be heavier during examination periods compared to the recess periods. Furthermore, the researcher's acquaintance with the Balme Library was another critical contributory factor.

Despite this, responses could have been higher but for the fact that some of the target respondents were either on their annual or study leave and therefore were not present to partake in the study. In some instances, several follow-ups were made by the researcher to retrieve some questionnaires from library staff but was unsuccessful.

3.9 Analysis and Presentation of Data

Data analysis involves preparing data for analysis, conducting different scrutiny, moving deeper and deeper into understanding the data (Creswell, 2012). Jones (2012) posits that, quantitative analysis aids in the collection of reliable evidence, deals with uncertainty, uses analytical techniques to identify patterns and anomalies, and sets out a logical framework to make causal inferences.

Quantitative data collected were statistically analyzed with the help of the Statistical Package for Social Sciences (SPSS) version 25.0 (Nie, Dale & Hall, 1970). The researcher's decision to use SPSS was influenced by his ability to utilize the software in analyzing data as compared to other data analysis tools like Stata and Excel. Advantages of using the SPSS software includes the fact that the software is up-to-date and has a variety of new functionalities and features for analyzing data. SPSS is also easy to use, produces excellent data output that

requires no editing and provides a support manual for challenges encountered during the software use.

Having settled on the decision to use the Statistical Package for Social Sciences software stemming from the above reasons, the following processes were followed meticulously in analyzing the data gathered from the survey:

a) Retrieved questionnaires were first collated and cross-checked by the researcher to ensure consistency, accuracy and completeness.
b) Completed questionnaires were then edited and sorted out, after which they were cleaned for incomplete responses. Outliers were also eliminated from the sample at this stage.
c) Copies of questionnaire were then numbered serially to help in identification, in the event of errors in the data entry process.
d) A manual coding scheme was subsequently designed by the researcher by assigning numbers to the responses provided on the questionnaire. This was done to translate the categorical responses and facilitate entry into the SPSS software.
e) The coded responses were entered manually into the SPSS software by the researcher and cross-checked after initial entry.
f) Data entered into the SPSS software were used for statistical analysis and further tested for assumptions of sample size, multicollinearity and the presence of outliers.

Analyzed data was summarized according to the study's specific themes which include;

a) Demographic profile of respondents
b) Organizational structure
c) Organizational culture

d) Top management support and commitment

e) Human resource capabilities

f) Physical ICT infrastructure

Results of the analysis were generated in the form of descriptive statistics such as frequencies, means and percentage values and the results illustrated using only tables. In some few cases, the Pearson's chi-squared test which is used to as a means of comparing the goodness of fit, homogeneity and independence was used in establishing the relationship between variables.

Lastly, a ranking of the organizational factors was further carried out using the Friedman test. The Friedman test as a non-parametric statistics was employed to analyze mean ranked data to determine which "organizational factors" were more influential in determining library staffs' decision to use ICT at the Balme Library (Alvo & Philip, 2014). The results formed the basis for analysis and discussion in relation to findings of similar previous studies as postulated in the literature in chapter two.

3.10 Ethical Considerations

Ethical considerations are an integral part of every research and attention to ethical issues in research is increasingly recognized as essential (Christians, 2000; Denzin & Lincoln, 2005; Fine, Weis, Weseen, & Wong, 2000). In view of this, the researcher adhered to the following ethical rules before, during and after conducting research.

a) A letter of introduction from the Department of Information Studies was presented by the researcher to the Librarian of Balme Library to permit entry into the research setting to conduct the study.

b) The nature of the study was comprehensively explained to prospective participants and their consent to participate in the study was sought. In effect, consent forms designed by the researcher were signed by participants prior to their participation in the study.

c) No participant was compelled to take part in the researcher. However, where a participant agreed to take part in the research, the anonymity and confidentiality of the participant was guaranteed.

d) Participants were duly reminded about their rights and roles in the research, including the right to withdraw at any time without consequences.

e) Finally, all sources cited in the study were duly acknowledged to avoid plagiarism.

In summary, the research was guided by all ethical requirements in academic research as outlined in the School of Graduate Studies, University of Ghana guidelines and the American Psychological Association (APA) ethical principles and code of conduct in research.

3.11 Chapter Summary

This chapter focused on the approach employed in the study as well as the research method, and justification of why a cross-sectional survey was chosen. The chapter also discussed the process of case selection and fieldwork for the study, data collection and analysis. Thus, quantitative methods were used to collect and analyze data. Questionnaires were used in gathering data for the study using a census approach. Data were analyzed using the SPSS software, and descriptive statistics such as frequencies, means and percentages were used to summarize and describe data in the form of tables.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

The study set out to investigate the organizational factors affecting ICT systems at the University of Ghana, Balme Library. This chapter presents analyzed data and their findings as collected from selected staff of Balme Library. The chapter begins with a summary of the statistics of the demographic profile of respondents who participated in the study. The remaining sections is organized under the major themes as outlined in the objectives of the study. This includes;

1. Organizational Structure
2. Organizational Culture
3. Top Management Commitment and Support
4. Human Resource Capabilities
5. Physical ICT Infrastructure

Below are the findings and related interpretations.

4.2 Demographic Profile of Respondents

Demographics are the statistical data of a population that show the age, gender and other biographical details of respondents. Demographic characteristics of respondents included in the survey were gender, department, age, highest academic qualification, category of staff and length of service at the university library. These variables provided a contextual background to the study. The results from the demographic data are presented from subsections 4.2.1 to 4.2.6.

4.2.1 Gender of Respondents

Respondents were asked to indicate their gender. Table 4.1 depicts the gender of respondents who took part in the study.

Table 4.1: Gender of Respondents

Gender	Frequency	Percent (%)
Male	46	65.7
Female	24	34.3
Total	**70**	**100.0**

Source: Field data, 2018

From the results in Table 4.1, it can be observed that more than half of the respondents 46 (65.7%) were male and 24 (34.3%) were female. It can, therefore, be concluded that the majority of staff of the Balme Library are male.

4.2.2 Age of Respondents

Age was one of the demographic variables in this study. Table 4.2 depicts the age of respondents who took part in the survey.

Table 4.2: Age Range of Respondents

Age	Frequency	Percent (%)
20-29	5	7.1
30-39	36	51.4
40-49	16	22.9
50-60	13	18.6
Total	**70**	**100.0**

Source: Field data, 2018

As shown in Table 4.2, a majority of the respondents (36) representing 51.4% were within the age bracket of 30 and 39 years. This was followed by staff within the age brackets of 40-49 and 50-60 years. They constitute 16 (22.9%) and 13 (18.6%) of the entire population respectively. Respondents in the 20-29 years age group formed the lowest percentage (7.1%). Thus, it can be concluded that a majority of respondent were within the middle age bracket of 30-39 years old.

4.2.3 Sections of Library where Staff Work

Data was collected on respondents' respective departments within the Balme Library. The focus of the study was on sections of the Balme Library that witnessed a high presence and usage of ICT equipment. Responses are shown in Table 4.3.

Table 4.3: Sections of the Library where Staff Work

Section/Department	Frequency	Percent (%)
Cataloguing	11	15.7
Acquisitions	9	12.9
Reader Services	9	12.9
Student's Reference (S.R.L)	9	12.9
Africana	7	10.0
Electronic Resources	16	22.9
Digitization	7	10.0
U.N Library	1	1.4
Development Information Center (D.I.C)	1	1.4
Total	**70**	**100.0**

Source: Field data, 2018

From Table 4.3, it can be observed that the majority 16 (22.9%) of the respondents worked at the various Electronic Resources Units of the Balme Library which include the Research, Knowledge and Faculty Commons. This could be attributed to the increasing patronage of electronic resources and also due to the fact that Electronic Resource Units were gradually becoming the heart of research and learning at the University of Ghana, Balme Library. In addition, 11 (15.7%) library staff were stationed at the cataloguing department. It could be inferred from the analysis that the cataloguing section has a relatively high number of respondents because of its critical role in processing books for patrons' use. The Acquisitions, Readers Services and Students' Reference sections recorded the next highest categories of nine respondents each, representing 38.7% of total respondents. Additionally, 7 (10.0%) respondents work at the digitization and Africana sections respectively, whiles 2 respondents were also at the United Nations Library and Development Information Center. The implication

of these findings is that, the data is representative of the various sections and departments of the Balme Library that utilize ICT as can be observed from Table 4.3. It also speaks to the comprehensive nature of the study design for this research.

4.2.4 Highest Academic Qualification of Respondents

Typically, library staff working in the ICT sections must have some form of education. The rationale behind this question was therefore to know the highest academic qualification attained by respondents. Table 4.4 shows responses from library staff.

Table 4.4: Highest Academic Qualification

Highest Qualification	Frequency	Percent (%)
Ph.D.	1	1.4
MPhil/Masters/MBA	19	27.1
BA/BSC	34	48.6
Diploma/HND	10	14.3
DBS	2	2.9
WASSCE/SSCE	4	5.7
B.E.C. E	-	-
Total	**70**	**100.0**

Source: Field data, 2018

As shown in Table 4.4, the majority (34 staff) representing 48.6% of respondents had a Bachelor's degree. Again, it was observed that 19 (27.1%) respondents had either a Master's or an MPhil degree while 14.3% of respondents had a Diploma or a Higher National Diploma (HND). Additionally, 4 (5.7%) respondents had Senior High School Certificates. However, just one (1) respondent had attained a PhD whiles two (2) respondents were DBS holders. However, the implication of the findings in general is that, all respondents had attained some level of education and were therefore knowledgeable enough to respond to questions of the survey.

4.2.5 Categories of Respondents

Questions that sought to categorize library staff were also asked by the researcher. The findings are shown in Table 4.5 below.

Table 4.5: Categories of Staff

Designation	Frequency	Percent (%)
Senior Member	8	11.4
Senior Staff	30	42.9
Junior Staff	32	45.7
Total	**70**	**100.0**

Source: Field data, 2018

From Table 4.5, it can be observed that, the majority of respondents (32) were junior staff representing 45.7 %, while (30) representing 42.9% of the respondents were senior staff. Additionally, eight (11.4%) of respondents who participated in the study were senior members from across some departments of the Balme library. Based on the responses, it could be concluded that most respondents were in the junior staff category. The implication of this finding is that the responses were representative of the views of the majority of library staff who were either in the senior or junior staff category.

4.2.6 Length of Service

Work experience is very important in every organization. The number of years that staff have been working at the library plays a significant role since most tasks such as cataloguing, classifying, acquisitions and reference services which require the use of ICT are repetitive. Besides, the nature of some questions required that library staff have the relevant working experience at the Balme Library to respond to them. Respondents were therefore asked to indicate how long they had been working at the Balme Library. Table 4.6 shows their responses.

Table 4.6: Length of Service at the University Library

Length of Service	Frequency	Percent (%)
Less than 5 years	10	14.3
6-10 years	29	41.4
11-15 years	18	25.7
More than 15 years	13	18.6
Total	**70**	**100.0**

Source: Field data, 2018

The results in Table 4.6 suggest that 13 (18.6%) participants have been working in the university library for more than 15 years. However, the majority of respondents, 29 (41.4%) indicated they had served in the university library between 6-10 years. Another 18 respondents representing 25.7% of total library staff indicated they had worked at the Balme Library between 11-15 years. Generally, the results imply that the majority of library staff have worked at the Balme Library for a considerable number of years (between 5-15 years) and were therefore in a position to provide credible information for the study. In addition, their wealth of experience over the years working at the Balme Library provided rich detail that added to the validity and reliability of the data collected.

4.3 Organizational Structure

The first objective of the study was to assess the efficiency and effectiveness of the present organizational structure of the Balme Library on the use of ICT systems. Under organizational structure, the study sought to assess elements such as the level of formalization and centralization in relation to the use of ICT systems at the Balme Library.

Respondents were therefore asked to indicate the extent to which they agreed with certain statements on the Balme Library's organizational processes. The statements sought staffs' views with regards to the level of formalization and centralization as a way of determining the

coordinating mechanisms in the Balme Library's organizational structure. The results on the kind of management-decision making structures and how these structural attributes affect the use of ICT at the Balme Library are presented below.

4.3.1 Level of Formalization

Formalization is the extent to which an organization's policies, procedures, job descriptions, and rules are written and explicitly articulated. Formalized structures, therefore, are those in which there are many written rules and regulations. These structures control employee behavior using written rules, with limited employee discretion. Fundamentally, formalization speaks to the desire for less ambiguity, and more efficiency and goals particularly suited to ICT (Dess, *et al.,* 2005; Gibson *et al.,* 2011; Mullins, 2007). Survey statements thus sought to determine the level of formalization in the Balme Library. These statements are presented below.

Formal control is based on:

1. Respecting strict rules and precisely defined procedures.
2. A vast number of written documents regulating library staff behavior
3. Superiors monitoring all activities of subordinates in the library

Data from the view of library staff on the level of formalization at the Balme Library are presented in Table 4.7.

Table 4.7: Responses on the Level of Formalization

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Statement 1	-	2(2.9%)	14(20.0%)	27(38.6%)	27(38.6%)
Statement 2	1(1.4%)	17(24.3%)	9(12.9%)	14(20.0%)	29(41.4%)
Statement 3	-	1(1.4%)	18(25.7%)	28(40.0%)	23(32.9%)

Source: Field data, 2018 ***N=70***

The results from Table 4.7 demonstrates that, regarding the first statement – formal control is based on "Respecting strict rules and precisely defined procedures", a significant percentage of respondents in terms of aggregate, 77.2% (38.6% agree and 38.6% strongly agree) agreed with the statement. 27 (20.0%) were ambivalent in their responses while 2 (2.9%) respondents disagreed with the statement. The results indicate that an overwhelming majority of respondents believe formal control at the Balme Library is based on respecting strict rules and laid down procedures.

For the second statement – formal control is based on, "A vast number of written documents regulating library staff behavior", the responses suggest that respondents had divergent views with regards to this statement. However, the majority 29 (41.4%) of respondents believe formal control is based on a vast number of written documents. 17 (24.3%) of them however disagreed. Similarly, 14 (20.0%) respondents agreed while 9 (12.9%) were undecided with just 1 respondent strongly disagreeing. The findings suggest that a significant number of respondents share the same view that formal control at the Balme Library is based on written policies which seeks to regulate staff behavior.

The results of the third statement which also sought to find out the form of monitoring and supervision were consistent with the findings of the first two statements. Over (72.9%) of respondents in terms of aggregate either agreed or strongly agreed that formal control was based on superiors monitoring the activities of subordinates. Meanwhile, 25.7% of respondents were neutral to this statement while one respondent disagreed. Overall, the findings suggest that the majority of respondents agree with this statement.

The findings from the above survey statements suggest that the Balme Library is highly formalized with strict rules and procedures regulating library staff behavior as well as close supervision of subordinates by superiors which resulted in a lot of bureaucracies. While the use

of ICT is supposed to lead to organizational efficiency by reducing interruptions in workflow and administrative cost, the findings reveal that the use of ICT at the Balme Library did not decrease the negative effects associated with high levels of formalization. This is because staff have limited authority to resolve patrons' problems and are constrained by stringent rules that outline a limited amount of discretion with regards to the use of these systems. Ultimately, a formalized structure results in reduced motivation and job satisfaction as well as a slower pace of decision making resulting in a lack of innovativeness.

4.3.2 Level of Centralization or Decentralization

Centralization refers to the degree to which decision making takes place at upper levels of an organization. An organization is considered more centralized if top managers make decisions with little input from subordinates. On the contrary, where lower level employees provide input or actually take part in decision-making, the organization can be considered to be decentralized (Robbins & Coulter, 2009). Extant literature suggests that ICT can either facilitate the centralization or decentralization of an organization depending on how it is used.

Library staffs' participation in decision making at the Balme Library was investigated. A series of statements were posed to determine the level of centralization or decentralization at the Balme Library. These statements include;

1. All decisions in the library are made by top management, without involving or consulting subordinates.
2. Subordinates are not included in setting organizational goals.
3. Communication in the library is strictly made by the top-down approach

The responses to these statements are presented in Table 4.8.

Table 4.8: Responses to Statements on Level of Centralization/Decentralization

Level of Centralization	Strongly Disagree	Disagree	Partly Agree	Agree	Strongly Agree
Statement 3	4(5.7%)	17(24.3%)	11(15.7%)	12(17.1%)	26(37.1%)
Statement 2	4(5.7%)	19(27.1%)	28(40.0%)	9(12.9%)	10(14.3%)
Statement 3	-	-	11(15.7%)	32(52.9%)	22(31.4%)

Source: Field data, 2018 ***N=70***

Table 4.8 indicates that, as far as the majority of respondent are concerned, decisions within the library do not seem to taken by staff at all levels, as 38 (54.2%) of staff in terms of aggregate strongly agreed and agreed with the first statement which sought to find out if, "Decisions in the library are made by top management, without involving or consulting subordinates". Also, 21 respondents constituting 30.0% of the sample size disagreed and strongly disagreed with this statement. Lastly, 11 respondents representing 15.7% were neutral.

Information on respondents' inclusion in the setting of organizational goals was also sought. Of the 70 respondents, 28 (40.0%) remained neutral to this statement, 19 (27.1%) disagreed and 19 (27.2%) either agreed or strongly agreed. Considering the views of the respondents on this statement, it could easily be deduced that most respondents were not included in setting organizational goals.

To ascertain whether or not – "Communication in the library is strictly made by the top-down approach", the breakdown of the results revealed an overwhelming support as 84.3% (52.9% agree and 31.4% strongly agree) of respondents agreed with this statement. There were no disagreements, with just 11 (15.7%) respondents neither agreeing nor disagreeing to this statement. Predictably, the findings indicate communication occurs between hierarchically positioned persons at the Balme Library.

The findings on the level of centralization reinforce the view that the Balme Library is highly centralized based on findings of the level of formalization. The implication of this finding in terms of centralization at the Balme Library is that, while a centralized structure enables management of the Balme Library to obtain information using ICT more quickly and accurately to aid in decision making, a centralized organization does not enable lower and middle level managers to stay better informed about the organization's overall situation which includes the nature of current problems and issues. Furthermore, centralization did not allow library staff to be more globally optimized in their work. The responses on the level of formalization and centralization are however suggestive of a mechanistic organizational structure at the Balme Library.

4.4 Organizational Culture

This objective looks at aspects of the organizational culture that support ICT driven change. Culture is a complex pattern of beliefs, expectations, ideas, values, attitudes, and behaviors shared by members of an organization (Jones & Dewitt, 2001). The philosophy of management and the organization's culture play a major role in determining the consequences resulting from applying technology (Mehri-Nejhad, 2003).

4.4.1 Organizational Norms and Values

In an organization, values and norms inform organizational members about what goals they should set and how they should act to reach these goals. Thus, values and norms perform the same function as formal goals, rules or direct supervision (Jones & George, 2014). ICT facilitates the sharing of beliefs, values and norms because it allows for the quick and vivid transmission of rich information between people and sub-units.

Given this objective, there was the need for a cultural understanding of ICT usage at the Balme Library. To this effect, a series of statements were posed to determine the present values and

norms underpinning the Balme Library. Using some characteristics of the types of organizational cultures as proposed by Cameron & Quinn (2011) in diagnosing an organization's culture, the researcher sought respondents views on the extent to which they agreed or disagreed with the following statements:

1. My organization values creativity and innovation so employees can exercise discretion and take initiatives in their day-to-day activities.
2. My organization is results-based and focuses on getting things done through competition among employees.
3. My organization is formalized and structured with lots of procedures, rules and regulations that decide what people do.
4. My organization is a very friendly, fun and sociable place to work where employees share a lot about themselves.

The responses of library staff are presented in Table 4.9.

Table 4.9: Responses to Statements on Organizational Values and Norms

Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Statement 1	29 (41.4%)	10 (14.3%)	2 (2.9%)	9 (12.9%)	20 (28.6%)
Statement 2	40 (57.1%)	20 (28.6%)	5 (7.1%)	5 (7.1%)	-
Statement 3	6 (8.6%)	5 (7.1%)	4 (5.7%)	12 (17.4%)	43 (61.4%)
Statement 4	-	25 (35.7%)	15 (21.4%)	30 (42.9%)	-

Source: Field data, 2018 ***N=70***

Innovative behavior in the use of ICT depends on whether an organization develops a supportive culture reflective of an adhocracy or performance culture. In view of this, respondents were asked if the work culture of the Balme Library allowed them to be creative

and innovative. The majority constituting 29 (41.4%) strongly disagree, 20 (28.6%) strongly agree, 10 (14.3%) disagree whiles 9 (12.9%) and 2 (2.9%) agree and were undecided respectively.

A follow-up statement sought to investigate if the work culture of the Balme Library was one that was results-based and focused on getting things done. Results from Table 4.9 revealed that the majority of 55 respondents (78.8%) either strongly agree or agree that the work environment of the Balme Library was one that was results-based and focused on getting things done through competition among employees.

Table 4.9 indicates that for the statement "The work environment is formalized and structured with lots of procedures", a significant number of library staff 78.8% (61.4% strongly agree and 17.4% agree) strongly agreed with the statement. Additionally, 4 (5.7%) staff remained neutral whiles 14.2% (8.6% strongly disagree and 7.1% disagree) strongly disagreed that the Balme Library was highly formalized with lots of procedures.

Lastly, respondents were asked if they perceived the work environment as spontaneous, fun and sociable. A slight majority 30 (42.8%) were of the view that the work environment was spontaneous and fun while 25 (35.7%) felt otherwise. The remaining 15 (21.4%) were undecided. This statement which is characteristic of a clan culture revealed to a large extent the existence of the clan culture at the Balme Library. The findings of the study revealed that there was an aspect of all the four forms of values and norms as proposed by Cameron and Quinn (2011) at the Balme Library. However, the bureaucratic culture seemed to be the most dominant culture which was characterized by procedures. This was closely followed by the clan culture.

4.5 Top Management Support and Commitment

Organizations led by managers with unfavorable attitudes toward innovation are most unlikely to develop structures and administrative processes, or provide the needed resources and support for ICT success (Ghobakhloo *et al.,* 2012; Kulvinskienė, & Šeimienė 2009).

To find out whether top management of the Balme library were committed and supportive of the strategic use of ICT, a series of statements were posed to library staff. Their level of agreement or disagreement with these statements were indicative of the level of commitment from top management which inadvertently affects the use of ICT systems in the library. The statements to which the library staff were asked to respond include:

1. Top management has a very positive perception and attitude towards the use of ICT in your library.
2. Top management commits the necessary resources required to ensure the continuous use of ICT in the library.
3. Top management motivates and rewards performance of staff who adjust to ICT advancement in your library.
4. Top management is quick to address problems and complains that arise from the use of ICT in your library.

The responses of library staff are presented in Table 4.10.

Table 4.10: Level of Commitment and Support from Top Management

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Statement 1	-	8(11.4%)	6(8.6%)	37(52.9%)	19(27.1%)
Statement 2	-	7(4.9%)	5(3.5%)	39(27.3%)	19(12.9%)
Statement 3	14(20.0%)	38(54.3%)	9(12.9%)	9(12.9%)	-
Statement 4	-	10(14.3%)	10(14.3%)	34(48.6%)	16(22.9%)

Source: Field data, 2018 ***N=70***

Table 4.10 indicates that for the first statement- "Top management has a very positive perception and attitude towards the use of ICT in your library", a significant percentage of library staff (52.9% agree and 27.1% strongly agree) agreed with the statement. However, 8 staff (11.4%) disagreed that top management has a very positive perception and attitude toward the use of ICT at the Balme Library. The findings suggest that the majority of staff perceived senior level executives of the Balme Library as exhibiting positive attitudes with regards to the use of ICT.

For the second statement- "Top management commits the necessary resources required to ensure the continuous use of ICT in the library", majority of respondents (12.9% strongly agree and 27.3% agree) agreed.

Table 4.10 further suggests that more respondents (54.3% disagree and 20.0% strongly disagree) disagreed with the statement that top management motivates and rewards ICT advancement than those who agreed who constituted 9 (12.9%) of total respondents. Similarly, 9 (12.9%) respondents were undecided. The findings, however, suggest that there were no reward packages to serve as catalysts for the advancement and improvement of ICT at the Balme Library.

The last statement on whether top management is quick to address problems and complaints that arise from the use of ICT at the Balme Library revealed that most library staff, constituting 71.5% (48.6% agree and 22.9% strongly agree), were of the view that management was quick to address issues that arise from the use of ICT.

Generally, the responses of library staff suggest that top executives of the Balme Library were very much committed to ensuring the continuous use of ICT systems at the Balme Library. This commitment was exhibited through their positive attitudes and the provision of necessary support in terms of resources to ensure the continuous development and use of ICT systems at the Balme Library. The only thing lacking was management's ability to motivate and reward the performance of staff who adjust to ICT advancement at the Balme Library in order to increase patronage by all categories of library staff.

4.6 Human Resource Capabilities

Characteristics of an organization's human resource including their knowledge and competencies in ICT, attitudes, and intention toward the use of ICT affect ICT acceptance and adoption (Fisher & Howell, 2004; Spacey *et al.,* 2004). The adoption and use of new technologies in academic libraries, therefore, often calls for new strategies in managing an academic library's human resource.

The objective of this study was to assess the human resource capabilities available to support the use of ICT at the Balme Library. This section reveals the analysis and findings of library staffs' attitudes, skills, competencies and training in ICT.

4.6.1 Willingness to use Technology

Technology has become an integral part of most organizational tasks. Typically, every organization employs individuals with varying ranges of ICT skills and competencies. It is common that while some people may find technology exciting and are often enthused by the

use of technological gadgets, others might be quite resistant to adapting to technology (Spacey *et al* 2004; Muriithi *et al.,* 2016). For instance, some Library staff found it difficult to adapt to a computerized system and therefore preferred to do things manually. It was, therefore, imperative to find out staffs' willingness to use technology. The results are depicted in Table 4.11.

Table 4.11: Willingness of Respondents to Use ICT

Willingness to use ICT	Frequency	Percent (%)
Hesitant	13	18.6
Neutral	11	15.7
Enthused	46	65.7
Total	**70**	**100.0**

Source: Field data, 2018

Analyzing the responses, Table 4.11 reveals that 46 (65.7%) respondents were often enthusiastic about using ICT equipment whereas 13 (18.6%) responded otherwise. 11 (15.7%) respondents were ambivalent indicating they were neither enthusiastic nor hesitant to use ICT systems. The findings therefore suggest that the majority of library staff were enthusiastic about technology and were willing to apply it in their assigned duties.

Despite the fact that a small percentage of respondents indicated they are "hesitant" in using technology, it is important to consider this number serious owing to the fact that this category of library staff have assigned duties that rely on the use of ICT. Further sensitization on the advantages of ICT could possibly encourage enthusiasm among staff who are hesitant in using technology.

4.6.2 Attitude of Respondents towards the Use of ICT

According to Spacey *et al.* (2004), people's perception of technology are articulated in terms of their attitudes regarding that technology. This assertion is corroborated by Lucey (2005)

who opines that, the wider social costs of using ICT – such as greater stress, insecurity, unemployment, a sense of alienation from society, poorer health and possible increase in crime – leaves much to be desired about its possible use. For ICT systems to be efficiently utilized, it is suggested that end-users (herein library staff) need to have positive perceptions and attitudes toward technology. In line with the above arguments, the researcher posed a series of statements reflecting positive and negative attitudes as a means of determining staffs' general attitudes towards the use of ICT systems. The results are presented in Table 4.12.

Table 4.12: Respondents Attitudes Toward the use of ICT

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
As more technology is introduced, my work gets harder	16(22.9%)	38(54.3%)	7(10.0%)	5(7.1%)	4(5.7%)
Extensive use of ICT has created job fears in me	20(28.6%)	38(54.3%)	6(8.6%)	5(7.1%)	1(1.4%)
ICT has added more responsibility to my work schedule	13(18.6%)	36(51.4%)	11(15.7%)	7(10.0%)	3(4.3%)
ICT offers more efficient ways to carry out my duties in the library	6(8.6%)	6(8.6%)	5(7.1%)	35(50.0%)	18(25.7%)
Use of computer creates health problems for me	3(4.3%)	17(24.3%)	30(42.9%)	17(24.3%)	3(4.3%)

Source: Field data, 2018 ***N=70***

It is evident from Table 4.12 that the majority of staff of the Balme Library generally had favorable attitudes and perceptions toward the use of ICT. This probably accounts for their willingness to use ICT equipment as discovered earlier. However, this is not unanimously the case, as a proportion of staff hold mixed attitudes and a minority expressed negative opinions

and attitudes towards the use of ICT in the library. For example, 77.2% (54.3% disagree and 22.9% strongly disagree) disagreed that the more technology was introduced, the more difficult their work became. This was followed by 12.8% (7.1% agree and 5.7% strongly agree) who also acknowledged that the introduction of technology made their work harder. The findings indicate that the majority of respondents' perceive that technology makes their work easier.

Spacey *et al.* (2003) intimate that the use of ICT at the work place can be frightening and intimidating for some people. Respondents were asked if the extensive use of ICT equipment created any fears in them. The majority of 82.9% (54.3% disagree and 28.6% strongly disagree) disagreed with this statement while 6 (8.6%) strongly agreed and agreed with the second statement. The findings suggest that the majority of staff at the Balme Library were not intimidated by the use of ICT in the Library.

The results of the third statement which sought to determine if ICT had added more responsibility to the work schedule of library staff were as follows: 51.4% and 18.6% disagree and strongly disagree, respectively, 11 (15.7%) were undecided, while 10.0% and 4.3% agree and strongly agree, respectively. The findings indicate that the majority of staff did not perceive the use of ICT as an added responsibility.

Table 4.12 further indicates that for the statement, "ICT offers more efficient ways to carry out my duties in the library", a significant percentage, 75.7% (50.0% agree and 25.7% strongly agree) library staff agreed with this statement. Others, constituting 6 (8.6%) strongly agreed whiles 6 (8.6%) were not sure.

The final statement sought to find out if library staff perceived that the use of computers creates health problems for them. A majority of 30 participants (42.9%) remained neutral with this statement. In a similar vein, Table 4.12 depicts that 20 (28.6%) disagree and strongly disagree with this statement while another 20 (28.6%) respondents agree and strongly agree. It could be

deduced that a cross-section of staff had some health concerns with regards to the use of ICT per their responses.

4.6.3 Level of ICT Literacy Skills

To utilize the growing range of technologies, one needs to acquire and practice the skills necessary to use them (Wang, 2012). The more confident librarians are in their abilities, the more likely they are to use ICT. Therefore, employees with low levels of self-efficacy exert low effort and exhibit low levels of commitment because they do not believe in their capability to use ICT systems. Owing to the increasing use of ICT in academic libraries, librarians' computer competency is an important factor affecting their capability to use ICT equipment successfully (Adeyoyin, 2005). For this reason, respondents were asked to rate their knowledge, skill and competency in the use of technology related equipment. Their responses are shown in Table 4.13.

Table 4.13: Respondents Level of skills and Knowledge in ICT

Rating	Frequency	Percent (%)
None	0	0
Little	4	5.7
Moderate	11	15.7
Substantial	33	47.1
In-depth	22	31.4
Total	**70**	**100.0**

Source: Field data, 2018

The responses were encouraging as a majority of library staff were found to be advanced IT users. Out of the total of (70) respondents, the majority (47.1%) indicated that they had some substantial knowledge in the use of ICT equipment while 22 (31.4%) stated that they had in-depth knowledge in the use of ICT equipment. Similarly, 11 (15.7) respondents indicated they were moderately capable of using ICT while 4 (5.7%) had little knowledge of ICT use.

4.6.4 Level of Knowledge in ICT Applications and Services

In view of the above responses, a follow up question was posed to determine library staff competency and knowledge in some technologies used in the library. Respondents were therefore asked to indicate their level of familiarity with some Library ICT services, applications and equipment. The results of this finding are depicted in Table 4.14.

Table 4.14: Ratings of Knowledge in some Library ICT Applications and Services.

ICT service/Tool/App	Good	Average	Poor	Don't Use
Applications (e.g. Installation, webpage designs, troubleshooting	20(28.6%)	10(14.3%)	30(42.9%)	10(14.3%)
Web tools and Services (e.g. Blogs, Social media etc.)	49(70.0%)	11(15.7%)	7(10.0%)	3(4.3%)
Library Software Packages (e.g. Sierra, CDS/ISIS)	23(32.9%)	32(45.7%)	10(14.3%)	5(7.1%)
Technologies (e.g. Bar codes scanner)	35(50.0%)	25(35.7%)	6(8.6%)	4(5.7%)
Information Retrieval and Storage	45(64.3%)	9(12.9%)	6(8.6%)	10(14.3%)

Source: Field data, 2018 ***N=70***

From the results in Table 4.14, it could be observed that majority of respondents 30 (42.9%) indicated they were not very conversant with ICT services such as trouble shooting, web page designing and installations. This could be attributed to the very technical nature of such services.

Also, 49 (70.0%) intimated they were well vexed when it comes to the use of web tools and other social media tools such as Facebook and WhatsApp. This could be attributed to the growing influence of the Wikis, blogs and web 2.0 technologies. For library software such as the Sierra software, the Majority 32 (45.7) indicated they were averagely knowledgeable in their use.

Also, half of the respondents 35 (50.0%) indicated they were familiar with barcode technologies. This findings could be as a result of the fact that these software were mostly limited to some sections of the libraries which did not afford staff from other departments to familiarize themselves with such software. Lastly, 45 (64.3%) further indicated they were good at information retrieval, 9 (12.9%) were average while 6 (8.6%) intimated they were poor at information retrieval.

4.6.5 Staff Training and Development

Training and staff development in the context of increasing technology use in academic libraries is one way of solving the challenges academic libraries face regarding the effective use of ICT. Given the increasing pace of technology where current skills become obsolete within a short period of time (Rue *et al.,* 2012), training and development demonstrates a commitment to keeping employees on the cutting edge of ICT knowledge and practice (Ankrah, 2014; Omotayo & Adenike, 2013; Rue, Byars & Ibrahim, 2012).

Ultimately, a lack of training in ICT will result in limited use and lack of success in reaping the benefits that come with ICT. In view of this, respondents were asked to indicate if they had received any form of training on the use of ICT systems in the last three years. This investigation is important because continuous and regular training has the potential to increase the use of ICT among library staff. The responses are shown on Table 4.15.

Table 4.15: Participation of Staff in ICT Training and Development Programs

Mode of Acquisition	**Frequency**	**Percent (%)**
Yes	59	84.3
No	11	34.7
Total	**70**	**100.0**

Source: Field data, 2018

A majority of library staff 59 (84.3%) indicated they had received some form of training in ICT. However, 11 constituting (34.7%) of respondents also stated that they had not received any form of training in the use of ICT over the last three years. This suggests that the training provided on the use of ICT systems was either irregular or did not involve all categories of library staff. However, for ICT to be successful in an institution like the Balme Library, training is a prerequisite and must be regular for all categories of staff especially those who work in sections of the library where ICT is heavily utilized. Without regular training, there would be no optimum utilization of ICT systems. Furthermore, trainings must be comprehensive and involve every staff who uses ICT in their line of duty. It is therefore worrying that some staff had not received any form of training or development programs in the last three years.

4.6.6 Categories of Staff by Training and Development

Given the above findings where a cross-section of staff indicated that they had not received any form of training, the researcher sought to find out if training programs were organized for some category of staff to the neglect of others. In effect, categories of staff were cross tabulated by participation in ICT training programs and the results presented in Table 4.16.

Table 4.16: Responses of Categories of Staff by Training and Development

	Staff Training and Development in ICT		
Category	**Yes**	**No**	**Total**
Junior Staff	21 (30.0%)	11 (15.7%)	32 (45.7%)
Senior Staff	30 (42.9%)	0 (0%)	30 (42.9%)
Senior Member	8 (11.4%)	0(0%)	8 (11.4%)
Total	**59 (84.3%)**	**11 (15.7%)**	**70 (100.0%)**
	Chi-square=15.498, DF=2, Significance=0.000		

Source: Field data, 2018

The Table shows that, of the 59 (84.3%) respondents of categories of staff who indicated they had received training, 30 (42.9%) were senior staff, 8 (11.4%) were senior members and 21

(30.0%) were junior staff. This implies there is a significant difference in staff training and development between the categories of library staff and those who received training. The responses are representative of the entire population of staff by categorization. This is obvious as the majority of staff who indicated they had not received any training were all in the junior staff category.

4.6.7 Effectiveness of ICT Training and Development Programs

Williams and Channaveeraiah (2008) posit that training must not take place for the sake of training but instead, must be adequate and effective to provide the necessary skills, be of the right amount, be of good quality and promote understanding and confidence in the use of ICT. Based on the above assertion, the researcher posed a follow up question to library staff who had received some form of training. This was to ascertain the effectiveness of the training received in upgrading their knowledge, competency and skills in the use of ICT. Table 4.17 provides a summary of staffs' responses.

Table 4.17: Effectiveness of ICT Training and Development Programs

Response	**Frequency**	**Percent (%)**
Very effective	13	22.0
Effective	11	18.6
Ineffective	32	54.2
Very ineffective	3	5.1
Total	**59**	**100.0**

Source: Field data, 2018 ***N=59***

Out of 59 library staff who responded to this question, the majority of 59.3% (54.2% ineffective and 5.1% very ineffective) indicated that the training they had received was ineffective in upgrading their skills and competencies in the use of ICT. Meanwhile 40.6% (22.0% very effective and 18.6% effective) also indicated that the training they had received was effective.

The findings suggest that a majority of staff were dissatisfied with the amount of training they received as they considered the training programs mostly ineffective.

4.7 Physical ICT Infrastructure

According to Ankrah (2014) the use of ICT systems and its components such as hardware, software and adequate network requires long-term investment. In effect, only academic libraries that are adequately resourced can sustain the use of ICT. Moreover, the use of ICT to support the mission and goals of academic libraries involves an investment in people (expertise) and physical assets which is dependent on adequate financial resources.

Essential ICT infrastructure include ICT laboratories, computers, laptops, projectors and internet installations, appropriate furniture, availability and constant supply of electricity, and uninterrupted bandwidth (Adanu, 2006; Akpan & Madu, 2014; Ghobakhloo *et al.,* 2012; Kyobe, 2011). For this reason, the researcher sought to assess the extensiveness of physical ICT infrastructure available to support the continuous use of ICT systems at the Balme Library. This was mostly in relation to the availability and adequacy of hardware, software, internet connectivity and technical support at the Balme Library.

4.7.1 Availability of Physical ICT Infrastructure

Investing sufficient financial resources has the potential to increase ICT use in organizations. This section sought to ascertain the availability of relevant physical facilities and ICT infrastructure across the various departments of the Balme Library. In view of this, respondents were asked to indicate their level of agreement or disagreement with the following statements:

1. Equipment such as computers, scanners, printers and photocopiers are mostly modern and functional.
2. Software and applications, I use in my department are mostly standard and up-to date.
3. There is reliable and uninterrupted internet connection in the library.

4. There is reliable and uninterrupted power supply in the library.
5. Appropriate furniture (desk and chairs) are often provided to suit new technologies.
6. A congenial space and environment is provided to support the use of ICT equipment in my department.

Tables 4.18 shows the responses from library staff.

Table 4.18: Availability of Physical ICT Infrastructure

Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Statement 1	-	6(8.6%)	8(11.4%)	34(48.6%)	22(31.4%)
Statement 2	12(17.1%)	26(37.1%)	5(7.1%)	10(14.3%)	17(24.3%)
Statement 3	1(1.4%)	37(52.9%)	9(12.9%)	16(22.9%)	7(10.0%)
Statement 4	-	6(18.6%)	6(18.6%)	40(57.1%)	18(25.7%)
Statement 5	2(2.9%)	1(1.4%)	20(28.6%)	34(48.6%)	13(18.6%)
Statement 6	-	5(7.1%)	3(4.3%)	53(75.7%)	9(12.9%)

Source: Field data, 2018 ***N=70***

With regards to the first statement, Table 4.18 indicates that 80.0% (48.6% agree and 31.4% strongly agree) of respondents agreed with the statement that equipment such as computers, scanners, printers and photocopiers are mostly modern and functional. Additionally, 6.8% disagreed while 11.4% of respondents were undecided. This outcome implies that a majority of respondents were in support of the statement, suggesting that there has been a massive investment in computers and other hardware infrastructure at the Balme Library in recent times.

Statement 2, however, shows that the majority of library staff (37.1 % disagree and 17.1% strongly disagree) disagreed that software and applications used in their department are mostly standard and up-to date. Meanwhile 38.6% (24.3% strongly agree and 14.3% agree) expressed

divergent views by agreeing with the statement. Finally, 5 (7.1%) respondents were not sure. Overall, the results show that the majority of respondents are of the view that software and applications used in their various departments are obsolete.

Similarly, a significant majority of respondents (52.9% strongly disagree and 1.4% disagree) strongly disagreed with statement 3 which sought to find out if there was reliable and uninterrupted internet connectivity at the Balme Library. However, 32.9% (22.9% agree and 10.0% strongly agree) agreed with the statement. This finding implies that library staff were not satisfied with the level of internet connectivity which is relevant for carrying out several tasks in the library. It can therefore be deduced that breaks in internet connectivity is one of the major challenges respondents at the Balme Library face in their use of ICT.

With regards to statement 4, 82.8% (57.1% agree and 25.7% strongly agree) of respondents agreed that there was reliable and uninterrupted power supply at the Balme Library while 6 (18.6%) respondents disagreed. Similarly, 6 (18.6%) respondents neither agreed nor disagreed with the statement. This finding reveals that a substantial number of respondents surveyed believe that power supply is adequate to facilitate the use of ICT equipment in the library.

Facilities such as appropriate and comfortable chairs are needed to improve the use of ICT. In view of this, Chandrasekar (2011) asserts that unsuitable furniture is an impediment to the use of ICT since inappropriate chairs and tables could lead to health-related problems. The penultimate statement sought respondents' views on the statement, "Appropriate furniture (desk and chairs) are often provided to suit new technologies".

Table 4.18 shows that, although 67.2% (48.6% agree and 18.6% strongly agree) of respondents agreed that chairs and tables conform to the present technologies, 4.3% (2.9% strongly disagree and 1.4% disagree) strongly disagreed that there were appropriate furniture (desk and chairs) available to suit new technologies used in the library. This confirms that a significant number

of respondents believe that the furniture (chairs and computer desks) in the library is befitting of an ICT environment.

The results of the final statement – "A congenial space and environment is provided to support the use of ICT equipment in my department" revealed that, an overwhelming majority of 62 (88.6%) respondents either agreed or strongly agreed that a congenial atmosphere and space was provided to support the use of ICT systems.

Generally, library staffs' perspectives indicate that most of the physical and infrastructural resources required to support the continuous use of ICT at the Balme Library were available, which could be attributed to the high level of commitment from top management. Despite these findings, two major infrastructural challenges which impede the efficient utilization of ICT in the Balme Library emerged from the analysis. They include;

- Obsolete library software and applications used by most departments.
- Inadequate bandwidth which led to constant interruption in internet connectivity.

4.7.2 Adequacy of Physical ICT Infrastructure

Organizational ICT systems are expensive and require adequate resources to function (Ghobakhloo *et al.,* 2012). Academic libraries, thus, need to be adequately resourced to deliver good ICT services. In view of the above, library staff were the ideal respondents for this question, as they directly utilize ICT-related equipment and facilities. Staff were, therefore, asked to indicate if they felt the physical ICT infrastructure available were adequate in terms of quantity. The responses from library staff are analyzed and presented in Table 4.19. Responses were based on a five-point Likert scale (Highly Inadequate, Inadequate, Moderate, Adequate and Highly Adequate) where one represents 'very inadequate' and five is 'highly adequate'. Responses are shown below.

Table 4.19: Adequacy of Physical ICT Infrastructure

Items	Highly Inadequate	Inadequate	Moderate	Adequate	Highly Adequate
		Physical Facilities			
Appropriate space/room	10(14.3%)	5(7.1%)	14(20.0%)	32(45.7%)	9(12.9%)
Appropriate furniture	-	5(7.1%)	15(21.4%)	38(54.3%)	12(17.1%)
		ICT Infrastructure			
Telecommunication facilities (e.g. phones, facsimile)	16(22.9%)	18(25.7%)	20(28.6%)	16(22.9%)	-
Hardware infrastructure (e.g. Computers, printers, scanners etc.)	3(4.3%)	6(8.6%)	14(20.0%)	37(52.9%)	10(14.3%)
Networking infrastructure (e.g. LANs, Data Ports, cables etc.)	3(4.3%)	6(8.6%)	21(30.0%)	29(41.4%)	11(15.7%)

Source: Field data, 2018 ***N=70***

The current Balme Library building was put up during the establishment of the University of Ghana. The Balme Library was initially setup to accommodate manual books. In the advent of automation in the library, it is expected that adequate, dedicated spaces would be set up in the various departments to support the use of ICT.

In light of this, the researcher sought to find out the adequacy of available space in the various units to house ICT equipment and other facilities. As shown in Table 4.19, 58.6% (45.7% adequate and 12.9% highly adequate) of respondents rated dedicated spaces that support the housing of ICT equipment and facilities as adequate, followed by 14 (20.0%) respondents who indicated that dedicated spaces were moderate. 21.4% (14.3% highly inadequate and 7.1% inadequate) of respondents rated dedicated space for housing and use of ICT equipment at the Balme Library as highly inadequate.

The researcher further sought to find out the adequacy of appropriate furniture that conform with the use of computers at the Balme Library. The majority of respondents 71.4% (54.3%

adequate and 17.1% very adequate) were of the view that chairs and desks dedicated for the use of computers were adequate. 15 (21.4%) respondents opined that furniture were moderate while 5 (7.1%) felt that the furniture were inadequate. The findings suggest that appropriate chairs and tables dedicated for computer use in the Balme Library were very adequate.

Some ICT infrastructure needed for the performance of duties at the Balme Library include hardware such as computers, photocopying machines and CD-ROM drives. Others include; up to date library management software, telecommunication equipment such as facsimile, telephones, and networking infrastructure like data ports, LANs, WANs, cables etc. This study therefore sought to ascertain library staffs' perceptions of the adequacy of these equipment to support the continuous use of ICT at the Balme Library.

Using ICT means removing the human element at all levels of the organization. In effect, telecommunication equipment is required to bridge the gap in communication across departments and units in the library. Overall, 48.6% (25.7% inadequate and 22.9% highly inadequate) of respondents indicated that telecommunication facilities and equipment such as telephones and fax machines were inadequate, while 16 (22.9%) reported that telecommunication facilities were adequate. Meanwhile, 28.6% of respondents felt telecommunication facilities were moderate in terms of quantity. The responses from the library staff suggest that, there has not been a high rate of investment in telecommunication equipment to facilitate communication in the Balme Library.

The study also found that, 47 respondents representing 67.2% (52.9% adequate and 14.3% highly adequate) perceived hardware equipment such as computers, printers, and photocopying machines available for the performance of the duties in the Balme Library as adequate. Further, 14 (20.0%) respondents agreed that hardware infrastructure were highly adequate. This was followed by ten (10) respondents who were of the view that hardware infrastructure were very

adequate. However, six (6) respondents, representing 8.6% indicated that hardware infrastructure was very low. To corroborate this finding, the researcher counted the number of computers purposely meant for library staffs' use in the various sections of the library. The computers varied from a minimum of four to a maximum of six networked computers.

Other ICT infrastructure identified were networking equipment (e.g. LANs, Data Ports, cables). Table 4.19 shows that, 57.1% (41.4% adequate and 15.7% highly adequate) of respondents indicated networking facilities were adequate. On the other hand, 21 (30.0%) respondents felt the network infrastructure was moderate while 12.9% (8.6% inadequate and 4.3% highly inadequate) indicated they were inadequate.

4.7.3 Adequacy of Technical Support

Specialized skills are required for ICT operations, as information technologies are complex systems. As a result, adequate staff with the requisite knowledge, skills and competence in ICT constitute a core resource of any academic library. The study therefore sought to investigate the adequacy of in-house experts (regarding ICT operation) in the Balme Library. Overall, the findings show that library staff were of the view that in-house experts were inadequate as expressed by 24 (34.3%) respondents. Also, 21 (30.0%) respondents indicated that technical support in the library was moderate while 35.7% (20.0% adequate and 15.7% highly adequate) suggested technical support was adequate. Based on this finding, one can conclude that technical support was inadequate in the Balme Library despite the fact that it was available.

In general, it could be deduced that most physical and infrastructural resources required to support the continuous use of ICT systems at the Balme Library were adequate, as a majority of responses were within the level of moderate and highly adequate. Telecommunication equipment such as phones and in-house technical support seemed to be the only resources that were inadequate per the responses in Table 4.19. These results are, however, not surprising as

they corroborate the findings from the research question which sought to find out top management's level of commitment towards the use of ICT systems at the Balme Library. In response to that question, most respondents were of the view that top management was very committed and supportive in ensuring the continuous use of ICT by making available the needed resources. Several authors (Ghobakhloo *et al.,* 2012; Kulvinskienė, & Šeimienė, 2009) have suggested that, where top management is committed to the use of ICT, they make the necessary investments to ensure its continuous use.

4.7.4 Ranking of Organizational Factors

Finally, the study sought to rank the most critical organizational factors likely to influence library staffs' decisions to use ICT. By far, the highest ranked factor was the availability and adequacy of physical ICT infrastructure at the Balme Library, as seen in Table 4.20.

Table 4.20: Ranking of Organizational Factors

Factor	**Mean**	**Std. Deviation**	***Rank***
Library's Physical ICT Infrastructure	1.86	.997	*1st*
Library's Human Resource Capabilities	2.21	1.102	*2nd*
Top Management Support	2.40	1.628	*3rd*
Library's Organizational Structure	2.59	1.186	*4th*
Library's Organizational Culture	2.83	1.215	*5th*

Source: Field data, 2018 ***N=70***

Physical ICT infrastructure of the Balme is the highest ranked factor affecting the use of ICT systems at the Balme Library as indicated by the majority of respondents. Library staff, knowledge and competency in the use of ICT equipment was the next highly ranked factor. Meanwhile, the Balme Library's work culture was found to be the least important factor affecting the use of ICT.

4.8 Chapter Summary

This chapter gives a summary and description of the results gathered, and also presentation of findings that emerged from the data. The data analysis were presented according to the broad themes of the study. The results from the study on library staffs' perspectives about ICT processes in the Balme Library point to an organizational structure that is highly formalized and structured, with lots of procedures. Additionally, the findings reveal that the Balme Library culture is founded on control. Leadership is thus based on organized coordination and monitoring, with a culture that emphasizes efficiency. The data is further suggestive of the mutual relationship between organizational culture and organizational structure.

Moreover, the findings of the study further revealed that library staff were highly knowledgeable in ICT which could be attributed to the positive attitudes and perceptions they exhibited toward ICT systems. Some library staff, however, indicated that they had not received any formal training to improve their ICT skills in the last three years, while those who had received some form of training bemoaned the ineffectiveness of the training they received.

Finally, respondents rated the level of ICT facilities and equipment available at the library as satisfactory. This could be attributed to top management's commitment to ensuring the continuous use of ICT in the library's activities, as suggested by library staff in the study. There were, however, concerns regarding the poor internet connectivity, obsolete software, lack of telecommunication tools and the lack of adequate technical support in the library. These limitations consequently affected staffs' judicious utilization of ICT in the Balme Library. The next chapter discusses the results obtained from the analyzed data.

CHAPTER FIVE
DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents a discussion of the findings of the study in relation to the objectives of the study in chapter one taking into cognizance existing knowledge on the topic. The main purpose of the study was to investigate the organizational factors affecting ICT systems in academic libraries. The study investigated five (5) organizational factors namely; organizational structure, organizational culture, top management, human resource capabilities and physical ICT infrastructure which are all pre-requisites to the efficient use of ICT systems at the Balme Library. The discussion of these elements in relation to the Mckinsey's 7S model in organizational alignment are presented in this chapter.

The discussion section provides the researcher the opportunity to compare the differences and similarities of the area in which the study has been carried out. It is also a chance to demonstrate exactly what the researcher knows about the topic by interpreting the findings and outlining what they mean. The analysis and presentation of the findings were based on themes derived from the research objectives.

5.2 Demographic characteristics of Respondents

Spacey *et al.* (2004) suggest that, the effectiveness of using library technology is determined by the personal characteristics of librarians such as their educational level, age, gender, educational experience and levels of self-efficacy which may either have a positive or negative consequence on the use of ICT systems in organizations and for that matter in academic libraries. The study objectives did not place particular emphasis on demographic characteristics, however, based on the assertions of Spacey *et al.* (2004) demographic characteristics of respondents who participated in the study is discussed below to provide the context within which the study was situated.

From the demographic characteristics of respondents, it was realized that an overwhelming majority of respondents (65.7%) who participated in the study were male which probably suggests there are more males than females working at the Balme Library. Also, it was observed that majority of respondents were within the middle age bracket of 30-39 years which was suggestive of a youthful staff population. The study further revealed that majority of the respondents worked with the various Electronic Resources Units of the Balme Library which include the Research, Knowledge and Faculty Commons. This could be attributed to the increasing patronage and importance of electronic resources and also due to the fact that Electronic Resource Units were gradually becoming the heart of research and learning in academic libraries.

With regards to the highest academic qualification attained by staff, majority of respondents (48.6%) had attained a Bachelor's degree. Equally, majority of respondents (45.7%) were found to be within the junior staff rank. Lastly, it was realized that, majority of the respondents had worked in the library between 5-10 years. Given their wealth of experience working at the Balme Library, their responses indicated that they were abreast with the technological changes and challenges facing their respective departments in relation to the use of ICT. Their rich experience of working at the Balme Library therefore added to the reliability and validity of the study.

5.3 Organizational Structure

An essential factor that affects the use of ICT systems in organizations is an organization's structure. Change in today's global market place and increasing competition is exerting so much pressure on managers to increase their efficiency and effectiveness. As a result, there has been an interest in finding ways to restructure organizations. Several authors (e.g. Buruncuk & Gülser, 2004; Robbins & Coulter, 2009; Shafritz, *et al.,* 2011) have attempted to establish the subliminal influence of technology on an organization's structure drawing from earlier studies

conducted by Joan Woodward in the 1950s which tried to establish the potential relationship between the technology used by an organization and its organizational structure. This assertion that technology influences an organization's structure has been tested and confirmed by (e.g. Delic & Nuhanovic, 2010; Quinlan & McHarg, 2012; Susa, 2015) in their respective studies.

Buruncuk and Gülser (2004) are of the view that adopting ICT systems has a powerful behavioral and organizational impact as it ultimately transforms how individuals and groups interact. Scholars (Dess, *et al.,* 2005; Gibson *et al.,* 2011; Mullins, 2007) also suggest that the use of ICT should enable organizations to distribute decision making authority across a wider range of hierarchical levels without sacrificing decision quality or timeliness. Robbins and Coulter (2009) highlight the impact of ICT on organizational structures to include shifting of organizations, the establishment of virtual workplaces, more mobile work force, flexible work arrangements, empowered employees and balance in work life. Laudon and Laudon (2014) also state that, where the present organizational structure places restrictions on the use of ICT, a fit must be established between the organization's structure and ICT structure and infrastructure.

Shafritz, *et al.* (2011) posit that rational organizational behavior is best attained through systems of defined rules and formal authority. In view of this, they assert that "there is a best structure for any organization or at least a "most appropriate structure" (p.16) considering the organization's given objectives, the internal conditions surrounding the nature of the products and/or services and the technology of the production size.

Rues *et al.* (2012) intimates that the complexity of the technology used by an organization determines the kind of structure of the organization. As such, the more complicated the technology in use by the organization, the greater the need for a flexible structure. In contrast the more routine the technology, the more appropriate a formal structure. Daft (2012) also adds

that, a routine technology tends to create an organization that has greater formalization, specialization, and centralization as was the case of findings derived from the level of formalization and centralization at the Balme Library.

Previous studies in academic libraries especially from the more advanced countries (e.g. Bezweek & Egbu, 2010; Farhanghi, *et al.* 2013; Mirmasoudi *et al.* 2012), have all concluded that the use of ICT systems in many library services call for a structural configuration. Badu (1999) opines that such changes in library services "permits a much flatter structure and the reduction in the number of middle managers. They recommend the organic type of structure to respond to environmental uncertainty" (p.326).

The findings of this study on the organizational structure in the Balme Library differ from the theories described so far. The present structure defies the contingency theory and also ignores any relationship with environmental dynamism. Notwithstanding the deficiencies within these structures and the advent of Information and Communication Technology, there has not been any considerable changes.

The data analysis speak volumes about the organizational structure in vogue at the Balme Library and most other academic libraries in developing countries. The results from the views of library staff on the level of formalization and centralization points to the existence of a mechanistic organizational structure which is characterized by high level of formalization and centralization irrespective of the adoption of Information and Communication Technology over the past few years, a situation which requires a modification in the present structure to achieve efficiency and an alignment between the use of ICT and the Balme Library's organizational structure.

Dess *et al.* (2005) have observed that decentralization affords an organization and its employees to behave in flexible ways even as the organization expands. Therefore, managers

seeking to empower employees are creating self-managed work ICT departments, establishing cross-functional teams and shifting to a product or service team structure. In their view, these innovation help keep the organizational structure flexible and responsive to complex technologies.

Despite the advantages of decentralization, Jones and George (2004) argue that, too much decentralization often led to teams pursuing their own agenda at the expense of the organization's agenda. They add that, it could lead to ineffective communication among departments or units.

Robbins and Coulter (2009) proffer that, organizations must seek a balance between centralization and decentralization of authority that meets the four main contingencies organizations face. Invariably, organizations that find themselves in stable environments and are using a well-understood technology, there is no urgency to decentralize. The situation is however the opposite when organizations find themselves in an uncertain, changing environments where high-technology is in vogue. Robbins and Coulter (2009) conclude that, an organization that fails to control the balance between centralization and decentralization suffers abysmally with regards to performance.

These findings are however not surprising as they corroborate evidence from previous studies on the academic library environment in chapter 2 where it was discovered that academic libraries by their very nature are departmentalized and tend to be heavily structured, although individual departments may be fairly flat.

Kaarst-Brown *et al*. (2004) writing extensively on the organizational structures of libraries as a strategic resource states that academic libraries have an integrated policy structure where librarians make decisions based upon their professional expertise, while the para-professional and non-professionals follow structured policies. This assertion by Kaarst-Brown *et al.* (2004)

is further buttressed by Budd (2005) who puts forward that, the most common form of organizational structure in academic libraries has been the hierarchical bureaucracy. He adds that, these formal structures was necessitated by the growth in size of academic libraries several decades ago.

Statements posed that sought to determine the level of formalization and centralization revealed that despite the introduction of ICT, the Balme Library was still highly formalized and centralized thereby suggestive of a mechanistic organizational structure. These views reported by the library staff do not conform with the findings of Mirmasoudi, Farjami and Pourebrahimi (2008) in their study of Refah Bank in Gilan who observed significant positive relationship between IT and organizational structure where ICT was perceived to ease the level of formalization and centralization thereby reducing bureaucracy in the organizational structure of the Refah Bank in Guilan.

The results from the library staff perspective point to a structure opposite to the ideal one suggested by Rue *et al.* (2012) who assert that, adopting ICT means eliminating human minds and hands from an organization's most routine tasks and replacing them with ICT systems. In support of the assertion of Rue *et al.* (2012), Bezweek & Egbu (2010) also intimate that "... organizations that use ICT are able to eliminate middle management, allowing them to widen the span of control of managers and thereby flatten the organizational structure" (p.8). More importantly, it makes it possible to reduce layers of management and flatten the organizational structure which tends to increase communication and the flow of information across departments and groups. On the other hand, the use of ICT makes organizations more complex, differentiated, and decentralized

From the ongoing discussion, it can be deduced that ICT is a critical element of organizational transformations of which academic libraries are no exceptions. While ICT systems are

generally viewed as a means to increase the efficiency and overall effectiveness of academic libraries, this can only happen if it is done as part of a bigger change effort, regardless of whether the change is driving the technology in libraries, or the technology is driving the change in libraries. Organizations that are able to successfully undergo structural reforms to suit the changing demands of the external environment will be better prepared for the environmental uncertainties especially with regards to new technology, since there is no doubt that the emphasis on increased use of information and communication technology in academic libraries has come to stay.

5.4 Organizational Culture

According to Roberts as (cited in Currie and Shepstone, 2012) there has been a growing interest within the library sector on the role organizational culture plays in shaping the workplace and contributing to the effectiveness and success of the organization. One dimension of a culture is how members of an organization perceive its Information Systems (Laudon & Laudon, 2014). Hence, Jones and Dewitt (2001) assert that, ICT can moderate the effects of culture on employee attitudes, beliefs, values and behaviors by enhancing the motivational effects of cultural values that are supportive of efficiency or innovation.

An analysis of an organization's culture is therefore imperative in providing a context and starting point for creating a road map for change and continued organizational development. A clear understanding of the organizational cultures can therefore help libraries to grow and thrive, and help determine the right pathways for organizational change.

The second objective of the study sought to find out some aspects of organizational cultural practices at the Balme Library and how it influences the use of ICT systems. Jones and George (2004) posit that, the basis of corporate culture is the organization's beliefs and philosophy about how it conducts its business. These beliefs and philosophies are often intangible and

therefore can be difficult to characterize. However, the research objective was based on the premises that suggests that a close culture-strategy match is crucial to managing an organization's people resources with maximum effectiveness.

Organizations that possess strong cultures differ on a variety of levels which invariably determines how their members should carry out their duties (Jones & George, 2004). For example, organizations by virtue of their culture may differ in their willingness to change (Flexible or unyielding) and innovation (creative or predictable). These variables can to a very large extent affect the efficient use of ICT systems. An organization's culture is relevant to heads of libraries because it constrains them as to what they can and cannot do. Though not explicitly written down or even spoken about, they do however exist. Muriithi *et al.* (2013) intimate that, varying rates of adoption and use could also be as result of a lack of exposure to a culture of ICT usage.

Previous studies (e.g. Mullins, 2007; Kulvinskienė and Šeimienė, 2009; Wang, 2007) have suggested a fit between an organization's culture and the use of ICT. These studies assert that the more the use of ICT and organizational culture is aligned, the higher the chances of a more effective utilization of technology. In light of organizational readiness to change, Jones and George (2014) also opine that, supportive organizational cultures might be more beneficial to the successful utilization of technologies in organizations than less flexible cultures. The main purpose of this survey was to find out the influence of organizational culture on the use of ICT systems in academic libraries.

The findings of the study points to the fact that, the culture of the Balme library was between a task/bureaucratic/hierarchical culture and one of a clan culture as a majority of respondents 61.4% indicated that the work environment was highly formalized and structured with lots of procedures. Meanwhile 17 (24.3%) of respondents also suggested that the Balme Library's

culture was one of clan culture. The diversity of responses is probably indicative of the different sub-cultures that may exist within the various sections or departments of the library. This is further emphasized by Laudon and Laudon (2014) when they posit that employees may interpret the culture of their organization as one that is not harmonized or integrated.

The findings of the present study are however consistent with the findings of Brooks (2007) who in a comparative study set out to identify the culture types of one hundred higher education libraries affiliated with the Association of Research Libraries (ARL) and 123 similar-sized non-research-oriented colleges and university libraries. The findings of Brooks (2007) revealed that that a majority of these libraries are presently situated in hierarchical cultures.

Currie and Shepstone (2012) also observed in their study of the present organizational culture profiles of three (3) academic libraries in Canada namely; University of Saskatchewan, Mount Royal College and Carleton University where all three academic libraries were characterized by a distinct dominant culture. For example, the dominant culture of University of Saskatchewan was the market culture, Carleton University Library scored highest in the hierarchy culture while Mount Royal College Library scored highest in the clan culture which is characterized by a focus on people and relationships.

The findings on staff perspective of the existing type of culture at the Balme Library is however not surprising taking into consideration the theoretical connection between organizational culture and structure, according to which the role culture corresponds to a bureaucratic structure. One can therefore confidently conclude on this basis that there is a mutual influence between the organizational culture and organizational structure of the Balme Library (Delic & Nuhanovic, 2010).

Bezweek and Egbu (2010) however intimate that establishing self-directed work teams with more responsibility and freedom to improve overall organizational performance can be

achieved by integrating information systems to the internal organizational culture change. This provides some flexibility as team members may cross over to other teams to provide assistance as and when the project load changes. It also affords employees to be more creative in their use of ICT. In view of the above, it is imperative for top management to take concrete actions in modifying the cultural environment to create a stronger fit with the use of ICT.

5.5 Top Management Support and Commitment

The influence of top management on the sustained and continuous use of ICT systems in any organization is a very critical factor. According to Alshaher (2013), top management support to the use of ICT is usually in the form of funding support, technological support and experience support. Paramount amount these forms of support is funding which is very essential since the use of ICT cannot be sustained without massive investment.

The present findings are however not consistent with the findings of Emmanuel and Sife, (2008) who in recounting the challenges of managing Information and Communication Technologies for education at the Sokoine National Agricultural Library intimate that it was difficult for university top officials to support initiatives that were aimed at increasing availability, access and utilization of electronic information resources in the university.

This finding do not also support a past study conducted on the factors affecting Information and Communication Technologies (ICTs) use by academic librarians where it was revealed that lack of top management support led to the non-availability of ICTs in South-Western Nigerian University Libraries (Haliso, 2011).

It is possible to conclude that top management's positive reception of ICT to a large extent also influenced the positive attitudes of library staff toward the use of ICT which ultimately resulted in their desire and willingness to use new technology as discovered in the study. In the view of Jones and George (2014), managers can cultivate the kind of attitudes that develop in an

organization as is the case with big corporations like Microsoft, Intel and Apple where top managers adapt values that support their commitment toward innovation as a means of competitive advantage even if there is a significant chance of failure. Top management commitment was further manifested in the availability of the major relevant ICT infrastructure required at the Balme Library.

5.6 Human Resource Capabilities

Another important factor affecting an organization's choice of structure and culture is the characteristics of the human resource it employs. According to McKinsey's 7S model, the use of ICT systems as a strategy will require alignment of ICT with the requisite skills and capabilities of employees in an organization. This often includes the level of competence of employees in using new technology.

Recent advances in ICT and other computer-based information systems have changed the character of organizations. In the context of libraries, Khalil (2000) indicates that, the increasing technical obsolescence of the professional staff, insufficient past training and the inexperience of skilled labor in using new technological devices and tools continues to pose a challenge for management and operational staff. Khalil adds that, professional staff must keep abreast with new developments in technological innovation through a variety of means including continuing education, training and development programs.

Empowerment allows well-trained and experienced employees to swiftly make decisions in a changing global marketplace. By dispersing information throughout the organization, then, ICT enables employees to improve their abilities and to be entrusted with decision-making, thereby eliminating middle management, widening the span of control and flattening the hierarchy. In view of this, Khalil (2000) recommends that management must anticipate the skill

requirement of new technologies and try to align existing skills to them through re-training so as to minimize operational disruption and redundancy.

The objective of this study was therefore to assess the human resource capacity and expertise available to support the continuous use of ICT at the Balme Library. The data on the assessment of the human resource capabilities available to support the use of ICT at the Balme Library suggest that a majority of library staff (90%) at the Balme were found to be fairly sophisticated ICT users in terms of their competency and literacy skills.

Predictably, this could be largely attributed to the positive perception and attitude of the majority of library staff toward ICT and their willingness to employ new technology in their line of duties. The finding of this present study however contradicts the assertion of Laudon and Laudon (2014) that a top-down approach has the tendency to engender feelings of resentment and frustration among staff willingness to use new technology.

The finding however support the findings of several authors (Adekunle *et al.* 2007; Babu *et al.* 2007; Dhanavandan *et al.* 2007) who have all reported that library professionals in various countries had positive attitudes towards the use of ICT. This is quite consistent with earlier assertions by Damschroder *et al.,* (2009), that, the degree to which new attitudes are positively or negatively valued heightens intention to change, which is a precursor to actual change. It is also normal that, some of the individuals will have a willingness and desire to learn about ICT and how to apply some specific technologies whiles others will be quite resistant to adapting to new technology (Muriithi *et al.,* 2016; Spacey *et al.,* 2004). It was therefore not surprising to note that some two (2) respondents indicated they were hesitant in using technology while another five (5) respondents were neither enthusiastic nor hesitant.

Computer expertise and knowledge in ICT are some of the most valued skills needed by library staff in order to facilitate the efficient use of ICT. The data from the study also revealed that, a

majority of respondents (54.3%) had substantial knowledge in the use of ICT equipment, followed by (31.4%) who also indicated they had in-depth knowledge in the use of ICT equipment. This finding also suggests that, presently there is an alignment between the skills that the Balme Library requires and what it possess to ensure the continuous use of ICT.

Again, these findings were not surprising as Spacey *et al.* (2004) intimate that, individuals who rated their computer skills highly were frequently more inclined to use technology than those who did not. The findings of library staff levels of competency in using ICT equipment are thus reflective of their willingness to use ICT. The findings of the present study are consistent with earlier findings of Owusu-Ansah's (2015) assessment of ICT resources in Ghanaian polytechnic libraries which revealed that, a majority of library staff were conversant with the use of ICT related equipment.

While the findings of library staff capabilities in ICT at the Balme Library may seem encouraging, there is always room to increase the knowledge and skills most especially for the category of respondents who fall within the "moderate" competency level. The obvious solution to this problem is to develop the skills of these category of staff (Badu, 1999). As intimated by spacey *et al.* (2003), training is an appropriate means of enabling staff to effectively cope with increasing rate of technological changes. Evidence from this study indicates that, the majority of library staff (84.3%) indicated they had received some form of training, as against the minority (34.7%), who did not.

A further cross tabulation between the categories of respondents by training did not show any significant relationship between staff categories and training received. What was obvious though was the fact that the category of staff who indicated they had not received any form of training or development were all in the junior staff category. It is therefore possible to conclude that most of the training workshops and seminars organized were mostly targeted at senior

members and senior staff and possibly a few junior staff who were lucky to be selected. Mathew and Baby (2011) outline some reasons that could account for librarians non-participation in training and development programs to include financial constraints, lack of influence of training on professional work, low interest, lack of awareness and restriction of training programs to some ranks of staff. These reasons could be applicable to the category of respondents who intimated they had not received any continuing education programmes.

Hannagan (2004) intimates that in which ever form staff training takes, it should be aligned with the goals and objectives of the library as well as take into consideration the needs of the individual library staff. Interestingly, the results of the evaluation of training programs showed that majority of library staff who had received one form of training or the other were dissatisfied with the level of training. For example, out of (84.3%) of respondents who indicated they had received some form of training within the last three years, the majority (50.0%) indicated that the training was either ineffective or very ineffective in upgrading their skills and knowledge in ICT.

These findings are suggestive of the fact that the training offered library staff was either inadequate or did not meet their needs and expectations. Similar findings were made by King *et al.* (2006) in their assessment of the effectiveness of training for public library staff where it was revealed that, a significant 57 out of the 136 potential respondents who participated in the study indicated the training was ineffective despite a general positive outcome. Dezdar and Ainin (2011) highlights the importance of effective training and suggest that, training should address all aspects of the system, be continuous, and be based on knowledge transfer principles.

In conclusion, the use of ICT while lacking the human resource with the requisite skills and knowledge is one of the challenges organizations needs to consider. While the general findings on the human resource capabilities available at the Balme Library point to the fact that majority

of library staff had favorable attitudes and substantial skills and knowledge in the use of ICT, regular and comprehensive training needs to be organized to improve the skills of the few respondents who were not completely vexed in the use of ICT. This could ultimately go a long way to improve their attitude, perception and willingness to use ICT as well.

5.7 Physical ICT Infrastructure

Investments in physical ICT infrastructure has been described by many authors (e.g. Ghobakhloo *et al.,* 2012; Iwhiwhu & Okorodudu; 2012; Majid *et al.,* 2001; Nzivo, 2012) as an organizational factor which may well determine whether an organization's decision to use ICT will be successful or otherwise. The effectiveness of ICT in any library is very much dependent on the quality of infrastructure present. The utilization of ICT is therefore largely dependent on the requisite equipment, communication infrastructure and technological skills which is contingent on massive funding and financial support coupled with a commitment by management of the parent institutions of academic libraries.

The fifth objective of the study sought to assess the extensiveness of physical ICT infrastructure available to support the use of ICT systems at the Balme Library. Within the context of this study, ICT infrastructure consists of basic equipment, physical devices and software applications that are required to operate the entire organization. It also includes the set of firm wide services budgeted by management which includes technical capabilities. An organization's ICT infrastructure provides the foundation for serving clients and managing the organization's business processes (Ankrah, 2014).

A critical analysis of extant literature on the availability and adequacy of ICT infrastructure in developing countries like Ghana, have either reported a decline or non-availability of adequate physical ICT infrastructure to facilitate the use of ICT in academic libraries (Iwhiwhu & Okorodudu, 2012; Majid *et al.,* 2001; Nzivo, 2012). Though the situation may exist in more

developed countries, it is even more severe in academic libraries in developing countries and in Ghana for that matter. This has largely been blamed on poor funding which could partly be attributed to the fact that academic libraries depend on their parent institution for funding of services, activities, goods and infrastructural investments.

This is consistent with Ubogu and Okiy's (2011) observation when they state that no library can function efficiently without adequate resources especially financial resources. Hence, funding plays a critical role in the provision of quality library services without which libraries cannot meet their physical infrastructural needs. They further add that, it is important for libraries to possess the resources that will enable them achieve their goals and objectives. This is aptly stated when they posit that "…indeed, resources are the glue that holds the building, collection and staff together to enable them achieve their targets" (p. 2).

Using ICT systems in organizations are expensive at a number of levels and therefore requires adequate resources (Ghobakhloo *et al.,* 2012). Academic libraries should thus, be resourced with adequate levels of funds to enable them acquire the infrastructure needed to support their daily activities.

In the context of this study and with respect to the McKinsey 7S model that was employed in the study, it emerged from the data analysis that there had been quite a considerable amount of investment in ICT infrastructure at the Balme Library. This is a positive development which needs to be commended considering it is an improvement of previous studies (Badu & Loughridge, 1997; Badu & Markwei, 2005; Armah, 2009) which either indicated the non-availability or inadequacy of basic infrastructural resources required to support the use of ICT systems at the Balme Library. Dedicated space for desktop computers and other ICT equipment was found to be available and adequate as indicated by the majority (42.5%) of library staff

across all departments and as observed by the researcher as well in his tour of some sections of the library.

Despite this positive development, three (3) major infrastructural constraints were found to militate against the judicious utilization and development of ICT systems at the Balme Library. The lack of technical support coupled with obsolete software and poor internet connectivity were considered by the majority of respondents to be the most daunting barrier to the use of ICT at the Balme Library. Secondly, the non-availability of telecommunication equipment was also reported by the majority of staff.

An important component in ICT infrastructure is the internet. Majority of Library staff (52.9%) bemoaned the poor state of the library's internet connectivity. This was a recurring concern when staff where asked to make recommendations for the improvement of using ICT at the Balme Library. The issue of poor internet connectivity at the University of Ghana which has a trickling down effect on the Balme Library partly because the ICT Directorate is responsible for the provision of internet access and technical support to the University community including the Balme Library (Dadzie, 2007) seems to be a protracted issue as studies conducted by Dadzie (2009) revealed similar findings. The findings also corroborates the findings of (Chisenga, 2007) who found that poor internet connectivity was deemed to be one of the major stumbling blocks in using ICT in academic libraries in Africa. The problem of poor internet connectivity could emanate from hardware infrastructural deficits at the ICT directorate or owing to the fact that demand of users far out-weighs supply where the carrying capacity of the network is over-stretched. Reponses from the perspective of library staff also indicate a very high rate of obsolescence of existing software, a consequence of years of use without adequate upgrading or updating.

In view of the findings above, it may be concluded that despite the fact that the Balme Library was partially resourced with regards to the availability and adequacy of ICT infrastructure such as computers, printers, photocopiers and appropriate furniture required for service provision, it was also deduced per the responses of the majority of staff who used these infrastructural resources that limited bandwidth, outdated software, lack of telecommunication equipment and the lack of technical support did not afford the Balme Library the convenience of efficiently using ICT. Hannagan (2004) states that, the strategic use of ICT in an organization necessitates aligning its corporate objectives with its available infrastructural resources. This therefore requires reconciling the business the organization is involved in with the allocation of resources since resources support the aims and goals of the organization.

5.8 Chapter Summary

The discussion of findings was done with continuous reference to the objectives of the study. It emerged from the discussion of the findings that the Balme Library had a mechanistic organizational structure alongside a task culture which is typical of most academic libraries in Ghana. There was a non-alignment between the present strategy with regards to the use of ICT at the Balme Library and its organizational structure and culture.

Results from the survey also attested to the fact that library staff were knowledgeable and willing to use technological equipment. Though some staff admitted to receiving training in the use of ICT equipment, it was acknowledged by the majority of library staff that the training received was ineffective.

With regards to the availability and adequacy of physical ICT infrastructure, staff indicated that they grappled with some infrastructural challenges. Some of the challenges were the lack of up to date software and applications, poor internet connectivity and the lack of adequate technical support. Telecommunication devices were also found to be inadequate. These

infrastructural challenges often posed as stumbling blocks to the efficient utilization of ICT systems at the Balme Library.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

As stated at the onset, the researcher sought to investigate the organizational factors (structure, culture, top management, human resource capabilities and physical ICT infrastructure) affecting the use of ICT systems at the University of Ghana, Balme Library. In order to accomplish the primary purpose of this study, a cross sectional survey design was conducted to enable the researcher collect data on a sample of 70 participants drawn from a population of library staff across sections of the Balme Library that employed the use of ICT in their daily routines. The researcher administered and collected the questionnaires personally. Quantitative data that was collected, was analyzed with the help of the Statistical Package for Social Scientists (SPSS) version 25 software. Descriptive and quantitative analysis were used to present the results of the study in the form of frequency tables.

A number of organizational characteristics were found to influence the development and use of ICT systems at the Balme Library. Chapter five presents a summary of the findings based on the study objectives indicated in chapter one. The chapter also covers the conclusion drawn from the study. In achieving the fifth objective of this study, recommendations are proffered to address the organizational deficiencies identified in the use of ICT systems at the University of Ghana, Balme Library. Following this, there is a discussion on the study‘s contribution to knowledge whiles offering rich insights and drawing specific implications for research, policy and practice. Areas for further studies, have also been proffered which is important not only for the Balme library but also for other academic and non-academic libraries.

6.2 Summary of Findings

The study sought to examine how the organizational management/people and infrastructural components of the Balme Library such as the organization's structure, culture, top management, human resource and physical ICT infrastructure affect the efficient use of ICT systems at the Balme Library. The major findings of the study, which are viewed purely from the perspectives of library staff who are direct custodians, users and beneficiaries of ICT at the Balme Library have been discussed extensively in chapter five. A summary of the major findings of the study are presented as follows:

6.2.1 Demographic Characteristics of Respondents

From the study, demographic characteristics of majority of the respondents who were male were between the ages of 30 – 39 years, majority of respondents were University graduates with at least a Bachelor's degree and had worked at the Balme Library for between 5-15 years. Also, the majority of staff who took part in the survey were in the junior and senior staff categories. In addition, respondents were selected from 9 departments of the Balme Library majority of whom came from the Electronic Resource departments. It was considered that these demographic factors put them in a good position to respond to a study of this nature.

6.2.2 Organizational Structure

The first objective of the study was to explore the efficiency and effectiveness of the present management decision-making structure of the University of Ghana, Balme Library in supporting the use of ICT systems. Responses from library staff suggest that the Balme Library was highly formalized and centralized. The findings revealed that staff of the Balme Library worked under strict rules and precisely defined procedures with superiors monitoring subordinates. Similarly, a vast number of written policy documents were in place to regulate staff behavior and activities. Communication and decisions in the library were made by a top-

down approach and in some instances, subordinates were not consulted. These indicators are suggestive of mechanistic organizational structure also known as a hierarchical structure.

6.2.3 Organizational Culture

This study also attempted to unravel the kind of work culture that was fostered in the strategic use of ICT at the Balme Library. It was discovered that the Balme Library had a formalized and structured work environment which was suggestive of a task/hierarchy culture. Keeping the organization functioning smoothly is most crucial with the hierarchy culture. The long-term values of this type of culture is stability and results coupled with efficient and smooth completion of assigned roles in the library. Personnel management has to guarantee work and predictability. Despite the hierarchy culture been dominant, there were however diverse sub-cultures such as the clan and adhocracy culture (Suri, 2005) which were eminent in some other departments as evidenced from the responses of some library staff.

6.2.4 Top Management Commitment and Support

The third objective of the study sought to assess the level of commitment and support from top management in the use of ICT systems at the Balme Library. It was observed from the responses of the majority of library staff that top management was generally very committed and supportive of the use of ICT at the Balme Library.

6.2.5 Human Resource Capabilities

The fourth objective of this study was to determine the capabilities of the human resource available to support the use of ICT systems at the Balme Library. The findings revealed that staff were knowledgeable in the use of ICT equipment. This could be attributed to the general positive attitudes exhibited by the majority of library staff toward the use of ICT at the Balme Library. However, the view of some minority of library staff in the junior staff category was that they had not received any form of training over the last three years. For the few staff that

had received training, majority of them perceived the training to be ineffective probably because it did not address their specific needs or they were unable to transfer the skills learned in training courses back to their actual jobs.

6.2.6 Physical ICT Infrastructure

The use of ICT is very much dependent on the availability and adequacy of physical ICT infrastructure. To this end, the study also investigated the extensiveness of physical ICT infrastructure available to support the use of ICT at the Balme Library. The findings revealed that physical facilities such as appropriate dedicated space and furniture were available and highly adequate. Hardware infrastructure such as computers, scanners and printers were also deemed to be available and mostly up-to-date. Some library staff however indicated that software and applications they used in their departments were obsolete.

Telecommunication facilities such as fax machines and telephones were either insufficient or mostly unavailable in most departments. Some library staff also bemoaned the constant interruption in internet connectivity at the library which was perceived to be a major stumbling block impeding on efficient service delivery at the Balme Library. They further indicated the low levels of adequate technical expertise to support them during challenges in using ICT equipment also posed a challenge to the effective use of ICT at the Balme Library.

6.3 Conclusion

This study which sought to investigate the organizational factors affecting ICT systems has sought to redress these inconsistencies by examining some of the reasons why ICT though available in most academic libraries is not efficiently used. The study has presented evidence from an empirical study of one of the biggest, oldest and earliest adopters of ICT which is the University of Ghana, Balme Library. The study has indeed proven that, the organizational

characteristics of an academic library has a behavioral implication on how ICT is efficiently utilized.

The evidence on the organization-technology relationship helps explain why many academic libraries of today are restructuring in the advent of technology. Global competition from the parent institution of academic libraries, product and service innovation by other academic libraries with regards to the variety and dearth of reading materials and increasing demands from patrons for quality and efficient service delivery has necessitated the transition from manual ways of carrying out task in academic libraries to the use of ICT in all aspects of library service delivery in recent times.

The transition has been quite steady and various academic libraries have undergone tremendous transformation to effectively deliver quality services. The use of ICT adds value to today's library activities and satisfies the unique needs of students, faculty and researchers. Information and Communication Technology carries the potential power of increasing the efficiency and effectiveness of librarians in the discharge of their duties.

However, researchers worldwide hold the view that ICT systems in most organizations including academic libraries are being underutilized. Findings from the present study indicates that ICT systems at Balme Library was heavily utilized but was however beset with some challenges which if solved could improve its utilization. This is even more imperative considering there must be a justification for more investment on ICT systems in academic libraries in the face of dwindling resources.

This study in line with McKinsey's 7S model has indeed shown that organizational factors affect the use of ICT systems. The key underlying structural transitions in academic libraries brought about by new technological developments and changing faculty and student expectations are imposing new strains on librarians around the globe to realign their existing

structures and resources with their goals (Badu, 1999). Consequently, academic libraries would have to adapt if they have to continue existing.

The adoption and use of ICT systems is a complicated process of establishing and developing an integrated information technology system that is aligned to the organization's goals and characteristics. This study, in line with the literature, explored five (5) organizational factors using the McKinsey's 7S model which as a tool is meant to assist academic library managers and administrators in efficiently and effectively assessing the harmony, integration and level of alignment of ICT systems with their present academic library's structures, cultures, human and infrastructural resources coupled with the level of commitment from top management.

From the study, it was observed that each of the five (5) organizational factors had either positively or negatively impacted the use and development of ICT systems at the Balme Library. Responses from the perspective of some selected library staff from departments of the Balme Library that mainly employed the use of ICT in their routine work was measured using a Likert scale. This enabled the researcher to measure the intensity of views from respondents. The findings from the study revealed some elements or characteristics of the Balme Library that will need to either be modified, change or realigned in other to see an improvement in the use and development of ICT systems in order to deliver on its ICT Strategy.

The most critical issues that were revealed from the study include the present dysfunctional and archaic mechanistic organizational structure of the Balme Library coupled with a non-innovative culture and the non-availability or inadequacy of some infrastructural resource such as adequate bandwidth, technical support and up-to-date software.

For example, while the majority of library staff intimated they had received some form of training in ICT, they however opined that the trainings were ineffective in meeting their developmental needs in an ever dynamic and changing ICT environment. To add to that, while

library staff indicated that the library was infrastructural resourced with all the needed space, equipment and technological devices required to ensure the use of ICT at the Balme Library, they lamented that the present bandwidth of the library was too low which resulted in constant interruption in internet supply. This greatly affected some of the library's routines and tasks which are heavily reliant on high speed and adequate internet supply. Library staff were also of the view that technical support was either non-existent or too low.

In spite of these findings, the Balme Library can be realigned so as to improve the level of integration of ICT with the organizational elements studied. The researcher opines that more contemporary structural forms would allow academic libraries the flexibility needed in different ways to address the contingency issues that impact academic libraries, of which technological change is one.

6.4 Recommendations

In applying the McKinsey's 7S model to the use of ICT at the Balme Library, we can see how each element could be changed or modified to improve upon the strategic use of ICT at the Balme Library. With a well understood ICT strategy, management of the Balme Library might consider the following recommendations to improve the efficient use and development of ICT systems at the Balme Library.

6.4.1 Organizational Structure

1. Using an organic structure as most of these departments that use ICT do not function well with a litany of rules and restrictions whiles maintaining a mechanistic structure for the other departments whose activities do not entirely depend on the use of ICT.
2. Traditional organizational designs have been deemed to be inappropriate in today's increasingly dynamic and complex ICT environment and academic libraries are no exception. In view of this, the study recommends that the present mechanistic

organizational structure should be modified into contemporary organic organizational designs such as the team structures and the matrix-project structures. Amongst some of the advantages of these contemporary organizational designs includes the fact that library staff are more involved and empowered. It also reduces the barriers among the various functional areas of the Balme Library. More so, fluid, flexible and adaptive organizational designs tends to enable the organization to respond to technological changes which facilitates faster decision making.

3. ICT support should be decentralized or disbursed among the various departments and units of the library. Management needs to assign full time computer professionals to every department to look after all the technical matters and problems. This brings the technical staff closer to library staff thereby enabling easy and unimpeded access to technical support. The technical support unit needs to be flexible, dynamic, and focused on achieving real time outputs. The establishment of just another bureaucratic unit where access to technical support becomes cumbersome must be avoided.
4. The traditional view of span of control in organizations is that managers should directly supervise not more than five or six individuals. However, contemporary views is that span of control depends on the skills and abilities of the employees. The study revealed that the majority of staff were already highly skilled which implies they need to be empowered with limited direction and supervision. This will provide a structure that will allow the library to be flexible enough to change in conjunction with the 'creative whims' of library staff (Jones & George, 2014).

6.4.2 Organizational Culture

Over the years, the Balme Library has been pursuing meaningful and unique innovative services with regards to the use of ICT. It is therefore recommended that top management should foster in library staff a strong culture of using ICT in innovative and creative ways.

Significant changes to the organizational culture should be geared towards making it flexible and open to new ideas. This could be achieved by;

5. Collaborating with other academic libraries across the globe so as to gain new perspectives and insights on how ICT could be used more innovatively in the academic library environment.
6. Furthermore, top management of the Balme Library must stay open to ideas from all levels of staff since great innovative ideas do not only always come from experts but also from novices and 'backroom thinkers' within an organization.

6.4.3 Human Resource Capabilities

People are the most important resource of any organization that need to be groomed and developed. The findings of the study revealed that though the majority of staff had some form of training in ICT, a cross section of staff mostly junior staff also indicated they had not received any form of training and education in the use of ICT over the last three years. For the category of staff who had been involved in these training programs majority deemed it to be either ineffective or insufficient. It is therefore recommended that;

7. Management of the Balme Library should institute more capacity building strategies to regularly train and refresh staff knowledge on new technologies in vogue for libraries. Regular training will equip them to in turn transfer knowledge and technologies on the job.
8. Also, staff training should provide for a range of professional, soft and most especially technical skills considering most staff were deficient in installations and basic troubleshooting. Trainings should also include all categories of staff who in one way or the other use ICT in their line of duty.

9. To add to that, these trainings should be tailored towards the needs of individuals considering library staff have varying degrees of knowledge, competencies and skill when it comes to the use of ICT systems. Training programs could therefore be based on measurable objectives which includes instructional objectives, organizational objectives and individual performance objectives (Mullins, 2007).
10. To further boost the effectiveness of ICT training for library staff, a system should be established to appraise and evaluate trainings received by library staff in the use of ICT in order to determine their usefulness and effectiveness. Evaluation of training and development programs should also be based on the measurable objectives stated above. This will enable management unlock the potential of individual library staff by identifying their skill deficiencies and developmental opportunities thereby making good performance better, overcoming skill deficits and helping library staff prepare ahead for future technologies that may be utilized in the library.

6.4.4 Physical ICT Infrastructure

Several studies conducted on internet accessibility in academic libraries in developing countries especially on the African continent revealed that networking facilities are in developmental stage in most university libraries which has often led to poor internet connectivity. The findings of this study suggest the case is no different with the University of Ghana, Balme Library. In order for academic libraries to be able to integrate ICT into their core business processes such as digitization, acquisition and cataloguing which are mostly reliant on adequate and unimpeded internet connection, access to the internet needs to be improved to prevent the sudden disruption in internet connectivity which brings business activities at the library to a halt.

11. In view of this, the study recommends that internet access points especially bandwidth and wireless networks should be increased by the University administration. The University of Ghana's ICT Directorate may also have to prioritize access to critical network infrastructure if it is the case of inadequate resources to provide adequate connection demand to all users.
12. Alternatively, top management of the Balme Library should lobby for a dedicated network from the university's administration which will purposely serve the internet connectivity needs of the library's activities. Haliso (2011) opines that owning a dedicated bandwidth would enhance effective job performance of the academic libraries by giving them access to uninterrupted internet supply any time they want.
13. Aside that, management of the University of Ghana should investigate the peak usage of internet connectivity on campus and prioritize request emanating from the Balme Library.
14. Investments should also be channeled in renewing software that maybe outdated to current versions that include up-to-date functionalities.

6.5 Implication of Research

Findings from the present study have both theoretical and managerial implications. The study contributes to practice by drawing the attention of academic library managers to the organizational factors that either enable or hinder the smooth adoption and use of ICT systems in Ghanaian academic libraries. Thus, academic libraries that intend to implement ICT must have a fundamental comprehension of the organizational characteristics, a body of knowledge that was in dearth to several academic libraries especially in most developing countries.

Therefore, academic libraries in Ghana that are planning to automate in the future can make a critical assessment to determine if the organizational structure, organizational culture, human

resource capabilities and the availability of physical ICT infrastructure are mutually aligned with their strategic goal of using ICT.

The study will also benefit particularly from studies on revised approaches of ICT development most especially in academic libraries. Differences between academic libraries in developing countries in relation to new ICT adoption strategies in developed nations should be examined.

With regards to policy, it is believed that putting in place the necessary structures and reorganizing already existing structures in an ICT environment will positively enhance its development and use in academic libraries. The enabling environment in the form of organizational restructuring, massive investment in ICT infrastructure and instituting policies geared towards developing staff competencies and skills will propagate the ICT agenda in academic libraries thereby stimulating its effective and efficient utilization.

Again, policies on the use of ICT should be structured taking into consideration the different organizational factors for the various stakeholders in the academic library setting. This will provide a comprehensive policy which will ultimately lead to the full adoption of ICT, hence library staff will not only use ICT to carry out library services which previously were manual but rather be innovative in introducing new services and products which are supported by the use of ICT.

With respect to the present study's contribution to knowledge, it can be concluded that this study might not offer the last word on the research topic, nonetheless, it makes one bold step in the direction of achieving a better understanding of how the internal characteristics of an organization affects its use of ICT. Though the research concentrated on one of the biggest and oldest academic libraries in Ghana, the implications of the study are of great value to other academic libraries as well and especially for those that plan to implement ICT in the future.

6.6 Suggestions for Future Studies

Any research work inevitably is expected to encounter some basic limitations, and this study is no exception. Firstly, the timeframe for the completion of this research was a significant constraining element which influenced the conduct of a comprehensive research. However, in view of these difficulties, all attempts were made to undertake a valid and comprehensive study. Again, the study was limited to the University of Ghana, Balme Library, thereby, making it difficult for generalization to other academic libraries. In view of the above, the study proposes that:

1. Focusing the study on only the University of Ghana, Balme Library did not afford the researcher the ability of seeking alternating views from other academic libraries which could have been a basis for comparison. There is therefore the need for researches to be conducted on the peculiar organizational factors affecting other academic libraries in Ghana within the context of their internal library structures since the findings of this study cannot be over generalized because the organizational factors that may be peculiar with one academic library may vary in another. Future studies could carry out a comparative study between a public and private university library or between an older and newer university library to see how the dynamics play out in different academic library settings. By comparing and contrasting the responses, the organizational factors affecting the use of ICT systems in other academic libraries could be fully explored and new insights gained.
2. Despite the numerous organizational factors that affect ICT systems in organizations, the present study only focused on five (5) organizational factors namely structure, culture, top management, human and infrastructural resources and how they affect ICT systems at the Balme library. Future studies could explore other organizational factors such as leadership/management style, internal politics, organizational climate,

managerial IT knowledge and organizational goal alignment to see how these factors also influence the use of ICT systems in academic libraries.

3. Lastly, the study adopted a quantitative approach. Thus, the findings of the present study missed out on some important insights that could have added some depth and validity to the study. This study therefore recommends a mixed-method (triangulation) approach in a single study to get more in-depth views and different perspectives on the topic (Eze *et al.,* 2013).

REFERENCES

Aabø, S & Audunson, R. (2012). Use of library space and the library as place. *Library & Information Science Research 34(2),* 138–149.

Achugbue, I. E., Uwaifo, S. O., & Igun, S. E. (2015). Librarians Knowledge of Information and Communication Technology Hardware Usage in University Libraries in South-South and South-West, Nigeria. *Information and Knowledge Management 5(5),* 70-74.

Adanu, T. S. A. (2006). Planning and Implementation of the University of Ghana Library Automation Project. *African Journal of Library, Archives and Information Science*, *16*(2), 101–108.

Adekanye, E. A. (2011). Computerization of the Fatiu Ademola Akesode Library, Lagos State University. *Library Philosophy and Practice*. Retrieved from http://Www.Webpages.Uidaho.Edu/~Mbolin/Adekanye.Htm

Adekunle, P.A., Omoba, R.O. & Tella, A. (2007), Attitudes of librarians in selected Nigerian universities toward the use of ICT. *Library Philosophy and Practice*, available at: http://unllib.unl.edu/LPP/tella3.htm

Adeyinka, T. (2012). Attitudinal correlates of some selected Nigerian librarians towards the use of ICT. *International Journal of Information Science and Management (IJISM)*, *7*(1), 15-30.

Adeyoyin, S. O. (2005). Information and Communication Technology (ICT) Literacy among the Staff of Nigerian University Libraries. *Library Review, 54(4),* 257-266.

Agyen-Gyasi, K, Lamptey, R. & Frempong, A. (2010) Academic Librarians' Role in Maximizing Library Use in Ghana. Retrieved from Dspace. Knust. Edu.Gh:8080/.

Ahenkorah-Marfo, M., & Borteye, E. M. (2010). Networking the Library Catalogue: Lessons from the Kwame Nkrumah University of Science and Technology Library, Kumasi, Ghana.

Ahmad, S. (2014). Technology in Organizations. *International Journal of Research in Business Management, 2(7),* 73–80.

Ajayi, G. O. (2002). *African response to the information communication technology revolution.* ATPS Special Paper (No. 8). African Technology Policy Studies Network.

Akpan, A., & Madu, U. A. (2014). Effective Planning Strategies: A Key Component for Implementation of Automation in Academic Libraries. *Information and Knowledge Management, 4(1)*, 31-36.

Alemna, A., & Adanu, T. (2005). Internet use at the Balme Library, University of Ghana. *Library hi tech news*, *22(2),* 25-26.

Al-Fadhli, M., Corrall, S. & Cox, A. M. (2016). Factors Underlying Technology Adoption in Academic Libraries in Kuwait. *New Review of Academic Librarianship, 22(4),* 370-390.

Al-Ghaith, W., Sanzogni, L., & Sandhu, K. (2010). Factors Influencing the Adoption and Usage of Online Services in Saudi Arabia. *The Electronic Journal of Information Systems in Developing Countries*, *40(1),* 1-32.

Al-Hatmi, A. (2012). Analysis of ICT Strategic Alignment in a Public Organization. *Epublications@Bond,* 1–322.

Alshaher, A. A. F. (2013). The McKinsey 7S model framework for e-learning system readiness assessment. *International Journal of Advances in Engineering & Technology*, *6(5),* 1948.

Alvo, M., & Philip, L. H. (2014). *Statistical methods for ranking data*. New York: Springer.

Amedahe, F. K. (2002). *Notes on educational research*. Cape Coast: University of Cape Coast (Unpublished).

Amekuede J. O. (2005). Evaluation of Library Automation in Some Ghanaian University Libraries. *The Electronic Library 23(4)*, 442-452.

Ani, O. E., Esin, J. E., & Edem, N. (2005). Adoption of Information and Communication Technology (ICT) in Academic Libraries: A Strategy for Library Networking in Nigeria. *The Electronic Library*, *23*(6), 701-708.

Ankrah, E. (2014). *The Impact of Information Systems Strategy on Bank Performance in Ghana* (Doctoral Dissertation) University of Ghana, Legon.

Anyaoku, E. N., Osuigwe, N. E., & Oguaka, C. N. (2015). Technology and Job Satisfaction in Academic Libraries: Role of Leadership Style and Librarians' Attitude. *International Journal of Library Science*, *4(4),* 73-80.

Arinola, A. A. (2012). Impact of ICT on Cataloguing & Classification of Library Materials; Case Study of Some Selected University Libraries in South-West Nigeria. *American International Journal of Contemporary Research*, *2(6),* 122–127.

Asante, E., & Alemna, A. A. (2015). Training and Development Issues: Evidence from Polytechnic Libraries in Ghana. *Library Philosophy and Practice,* Paper 1221.

Atiso, K., & Adkins, D. (2015). Librarians, Research Scientists and ICT Adoption in Research Institutes in Ghana. *Library Philosophy and Practice*. Retrieved from Http://Digitalcommons.Unl.Edu/Cgi/Viewcontent.Cgi?Article=3427&Context=Libphilprac

Awan, R. M., & Mahmood, K. (2010). Relationship among Leadership Style, Organizational Culture and Employee Commitment in University Libraries. *Library Management*, *31(4/5),* 253-266.

Babafemi, M. A. (2017). Factors Affecting Librarians' Approach towards IT Application in Libraries in Nigeria. *SCIREA Journal of Information Science and Systems Science, 2(2),* 29-39.

Babbie, E. (2005). *The Basics of Social Research.* Belmont, CA: Thompson Learning.

Babu, R.B., Vinayagamoorthy, P. & Gopalakrishnan, S. (2007). ICT skills among librarians in engineering. Educational institutions in Tamil Nadu", *DESIDOC Bulletin of Information Technology*, 27(96), 55-64.

Badu, E. E. & Loughridge, B. (1997). Towards an Information Provision Strategy for University Libraries in Ghana. *Information Research, 3(2)*. Also Available At: Http//Information.Net/Ir/3-2/Paper38.Html

Badu, E. E., & Markwei, E. D. (2005). Internet awareness and use in the University of Ghana. *Information development*, *21*(4), 260-268.

Banda, C. (2010). The Use of Web 2.0/Social Networking Tools by Librarians in Public University Libraries in Zambia: Copperbelt University, Mulungushi University and University of Zambia. *Zambia Library Association Journal*, *25(1-2),* 44-54.

Bandura, A. (2006). Toward A Psychology of Human Agency. *Perspectives on psychological science, 1(2), 164-180.*

Baro, E. E. (2011). A Critical Examination of Information and Communication Technology Policies: Effects on Library Services in Nigeria. Retrieved from http://Digitalcommons.Unl.Edu/Libphilprac/464/

Barton, M. R., & Waters, M. M. (2004). *Creating an Institutional Repository: LEADIRS Workbook*. Retrieved from Http://Dspace.Org/Implement/Leadirs.Pdf

Barzekar, H., & Karami, M. (2014). Organizational Factors that affect the Implementation of Information Technology: Perspectives of Middle Managers in Iran. *Acta Informatica Medica*, *22(5),* 325.

Bateman, T. S., & Snell, S. (1999). *Management: Building Competitive Advantage*. (4th ed.). New York: Irwin/McGraw-Hill.

Beeson, I & Soud, A. (2003). Survey of Strategic Alignment Indicators in Manufacturing Companies in the Southwest of England", *In Proceeding of the Second CEMS Research Student Conference*, Bristol.

Belassi, W., & Tukel, O. I. (1996). A new framework for determining critical success/failure factors in projects. *International journal of project management*, *14(3),* 141-151.

Bentil, W. (2011). *The Use of Electronic Resources in Ghanaian Universities: A comparative Study of the University of Cape Coast and the Central University College*. (An Unpublished M. Phil thesis). Department of Information Studies, University of Ghana, Legon.

Bezweek, S. A., & Egbu, C. O. (2010, May). The impact of information technology to facilitate communication and collaboration in Libyan public organizations. In *CIB World Congress 2010 (Vol. 1).* School of Built Environment. The University of Salford.

Bordia, P., Restubog, S. L. D., Jimmieson, N. L., & Irmer, B. E. (2011). Haunted by the past: Effects of poor change management history on employee attitudes and turnover. *Group & Organization Management, 36(2),* 191-222.

Borgman, C. L. (1997). From Acting Locally to Thinking Globally: A Brief History of Library Automation. *The Library Quarterly*, *67*(3), 215-249.

Brodar, K., Čalopa, M. K., & Pihir, I. (2009). Impact of ICT on the Structural and Contextual Organizational Elements: Case of the Varaždin County. *Journal of Information and Organizational Sciences*, *33(2),* 243–254.

Brooks, M. G. (2007). *Organizational Leadership in Academic Libraries: Identifying Culture Types and Leadership Roles.* (Doctoral Dissertation). Marshall University Graduate College.

Bryant, J., Matthews, G., & Walton, G. (2009). Academic libraries and social and learning space: A case study of Loughborough University Library, UK. *Journal of Librarianship and Information Science. 41(1),* 7–18.

Budd, J. M. (2005). The Changing Academic Library: Operations, Culture, Environments. *Association of College & Research Library. (No. 56).*

Burton, S., & Steane, P. (Eds.). (2004). *Surviving your thesis*. New York: Routledge, Taylor and Francis Group.

Buruncuk, G., & Gülser, Z. G. (2004). Factors Affecting Implementation of Information Systems Success and Failure. *Management Information System Istanbul*, 1-10.

Cameron, K. S., & Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*. John Wiley & Sons.

Carvalho, M. A. C. (2010, April). Innovation as a Strategy for Academic Libraries to Survive Change. In *Actas Do Congresso Nacional De Bibliotecários, Arquivistas E Documentalistas.* (No. 10).

Chairoel, L., Widyarto, S., & Pujanic, V. (2015). ICT Adoption in Affecting Organizational Performance among Indonesian SMEs. *The International Technology Management Review*, *5(2),* 82–93.

Chandrasekar, K. (2011). Use of Information Communication Technology (ICT) In Communicable Disease Surveillance–A Review of Literature. Retrieved from http://repo.lib.jfn.ac.lk/ujrr/handle/123456789/42

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping Up for E-Commerce: Institutional Enablers of The Organizational Assimilation of Web Technologies. *MIS Quarterly*, 65-89.

Chebrolu, S. B., & Ness, L. (2013). How Does Alignment of Business and IT Strategies Impact Aspects of IT Effectiveness? *International Journal of Applied Management and Technology*, *12*(1).

Chen, M. (2003). Factors Affecting the Adoption and Diffusion of XML and Web Services Standards for E-Business Systems. *International Journal of Human-Computer Studies, 58(*3), 259-279.

Christensen, J. F. (2006). Wither Core Competency for The Large Corporation in An Open Innovation World. *Open Innovation: Researching a New Paradigm*, 35-61.

Christians, C. G. (2000). *6 Ethics and politics in qualitative research*. In Denzin, N. K & Lincoln, Y. S. (Eds.). *The Sage Handbook of Qualitative Research.* Thousand Oaks, CA: Sage Publications. pp. 139-164.

Cleveland, G. (1998). *Digital Libraries: Definitions, Issues and Challenges*. IFLA, Universal Dataflow and Telecommunications Core Programme.

Collis, J., & Hussey, R. (2013). *Business research: A practical guide for undergraduate and postgraduate students*. Palgrave MacMillan.

Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods.* (8th ed.). New York: McGraw Hill.

Creswell, J. W. (2003). *Research design: qualitative, quantitative and mixed Methods approaches* (2nd ed.). London: Sage publications.

Creswell, J. W. (2012). *Qualitative inquiry and research design. Choosing among five approaches.* Thousand Oaks CA: Sage Publications.

Dadzie, P., & Van Der Walt, T. (2015). Access and Use of Digital Resources: A Survey of their Value for Faculty in three Ghanaian Universities. *Libri, 65(1),* 57-70.

Daft, R. L. (2007). *Organization Theory and Design*. (9th ed.). Ohio: Thompson South Western.

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering Implementation of Health Services Research Findings into Practice: A Consolidated Framework for Advancing Implementation Science. *Implementation Science*, *4*(1), 1–15.

Dekkers, C., & Forselius, P. (2007, August). Increase ICT project success with concrete scope management. In *Software Engineering and Advanced Applications, 2007. 33rd EUROMICRO Conference on* (pp. 385-392). IEEE.

Del Aguila-Obra, A. R., & Padilla-Meléndez, A. (2006). Organizational Factors affecting Internet Technology Adoption. *Internet Research*, *16*(1), 94–110.

Delic, A., & Nuhanovic, S. (2010). The Organizational Structure and Organizational Culture Interdependence Analysis with a Special Reference to Bosnian and Herzegovinian Enterprises. *Economic Analysis*, *43*(3-4), 70-86.

Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Dess, G. G., Lumpkin, G.T & Taylor, M. L. (2005). *Strategic Management* (2nd ed.). New York: McGraw-Hill Irwin

Desson, K., & Clouthier, J. (2010). Organizational Culture–Why does it Matter? In *Symposium on International Safeguards International Atomic Energy Agency Vienna, Austria*. *Iaea*, 1–9.

Dewett, T., & Jones, G. R. (2001). The role of information technology in the organization: a review, model, and assessment. *Journal of management*, *27*(3), 313-346.

Dezdar, S., & Ainin, S. (2011). The Influence of Organizational Factors on Successful ERP Implementation. *Management Decision, 49(6),* 911-926.

Dhanavandan, S., Esmail, S.M. & Mani, V. (2008). A study of the use of information and communication technology (ICT) tools by librarians. *Library Philosophy and Practice*, available at: http://unllib.unl.edu/LPP/dhanavandan-esmail-mani.htm

Elbert, M., Fuegi, D., & Lipeikaite, U. (2012). Public Libraries in Africa–Agents for Development and Innovation? Current Perceptions of Local Stakeholders. *IFLA Journal*, *38*(2), 148-165.

Emojorho, D. (2013). Assessment of Academic Libraries in Knowledge Management for Human Capital Development in Tertiary Institution in Delta State, Nigeria. *International Journal of Library and Information Science, 5(10),* 426-431

Everitt, B. S. (2006). *Medical Statistics from A to Z: A Guide for clinicians and medical students.* (2nd ed.). Cambridge: Cambridge University Press.

Eze, S. C., Awa, H. O., Okoye, J. C., Emecheta, B. C., & Anazodo, R. O. (2013). Determinant factors of Information Communication Technology (ICT) Adoption by Government Owned Universities in Nigeria- A qualitative approach. *Journal of Enterprise Information Management Vol. 26 No. 4*, 427-443.

Farzandipur, M. (2016). Factors affecting successful implementation of hospital information systems. *Acta Informatica Medica*, *24(1),* 51.

Fine, M., Weis, L., Weseen, S., & Wong, L. (2000). For whom. *Qualitative research, representations, and social responsibilities.* In Denzin, N. K & Lincoln, Y. S. (Eds.). *Handbook of qualitative research*, (2nd ed.). Thousand Oaks, CA: Sage Publications. pp. 107-132.

Fisher, S. L., & Howell, A. W. (2004). Beyond user acceptance: An examination of employee reactions to information technology systems. *Human Resource Management*, *43(2-3)*, 243-258.

Fleisher, C. S., & Bensoussan, B. E. (2015). *Business and competitive analysis: effective application of new and classic methods*. FT Press.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2015). *How to Design and Evaluate Research in Education (9th ed.).* New York: McGraw-Hill.

Gagnon, M. P., Desmartis, M., Labrecque, M., Car, J., Pagliari, C., Pluye, P., ... & Légaré, F. (2012). Systematic Review of Factors Influencing the Adoption of Information and Communication Technologies by Healthcare Professionals. *Journal of Medical Systems*, *36*(1), 241-277.

Gentile, S. (2012). Project Management in the Information Technology Industry, *Brandeis*

Gerhart, B. (2009). How much does national culture constrain organizational culture? *Management and Organization Review*, *5*(2), 241-259.

Ghobakhloo, M., Hong, T. S., Sabouri, M. S., & Zulkifli, N. (2012). Strategies for successful Information Technology adoption in Small and Medium-sized Enterprises. *Information*, *3*(1), 36-67.

Gichoya, D. (2005). Factors Affecting the Successful Implementation of ICT Projects in Government. *The Electronic Journal of E-Government*, *3*(4), 175-184.

Gleeson, M. (2004). *The Link between Business Strategy and Information Systems.* Dublin Institute of Technology, School of Computing Research Paper (ITSM), Ireland.

Goodman, E. A., Zammuto, R. F., & Gifford, B. D. (2001). The Competing Values Framework: Understanding the Impact of Organizational Culture on the Quality of Work Life. *Organization Development Journal*, *19*(3), 58.

Grainger, R., & Tolhurst, D. (2005, October). Organizational Factors Affecting Teachers' Use and Perception of Information & Communications Technology. In *Proceedings of the 2005 South East Asia Regional Computer Science Confederation (SEARCC) Conference-Volume 46* (Pp. 13-22). Australian Computer Society, Inc.

Haag, S., Cummings, M., & Mccubbrey, D. (2009). Management Information Systems for the Information Age" (3rd ed.). New York: McGraw–Hill Irwin.

Haliso, Y. (2011). Factors Affecting Information and Communication Technologies (ICTs) Use by Academic Librarians in Southwestern Nigeria. *Library Philosophy and Practice (E-Journal).* 571.

Hanafizadeh, P., & Ravasan, A. Z. (2011). A Mckinsey 7S Model-Based Framework for ERP Readiness Assessment. *International Journal of Enterprise Information Systems (IJEIS)*, *7*(4), 23-63.

Hannagan, T., & Bennett, R. (2004). *Management: Concepts & Practices*. (4th ed.). Upper Saddle River, New Jersey: Financial Times/Prentice Hall.

Harding, J. (2006). *"Grounded Theory," in The Sage Dictionary of Social Research Methods,* V. Jupp, ed., London: Sage Publications. pp. 131–132.

Hofstede, G. (1999). Problems Remain, But Theories Will Change: The Universal and the Specific In 21st-Century Global Management. *Organizational Dynamics*, *28*(1), 34-44.

Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: making sense of consensus. *Practical assessment, research & evaluation*, *12*(10), 1-8.

Hussein, R., Selamat, M. H., Anom, R. B., Karim, N. S. A., & Mamat, A. (2005). The Impact of Organizational Factors on Information Systems Success: An Empirical Investigation in the Malaysian Electronic Government Agencies. Retrieved from *On Line. Kmap2005. Vuw. Ac. Nz/Papers/The% 20Impact% 20of% 20Org. Factors% 20on. Pdf*.

Imenda, S. (2014). Is There a Conceptual Difference between Theoretical and Conceptual Frameworks? *Journal of Social Sciences*, *38*(2), 185-195.

Indeje, W. G., & Zheng, Q. (2010). Organizational Culture and Information Systems Implementation: A Structuration Theory Perspective. *Sprouts: Working Papers on Information Systems*, 10(27).

Islam, S., & Islam, N. (2006). Information and Communication Technology (ICT) In Libraries: A New Dimension in Librarianship. *Asian Journal of Information Technology, 5(8),* 809-817.

Iwhiwhu, B. E., & Okorodudu, P. O. (2012). *Public Library Information Resources, Facilities, and Services: User Satisfaction with the Edo State Central Library, Benin-City, Nigeria.* Retrieved from Http://Digitalcommons.Unl.Edu/Libphilprac

Jain, P. (2013). A Paradigm Shift in the 21st Century Academic Libraries and Librarians: Prospectus and Opportunities. *European Journal of Academic Research*, *1*(3), 133-147.

Jeevan, V. K., & Nair, S. S. (2004). Information Technology Adoption in Libraries of Kerala: A Survey of Selected Libraries in Thiruvananthapuram. *Annals of Library and Information Studies, 51* (4), 137-144.

Jewczyn, M. N. (2010). Assessing Mechanistic and Organic Organizational Structures: Measuring Organizational Uncertainty and Determining an Organization's Proper Structure. *Journal of Virtual Leadership, 1(6).*

Johnson, B., & Christensen, L. (2004). *Educational research: Quantitative, qualitative, and mixed approaches*. Boston: Allyn and Bacon.

Jones, G. R & George, J. M. (2014). *Essentials of Contemporary Management*. (6th ed.). McGraw-Hill Higher Education.

Jones, K. (2010). *The practice of quantitative methods.* In Somekh, B. & Lewin, C. (Eds.). *Research Methods in the Social Sciences*. Sage Publications, pp. 201 – 211.

Joseph, V., & Schneider, C. (2010). *Information Systems Today: Managing in the Digital World. (*4th ed.). New Jersey: Prentice-Hall.

Jouirou, N., & Kalika, M. (2004). Strategic Alignment: A Performance Tool (An Empirical Study of Smes). *AMCIS 2004 Proceedings*, 467.

Kaarst-Brown, M. L., Nicholson, S., Von Dran, G. M., & Stanton, J. M. (2004). Organizational Cultures of Libraries as a Strategic Resource. *Journal of Library Trends. 53 (1),* 33-53.

Kefi, H., & Kalika, M. (2005, January). *Survey of Strategic Alignment Impacts on Organizational Performance in International European Companies.* In System Sciences, 2005. HICSS'05. Proceedings of the 38th Annual Hawaii International Conference on (Pp. 230c-230c). IEEE.

Khalil, T. M. (2000). *Management of Technology: The Key to Competitiveness and Wealth Creation*. McGraw-Hill Science, Engineering & Mathematics.

Kothari, C. R. (2009). *Research methodology: An introduction.* New Delhi: International Publishers New Delhi.

Kott, K (2013). *Innovative Organizational Design in Academic Libraries.*

Koul, L. (2002). *Research methodology in education.* London: Sages Publications.

Krubu, D., & Osawaru, K. (2010). The Impact of Information and Communication Technology (ICT) In Nigerian University Libraries. *Library Philosophy and Practice (E-Journal).* 515. Retrieved from Http://Digitalcommons.Unl.Edu/Libphilprac/515

Kulvinskienė, V. R., & Šeimienė, E. S. (2009). Factors of Organizational Culture Change. *Ekonomika*, *87*.

Kumar, R (2011). *Research methodology: A step-by-step guide for beginners.* London: Sage. Retrieved from http://www.sagepublications.com.

Kumar, S., & Phrommathed, P. (2005). *Research methodology* (pp. 43-50). Springer US.

Kyobe, M. (2011). Investigating the key factors influencing ICT adoption in South Africa. *Journal of systems and information technology*, *13*(3), 255-267.

Laudon, K.C., & London, J. P. (2007). *Business Information Systems.* New York: HBJ, College Publishers.

Laudon, K. C., & Laudon, J. P. (2010). *Managing Information Systems: Managing the Digital Firm.* (11th ed.). New Jersey: Pearson Education.

Laudon, K. C., & Laudon, J. P. (2014). *Management Information Systems: Managing the Digital Firm plus Mymislab with Pearson e-text--Access Card Package*. (12th ed.). New Jersey: Prentice Hall Press.

Laudon, K. C., & Laudon, J. P. (2016). *Management Information System*: *Managing the Digital Firm.* (14th ed.). Boston: Pearson Education.

Lawal-Solarin, E. O. (2013). The Use of Information and Communication Technology (ICT) in Academic Libraries in Nigeria: A Case Study of Covenant University Library Ota, Nigeria. Retrieved from http://eprints.covenantuniversity.edu.ng/1654/

Leedy, P. D., & Ormrod, J. E. (2010). *Practical Research Planning and Design. (*9th ed.). New Jersey: Pearson Hall.

Lewin, C. (2005). *Elementary Quantitative Methods*. Research Methods in the Social Sciences, 215-225.

Lucey, T. (2005). *Management Information Systems*. (9th Ed.). London: Cengage Learning EMEA.

Lunenburg, F. C. (2012). Mechanistic–Organic Organizations–An Axiomatic Theory: Authority Based on Bureaucracy or Professional Norms. *International Journal of Scholarly Academic Intellectual Diversity, 14(1), 1-7.*

Macharia, J. K., & Pelser, T. G. (2014). Key Factors That Influence the Diffusion and Infusion of Information and Communication Technologies in Kenyan Higher Education. *Studies in Higher Education*, *39*(4), 695-709.

Maditinos, D., Chatzoudes, D., & Tsairidis, C. (2011). Factors Affecting ERP System Implementation Effectiveness. *Journal of Enterprise Information Management, 25(1),* 60-78.

Majid, S., Anwar, M. A., & Eisenschitz, T. S. (2001). User Perceptions of Library Effectiveness in Malaysian Agricultural Libraries. *Library Review*, *50*(4), 176-186.

Malhotra, N. K., & Birks, D. F. (2007). *Marketing Research.* Harlow: Pearson Education.

Mandel, L. H. (2013) Finding their way: How public library users way find. *Library & Information Science Research. 35(4):* 264–271.

McGivern, Y. (2006). *The practice of market and social research: An introduction.* (2nd ed.). London: Pearson Education.

McShane, S. L., Steen, S. L., & Tasa, K. (2009). *Canadian organizational behaviour* (p. 115). Toronto: McGraw-Hill Ryerson.

Mehri nejhad, S. (2004). Applying IT in organizations. *Political Economical Information Journal,* No.181-182.

Melitski, J., Gavin, D., & Gavin, J. (2010). Technology Adoption and Organizational Culture in Public Organizations. *International Journal of Organization Theory & Behavior, 13*(4), 546-568.

Mintzberg, H. (2003). *The Strategy Process: Concepts, Contexts, Cases*. New York: Pearson Education.

Mirmasoudi, A., Farjami, Y., & Pourebrahimi, A. (2012). The Effect of IT on Organizational Structure (Case Study: Refah Bank in Guilan*). International Journal of Information, Security and Systems Management, 1(2),* 48-54.

Mullins, L. J. (2007). *Management and Organizational Behavior*. (8th ed.). Harlow: Pearson Education.

Muriithi, P., Horner, D., & Pemberton, L. (2016). Factors Contributing to Adoption and Use of Information and Communication Technologies within Research Collaborations in Kenya. *Information Technology for Development*, *22*(Sup1), 84-100.

Mutula, M. S. (2012). Library Automation in Sub Saharan Africa: Case Study of the University of Botswana. *Program*, *46*(3), 292-307.

Nazarian, A., Atkinson, P., & Foroudi, P. (2017). Influence of national culture and balanced organizational culture on the hotel industry's performance. *International Journal of Hospitality Management*, *63*, 22-32.

Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative approaches.* Toronto: Pearson Education Inc.

Neuman, W. L. (2007). *Basics of Social Research Methods: Qualitative and Quantitative Approaches.* (2nd ed.). Boston: Allyn and Bacon.

Ngacho, C., Obegi, F., & Sirma, J. (2014). An Analysis of Factors Influencing Implementation of Computer Based Information Systems in Public Universities in Kenya: A Case Study of Egerton University. *Information and Knowledge Management, 4(8),* 19-25.

Ng'ang'a, J. M., & Nyongesa, W. J. (2012). The Impact of Organizational Culture on Performance of Educational Institutions. *International Journal of Business and Social Science*, *3*(8).

Nie, N. H., Bent, D. H., & Hull, C. H. (1970). *SPSS: Statistical package for the social sciences* (No. HA29 S6). New York: McGraw-Hill.

Nikčević, G. (2016). The Influence of Organizational Culture on Leadership. A Case Study of Montenegro. *Tehnicki Vjesnik/Technical Gazette*, *23*(1).

Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science*, *10*(1), 53.

Normandin, B. (2012). Three types of change management models. *Retrieved on*, *30*(6), 2014.

Nusa, I. B. S. (2015). Influence of Organizational Culture and Structure on Quality of Accounting Information System. *International Journal of Scientific & Technology Research*, *4*(05).

O'Brien, J. (2001). *Introduction to Information Systems: Essentials for the Internet Worked E-Business Enterprise.* (11th ed.). New York: McGraw-Hill Higher Education.

Obasan, K. (2012). Organizational Culture and Its Corporate Image: A Model Juxtaposition. *Business and Management Research*, *1*(1), 121.

Odeh, P. (2011). *Utilization of Information and Communication Technologies (ICTS) By Students in Federal University Libraries in North-Central Zone of Nigeria.* (Master's Dissertation, Department of Library and Information Science) University of Nigeria, Nsukka.

Odera, M. A. (2017). *Influence of Organizational Factors on The Implementation of Change from In-Kind Assistance to Cash Based Transfers: A Case of World Food Programme, Dadaab Refugee Camp, Kenya.* (Master's Thesis) University of Nairobi, Kenya).

Okiy, R. B. (2010). Globalization and ICT in Academic Libraries in Nigeria: The Way Forward. *Library Philosophy and Practice (E-Journal)*. 501.

Olu, A. S. (2005). Information and Communication Technology (ICT) Literacy among the Staff of Nigerian University Libraries. *Library Review, 54*(4), 257-266.

Omotayo, A. O., & Adenike, A. A. (2013). Impact of Organizational Culture on Human Resource Practices: A Study of Selected Nigerian Private Universities. *Journal of Competitiveness*, *5*(4).

Onoriode, K. O., Oghenetega, I., & Jackson, A. (2012). A review of issues in information and communication technology (ICT) planning and implementation in academic libraries in Nigeria. *Library Hi Tech News*, *29*(8), 11-17.

Orlikowski, W. J. (2008). *Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations.* In *Resources, Co-Evolution and Artifacts*. London: Springer. Pp. 255-305

Orodho, A. J., & Kombo, D. K. (2002). Research Methods. *Nairobi: Kenyatta University, Institute of Open Learning*.

Osuala, E. C. (Ed.) (2005). *Introduction to Research Methodology*. Onitsha: Africana-First Publishers PLC.

Owusu-Ansah, C. M., & Adjei, K. O. K. (2015). Assessing Information and Communication Technology (ICT) Resources in Polytechnic Libraries in Ghana. Retrieved from: http://ir.kstu.edu.gh:8000/xmlui/handle/123456789/11

Panneerselvam, R. (2004). *Research methodology.* New Delhi: Prentice-Hall.

Parker, S., & Gallivan, C. (2004). Sampling versus census: A comparative analysis. *Foresight Survey Support International, Inc*.

Peters, T. J., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best-run companies.* New York: Warner.

Peyala, V. (2011). Impact of Using Information Technology in Central University Libraries in India: Results of a Survey. *Program*, *45*(3), 308-322.

Powell, R. R. & Connaway, L. S. (Eds.) (2004). *Basic Research Methods for Librarians. Library and Information Science Text Series.* Westport: Libraries Unlimited.

Quinlan, C., & Mcharg, H. (2012). The Emerging Library: Structure, Culture, and Lessons Learned from The Dissolution of a Combined Libraries–IT Organization. *Journal of Library Administration*, *52*(2), 147-161.

Ragsdell, G. (2000). Engineering a Paradigm Shift? A Holistic Approach to Organizational Change Management. *Journal of Organizational Change Management*, *13*(2), 104-120.

Ramzan, M., & Singh, D. (2009). Factors affecting Librarians' Attitudes toward IT Application in Libraries. *The Electronic Library*, *28*(2), 334-344.

Ravanfar, M. M. (2015). Analyzing Organizational Structure based on 7s model of McKinsey. *Global Journal of Management and Business Research*.

Rezaei, A., Asadi, A., Rezvanfar, A., & Hassanshahi, H. (2009). The Impact of Organizational Factors on Management Information System Success: An Investigation in the Iran's Agricultural Extension Providers. *The International Information & Library Review, 41*(3), 163-172.

Ridwan, S. M. (2015). Application of Information and Communication Technology in Management of Information Resources and Services in Kaduna State Tertiary Institutions' Libraries Kaduna-Nigeria. *European Scientific Journal, ESJ, 11(3).*

Robbins, S. P., & Coulter, M. K. (2009). *Management*. (10th ed.). Boston: Pearson International Edition.

Rohlfing, I. (2008). What you see and what you get: Pitfalls and principles of nested analysis in comparative research. *Comparative Political Studies*, *41*(11), 1492-1514.

Rossignoli, C. (Ed.). (2011). Emerging Themes in Information Systems and Organization Studies. *Springer Science & Business Media.*

Ruane, J. M. (2005). *Essentials of Research Methods. A guide to social Science Research.* Oxford: Blackwell Publishing.

Rubin, R. E. (2010). *The Values and Ethics of Library and Information Science.* New York: Neal-Schuman Publishers, Inc.

Rue, L., Byars, L., & Ibrahim, N. (2012). *Management: Skills & Application* (14th ed.). McGraw-Hill Higher Education.

Saidel, J. R., & Cour, S. (2003). Information technology and the voluntary sector workplace. *Nonprofit and Voluntary Sector Quarterly*, *32*(1), 5-24.

Saleem, A., SZ, S. T., & Batcha, M. S. (2013). Application and Uses of Information Communication Technology (ICT) In Academic Libraries: An Overview. *International Journal of Library Science, 2(3), 49-52.*

Sampath K. B. T., & Biradar, B. S. (2010). Use of ICT in College Libraries in Karnataka, India: A Survey. *Program, 44(3),* 271-282.

Sapsford, R. (2007). *Survey research*. London: Sage Publications.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Understanding research philosophies and approaches. Research methods for business students. 4*, 106-135.

Schiller, J. (2003). Working with ICT: Perceptions of Australian Principals, *Journal of Educational Administration, 41 (3*), 171-185.

Schonfeld, R. C. (2016). Organizing the Work of the Research Library. *Ithaka S+ R*. 28. Retrieved from http://prod.sr.ithaka.org/wp-content/uploads/2016/08/SR_Report_Organizing_Work_Research_Library_081816.pdf.

Sekaran, U. (2003). *Research methods for business: A skill building approach.* New Jersey: John Wiley & Sons.

Sekhon, J. S. (2004). Quality meets quantity: Case studies, conditional probability, and counterfactuals. *Perspectives on Politics*, *2*(2), 281-293.

Shafritz, J. M, Ott, S. J & Jang, Y. S. (2011). *Classics of Organizational Theory.* (7th ed.). Belmont, Calif: Wadsworth.

Shamekh, F. R. (2008). *Business-IT Strategic Alignment Concept in Theory and Practice* (Master's Thesis). Chalmers University of Technology.

Shuva, N. Z. (2005). Implementing Information and Communication Technology in Public Libraries of Bangladesh. *The International Information & Library Review*, *37(3),* 159-168.

Siddike, A. K., Munshi, N., & Sayeed, A. (2011). The Adoption of Information and Communication Technology (ICT) In the University Libraries of Bangladesh: An Exploratory Study. *Paper Delivered in The International Seminar "Vision"*.153-164.

Silvius, A. J., De Waal, B., & Smit, J. (2009). Business and IT Alignment; Answers and Remaining Questions. *PACIS 2009 Proceedings, 44*.

Singha, K., Satpathy, D., & Chandra, K. (2017). Change Management in New Age Libraries: A Case Study of Central Library, Nit Silchar.

Smith, B. J. (2015). Academic Library Management, Human Resources, and Staff Development: International Collaboration outside Traditional Boundaries. Creating Sustainable Community: *The Proceedings of The ACRL 2015 Conference* (1- 14).

Spacey, R., Goulding, A., & Murray, I. (2004). The Power of Influence: What Affects Public Library Staff's Attitudes to the Internet? *Library Management, 25(6/7)*, 270-276.

Spata, A. V. (2003). *Research methods: Science and diversity*. New Jersey: John Wiley & Sons, Incorporated.

Stare, A. (2011). The Impact of the Organizational Structure and Project Organizational Culture on Project. *Management*, *16*, 1–22.

Suku, J., & Pillai, M. G. (2005). Automation of University Libraries in Kerala Status, Problems and Prospects. *The Journal of Academic Librarianship*, *31*(2), 151-159.

Susan Mathew, K., & Baby, M. D. (2011). *Impact of information communication technology (ICT) on professional development and educational needs of library professionals in the Universities of Kerala* (Doctoral dissertation, Cochin University of Science & Technology).

Suri, G. (2005). Organizational Culture in ICT Implementation and Knowledge Management in Spanish and Indian Universities: A Conceptual Model. *Published in A Special Interest Groups of CSI*.

Tagoe, M. (2009). *A handbook for writing research proposals*. Accra: Ghana Universities Press.

Tait, E., Martzoukou, K., & Reid, P. (2016). Libraries for the future: the role of IT utilities in the transformation of academic libraries. *Palgrave Communications*, *2*, 16070.

Talab, S. M. G., & Tajafari, M. (2012). Impact of Information and Communication Technology (ICT) on Library Staff Training: A Comparative Study. *Annals of Library and Information Studies. Vol 59.* 7-15

Taylor, G. R. (Ed.). (2005). *Integrating Quantitative and Qualitative Methods in Research*. Oxford: University Press of America.

Tharp, B. M. (2009). Defining "Culture" And "Organizational Culture": From Anthropology to The Office. *Interpretation a Journal of Bible and Theology*, 1–5.

Thompson, E. S., & Pwadura, J. (2014). Library Automation at the University for Development Studies: Challenges and Prospects. *New Review of Academic Librarianship*, *20*(1), 66-77.

Tiwari, B. K., & Sahoo, K. C. (2013). Infrastructure and use of ICT in university libraries of Rajasthan (India). Retrieved from: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2199&context=libphilprac

University of Ghana Library Systems (2014, October) Strategic Plan 2014-2019.

Veisi, M., Veisi, K., & Hasanvand, H. (2012). The Effect of Organizational Culture on Organizational Structure (Case Study of Refah Banks Branches in Kermanshah City). *Journal of Basic and Applied Scientific Research*, *2*(4), 3880-3887.

Vithanage, D. K. A., & Wijayanayake, W. M. J. I. (2007, August). Insight to the large-scale Information Systems implementation in Sri Lanka. In *Industrial and Information Systems, 2007. ICIIS 2007. International Conference on* (pp. 33-40). IEEE.

Wang, J. (Ed.). (2012). *Project management techniques and innovations in information technology*. IGI Global.

Waweru, J. W. (2016). *The Role of Information and Communication Technology in Strategy Implementation at Jamii Telecommunications Limited in Kenya* (Doctoral Dissertation) University of Nairobi, Kenya.

Weerakkody, V., Dwivedi, Y. K., & Irani, Z. (2009). The diffusion and use of institutional theory: A cross-disciplinary longitudinal literature survey. *Journal of Information Technology*, *24*(4), 354-368.

Williams, T., & Channaveeraiah, L. (2008). From Automation to Transformation: Impact of ICT in LIS: Major Shifts & Practices.

Yeh, S. T., & Walter, Z. (2016). Critical Success Factors for Integrated Library System Implementation in Academic Libraries: A Qualitative Study. *Information Technology & Libraries*, *35*(3), 27–42

Zhen, Y., Garthwait, A., & Pratt, P. (2008). Factors Affecting Faculty Members' Decision to Teach or Not to Teach Online in Higher Education. *Online Journal of Distance Learning Administration, 11(3),* 18.

Other Sources: Web

1. **http://balme.ug.edu.gh/index.php/about-us/history [10/06/2018]**
2. http://www.upsa.edu.gh/pages/teaching--learning-resources/library-resources [11/06/2018]

APPENDIX I: QUESTIONNAIRE

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

UNIVERSITY OF GHANA, LEGON

Dear colleague,

This questionnaire seeks to elicit information from library staff on the "***Organizational Factors affecting Information and Communication Technology (ICT) Systems at the Balme Library***".

This research is in partial fulfillment of the requirements for the award of a Master of Philosophy (MPhil) degree in Information Studies. Your feedback will also help with the development and use of ICT systems at the Balme Library.

I shall therefore be very grateful if you could spare a few minutes to answer the questions posed in the questionnaire sincerely and to the best of your ability. Please be assured that your responses to the questions would be kept confidential and would be used solely for academic purpose. Your co-operation is fully appreciated. Thank you for your time.

Yours sincerely,

(**Frederic Naazi-Ale Baada**)

Student/Researcher

INSTRUCTION: ***Please, tick [√] the appropriate answer for the close-ended questions and answer the open-ended questions to the best of your knowledge.***

Section A: DEMOGRAPHIC DATA

1. Gender: a) Male [ ] b) Female [ ]
2. Age: a) 20-29 years [ ] b) 30-39 years [ ] c) 40-49 years [ ] d) 50-60 years [ ]
3. Current Department/Section/Unit: ……
4. Highest Academic Qualification Attained: a) Ph.D. [ ] b) MPhil/Masters [ ] c) BA/BSC [ ] d) Diploma/ HND [ ] e) DBS [ ] f) WASSCE/ SSSCE [ ] g) Other (*Please state*)……..
5. Designation within the University Library:
   a) Senior Member [ ] b) Senior Staff [ ] c) Junior Staff [ ]
6. Length of service in the University Library.
   a) Less than 5 years [ ] b) 6-10 years [ ] c)11-15 years [ ] d) More than 15 years [ ]

Section B: ORGANIZATION'S STRUCTURE: ***This section is intended to understand how the current decision-making structure in your library affects your use of ICT systems.***

Please choose the score that applies to your level of agreement or disagreement with the following statements about your organization using the scale: ***1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree.***

7.	***Formal control in the library is based on:***	***1***	***2***	***3***	***4***	***5***
a	Respecting strict rules and precisely defined procedures					
b	A vast number of written documents regulating library staff behavior					
c	Superiors monitoring all activities of subordinates in the library					

8.	***Level of centralization/decentralization in the library***	***1***	***2***	***3***	***4***	***5***
a	All decisions in the library are made by top management, without involving or consulting subordinates					
b	Subordinates are not included in setting organizational goals					
c	Communication in the library is strictly made by the top-down approach					

Section C: ORGANIZATION'S CULTURE: ***This section is intended to find out how the present work culture underpinning your library's operations, affects the use of ICT systems.***

9. With respect to your own views about the kind of culture (beliefs, values, and norms) at your workplace, please indicate your degree of agreement or disagreement with each statement using the scale: ***1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree***.

	Values and Norms	***1***	***2***	***3***	***4***	***5***
a)	My organization values creativity and innovation so employees can exercise discretion and take initiatives in their day-to-day activities.					
b)	My organization is formalized and structured with lots of procedures, rules and regulations that decide what people should do.					
c)	My organization is results-based and focuses on getting things done through competition among employees.					
d)	My organization is a very friendly, fun and sociable place to work where employees share a lot about themselves.					

Section D: TOP MANAGEMENT COMMITMENT AND SUPPORT: ***This section is meant to find out the level of top management commitment and support in using ICT at the Balme Library.***

10. Please choose the score that applies to your level of agreement or disagreement with the following statements concerning the level top management commitment and support for ICT using the scale: ***1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree.***

	Statements	***1***	***2***	***3***	***4***	***5***
a)	Top management has a very positive perception and attitude towards the use of ICT in your library.					
b)	Top management is committed towards the use of ICT in your library.					
d)	Top management motivates and rewards performance of staff who adjust to ICT advancement in your library.					
e)	Top management is quick to address problems and complains that arise from the use of ICT in your library.					

Section E: HUMAN RESOURCE CAPABILITIES: ***This section is intended to determine library staff perception, knowledge, competencies and training with regards to the use of ICT.***

11. Which of the following best expresses how you feel when you have to use technology relating to your work?

a) Hesitant [ ] b) Neutral [ ] c) Enthused [ ]

12. Please indicate your opinion regarding the application of ICT in your library using the following scale: ***1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree.***

	Attitude	*1*	*2*	*3*	*4*	*5*
a)	As more technology is introduced, my work gets harder					
b)	Extensive use of ICT has created job fears in me					
c)	ICT has added more responsibility to my work schedule					
d)	ICT offers more efficient ways to carry out my duties in the library					
f)	Use of computer creates health problems for me					

13. Generally, how would you rate your knowledge, skill and competency in the use of technology related equipment?

a) None [ ] b) Little [ ] c) Moderate [ ] d) Substantial [ ] e) In-depth [ ]

14. Kindly rate your knowledge and skill in the following ICT areas using the following scale: ***1-Good, 2-Avearge, 3-Poor and 4-Don't use***

	Service/Tools	*1*	*2*	*3*	*4*
a)	Applications (e.g. Installation, webpage designs, troubleshooting)				
b)	Web tools and Services (e.g. Blogs, Social media etc.)				
c)	Library Software Packages (e.g. Sierra, CDS/ISIS)				
d)	Technologies (e.g. Bar codes scanner)				
e)	Information Retrieval and Storage				

15. Have you received training in ICT from your institution over the last three years? (***If No, please move to the next section)***

a) Yes [ ] b) No [ ]

16. If yes to **Q.15**, how would you rate the content of your last training program in upgrading and improving your proficiency and skill in ICT?

a) Very effective [ ] b) Effective [ ] c) Ineffective [ ] d) very ineffective [ ]

Section F: PHYSICAL ICT INFRASTRUCTURE: ***This section is intended to assess the extensiveness of ICT infrastructure made available to support your use of ICT.***

17. Please choose the score that applies to your level of agreement or disagreement with the following statements using the scale: ***1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree and 5-Strongly Agree***

	Statements	***1***	***2***	***3***	***4***	***5***
a)	Equipment such as computers, scanners, printers and photocopiers are mostly modern and functional					
b)	Software and applications, I use in my department are mostly standard and up-to date					
c)	There is reliable and uninterrupted internet connection in the library					
d)	There is reliable and uninterrupted power supply in the library					
e)	Appropriate furniture (desk and chairs) are often provided to suit new technologies					
f)	A congenial space and environment is provided to support the use of ICT equipment in my department					

18. Kindly rate the level of adequacy of the following, needed to support the use of ICT in your department/unit using the scale: ***1-Very Inadequate, 2-Inadeqaute, 3-Moderate, 4-Adequate and 5-Very Adequate.***

	Items	***1***	***2***	***3***	***4***	***5***
	Physical Facilities					
a)	Dedicated space/room					
b)	Appropriate furniture (chairs and desks)					
	ICT Infrastructure					
c)	Telecommunication facilities (e.g. phones, facsimile)					
d)	Hardware infrastructure (e.g. Computers, printers, scanners etc.)					
e)	Networking infrastructure (e.g. LANs, Data Ports, cables etc.)					

19. How would you rate the level of technical support available for you when you encounter challenges in using ICT equipment?

a) Very Inadequate [ ] b) Inadequate [ ] c) Moderate [ ] d) Adequate e) Very Adequate [ ]

20. Overall Question: Please rank the following in order of the most critical organizational factors that are most likely to influence your decision to use ICT at the Balme Library, where ***1 is most important and 5 is least important*** to you.

	Factors	***1***	***2***	***3***	***4***
a)	Library's decision-making structure				
b)	Library's corporate culture				
c)	Top Management Support				
d)	Library staff ICT competencies				
e)	Availability of Physical Facilities and ICT Infrastructure				

Section G: RECOMMENDATIONS

21. Please write in the space provided below any suggestions that can lead to an improvement in the development and use of ICT at the Balme Library.

……..

……..

……..

……..

22. Any other information to be provided? Please state it below.

……

……

……

……

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX II: OBSERVATION INSTRUMENT

SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

DEPARTMENT OF INFORMATION STUDIES

UNIVERSITY OF GHANA, LEGON

Observation Schedule

To check the internet connectivity in various departments.

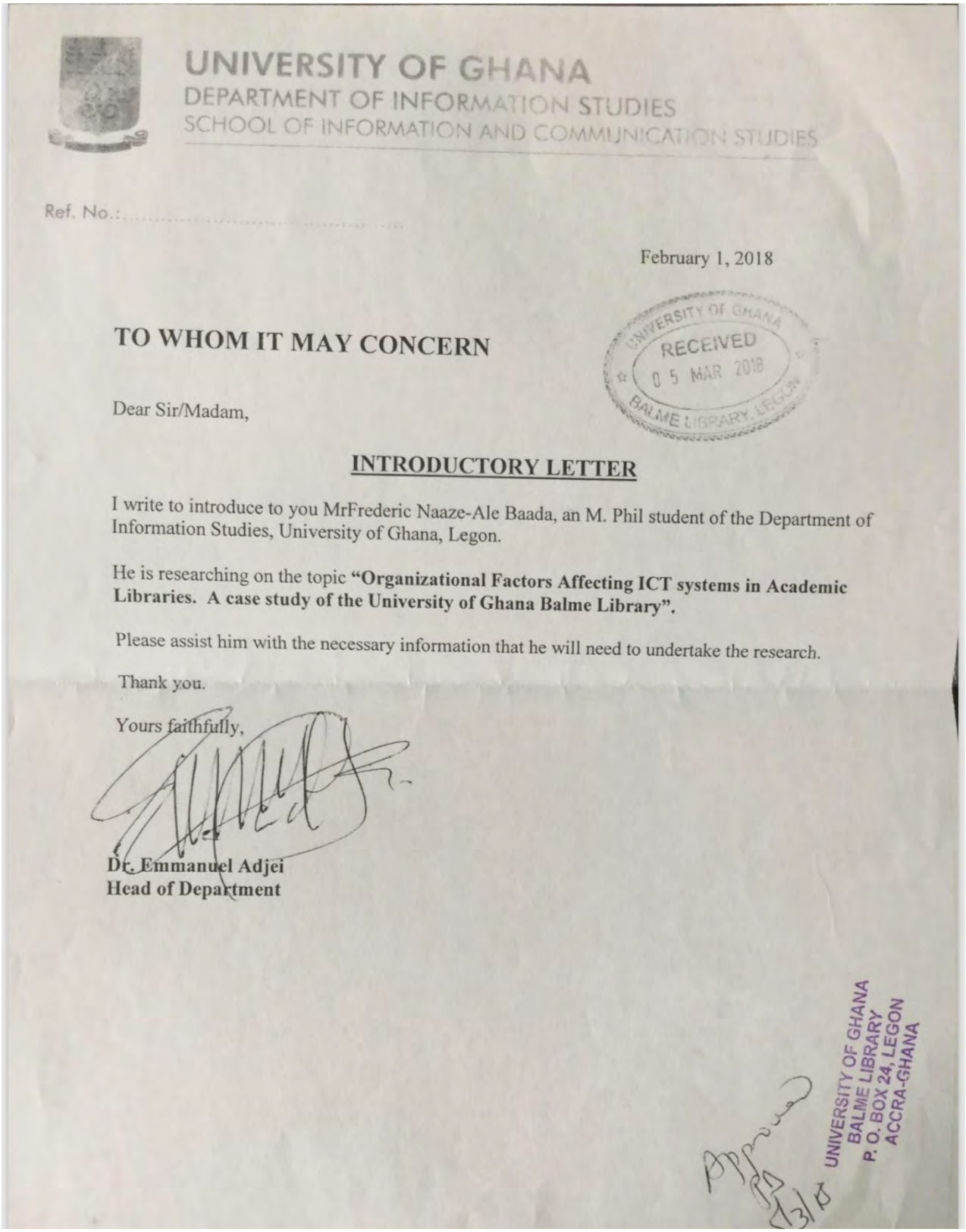
To check the availability of Wireless Internet Access Points.

To check on the availability of ICT facilities in all sections/departments of each library studied.

To observe the use of ICTs in all sections of each library visited.

To observe if librarians are using the available ICTs to perform their duties.

APPENDIX III: LETTER OF INTRODUCTION



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DEPARTMENT OF INFORMATION STUDIES
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

Ref. No.:.....

February 1, 2018

UNIVERSITY OF GHANA
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BALME LIBRARY, LEGON

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

INTRODUCTORY LETTER

I write to introduce to you MrFrederic Naaze-Ale Baada, an M. Phil student of the Department of Information Studies, University of Ghana, Legon.

He is researching on the topic **"Organizational Factors Affecting ICT systems in Academic Libraries. A case study of the University of Ghana Balme Library".**

Please assist him with the necessary information that he will need to undertake the research.

Thank you.

Yours faithfully,

Dr. Emmanuel Adjei
Head of Department

Approved
13/3

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DEPARTMENT OF INFORMATION STUDIES
SCHOOL OF INFORMATION AND COMMUNICATION STUDIES

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Head of Department