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Techno-Stress and Africentric Coping Strategies: An Exploratory Study among Academic Library Employees in Ghana.

Mini Dissertation

by

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DECLARATION

I hereby declare that this dissertation is my own composition for the Masters of Information Technology and that the work submitted does not contain any material published previously by any other author neither does it contain any material which has been presented to any other institution for the award of a degree and that due acknowledgement has been made where references have been made.

Frank Bonnah	……	……
Student	Signature	Date

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ABSTRACT

Building on current literature, the present study was primarily undertaken to explore techno-stress experiences among academic library employees at the University of Ghana. The study also sought to identify the Africentric coping strategies adopted. Other specific objectives pursued included; the determination of the relationship between techno-stress and other variables such as age, gender, educational qualification and work experience. In all, one hundred employees responded to a set of questionnaire. Data analytic methods included thematic analysis using Microsoft Excel and key findings were identified. Findings of the study showed that academic library employees experience techno-stress and are more likely to adopt appropriate Africentric coping strategies. Further findings reveals the existence of a linkage between techno-stress, level of education and work experience whereas there was no evidence of techno-stress relating to gender and age. Recommendations included; educating employees on techno-stress to be able to recognize its significant symptoms, the implementation of regular training sessions for employees to update their technological skills, and the need to reschedule the time patterns with which employees work and also the relevance of thriving organisations to employ highly qualified staff among others.

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CHAPTER ONE
INTRODUCTION

1.1 Background to the study

The organisation as a living system is predisposed to some negative consequences of the demands of the 21st century (Coyle-Shapiro & Shore, 2007: 28; Elfenbein, 2007). One of the variables that are critical to organisational productivity is the reduced sense of organisational commitment as a result of techno-stress (Omolara, 2008; Vakola & Nikolaou, 2005: 163). Some studies have showed that organisational commitment highlights the extent to which an individual recognises the ideals of the organisation and personally affiliates to its organisational goals and aims (Kreitner & Kinicki, 2006: 168). The term 'Techno-stress' is associated with Psychologist Craig Brod, and linked to the daily struggles with the use and adaptation of technologies used in organisations especially in the library setting (Prabhakaran & Mishra, 2012: 132). This may result in a negative emotional and behavioural concern, such as change in mood, anxiety disorders and panic attacks. The effects of some of these symptoms may lead to reduced commitment to tasks, enhanced interpersonal conflict which makes it unattractive for employees to report to work on time and finish assigned organisational tasks on time.

Notably, the evolution of technology in modern day organisations has not reduced the burden on human behaviour in thriving organisations (Edmondson, 2002). Rather, the upsurge in the use of technology has facilitated major human conditions significant to organisational behaviour. For instance, a well-equipped library must provide essential and up-to-date information for its users (Abidoye & Afolabi, 2011). This means that librarians of the 21st century must have an in-depth knowledge and appreciable skills to meet the demands of technology. The library has been identified as one of the most leading and stressful occupation in the world (Robbins et al., 2013). Ajala (2011) asserts that the growth of information technology and its changing demands and expectations on academic library employees continue to be one of the key challenges affecting the multiple roles of academic libraries. In Ghana, one of the most thriving and emerging areas of the economy is the library and information science sector particularly related to academic libraries. This has been occasioned by the upsurge in the provision or establishment of tertiary education in the country (Atuahene & Owusu-Ansah, 2013).

According to Ghana's National Accreditation Board, there are currently ten public universities and over fifty private university colleges that have emerged in the last ten to

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fifteen years (NAB, 2015). Obviously, the human face of the library and information science services is crucial to the very survival of the sector. It is important therefore, to examine all issues that may impact the quality of service being provided in the sector.

Existing literature shows that there is sparse information on the present study's variables in sub-Saharan Africa. Yet, the importance of techno-stress experiences in the modern organisational setup makes it imperative for such a study.

1.2 Problem Statement

The term techno-stress has been the basis for most research work on information technology-related stress. A study conducted by Tarafdar, Tu, Ragu-Nathan and Ragu-Nathan (2007: 322) pointed out the sample used for their survey on techno-stress as the limitation of their research study and suggested that further research should be conducted on the topic of techno-stress with a different population sample such as academic library employees and sample from an African background.

According to Venkatesh and Bala (2008) librarians using technology in their work environment enhance their performance of library tasks and functions. However, the existence of technology in the library brought about an undue pressure on librarians because of the increased demand for instant provision of documents as well as the persistent demand for automated searching services from users of the library (Venkatesh & Bala, 2008).

The general objectives of this study are:

- To explore the existing levels of techno-stress experiences among academic library employees in the University of Ghana Library System.
- To explore the kind of Africentric coping strategies library employees adopt to manage techno-stress experiences.

The present study seeks to explore if techno-stress is experienced among academic library employees in Ghana and to find out if certain context related variables such as Africentric coping strategies, gender and age are relevant to such a sample in coping with the effects of techno-stress.

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1.3 Objectives of the study

The specific objective of this study is to find out whether the sampling unit (academic library employees) of University of Ghana experience techno-stress. These specific objectives of the study are outlined below.

1. To identify the level of techno-stress if any, among academic librarians of the sample.
2. To identify the nature of Africentric coping strategies adopted to cope with techno-stress.
3. To establish the relationship between techno-stress and age as a demographic variable.
4. To establish the relationship between techno-stress and gender as a variant demographic variable.
5. To establish the relationship between techno-stress and work experience.
6. To establish the relationship between techno-stress and educational level.

1.4 Research Questions

In order to achieve the following objectives, the following research questions were pursued.

1. What is the level of techno-stress experienced by academic library employees in university of Ghana?
2. What kinds of Africentric coping strategies are adopted by librarians in University of Ghana to cope with techno-stress?
3. What is the relationship between techno-stress and age?
4. What is the relationship between techno-stress and gender?
5. What is the relationship between techno-stress and work experience?
6. What is the relationship between techno-stress and educational level?

1.5 Scope and Limitation of this study

The study covered one major academic library in the public sector. Being mindful of time and financial constraints, the present study was limited to Accra. There are three public universities in Accra and several private universities. The three public universities are the University of Ghana, the Ghana Institute of Management and Public Administration (GIMPA) and the University for Professional Studies, Accra. The University of Ghana Library System (UGLS) was used to represent all academic libraries in Ghana because it is one of the leading academic libraries in Ghana and according to the Human Resource department, the library has a total of 345 library employees (University of Ghana, 2015).

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Furthermore, the institution has sample characteristics that were suitable for the purposes of the study. Explicitly the choice of the University of Ghana was informed by purposive sampling.

1.6 Rationale for the study

There are several reasons for carrying out the present research work. Firstly, unlike the developed countries, there seem to be sparse research on techno-stress and coping strategies among libraries particularly in academic libraries in developing countries. Secondly, it is important to situate the problem of techno-stress and Africentric coping strategies among academic library employees in academic libraries within the wider African context in order to be able to add to general knowledge on techno-stress and also through a comprehensive review of the literature, update existing findings on some similarities and differences that may exist between Western and the African settings; since techno-stress have been documented to vary across cultures (Çoklar & Sahin, 2011: 179). Overall, the study would provide empirical information that would enhance appropriate interventions for academic library employees who experience the negative consequences of techno-stress. Hence, the results of the study would help the following:

Hence the results of the study will help:

1. Employees of library services to comprehend and recognise the negative effects of techno-stress on their health and on the job.
2. Managers of library services to adopt appropriate interventions which will help employees deal with techno-stress experiences at work.
3. Findings would serve the interest of research on the efficacy of adopting Africentric coping strategies to reduce the effects of techno-stress on one's physical and psychological health.

1.7 Research Methodology

The development of the research methodology was preceded by a review of the literature. The review of literature guided the preparation of questionnaire.

The present study was conducted by drawing on the responses of academic library employees from the University of Ghana. The respondents selected were all academic library employees working in various library related positions and were considered as the appropriate sample.

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The section includes relevant information on the research design, population and sampling techniques, description of research instrument and the tools of data analysis used in the study.

1.8 Definition of terms

- Techno-stress

It refers to difficulties (emotional, mental and behavioural) related to the adaptation of information and computer technologies in academic libraries (Shu, Tu & Wang, 2011).

- Coping

Coping refers to the rational or behavioural responses employees adopt in controlling, dealing, or avoiding situations that may possibly be considered as problematic.

The term can also be used to refer to the various means an individual might apply in handling his/her situation (McKenry & Price, 2005).s.

- Africentric coping

Africentric coping refers to coping strategies used by people of African descent to deal with any kind of stress which they experience (Utsey, Adams & Bolden, 2000).

- Academic Library

An academic library refers to a library that is established within a tertiary institution of education which provides support for the curriculum and research needs of faculty and students within the university (Nkamnebe et al., 2014).

1.9 Organisation of the study

Chapter one presents the scope of the study, indicating an introductory paragraph stating the general field of interest, a statement of the problem, purpose of the study, general and specific objectives, significance of the study, and research questions. Chapter two presents a review of the literature on techno-stress and Africentric coping strategies employed by academic librarians. Chapter three involves the methodology that was used in this study. These are, sample; sampling technique; data collection method; and how data was analysed. Chapter four presents the discussion of results. Chapter four contains the discussion of results obtained from the analysis of findings in the previous chapter. The results would be discussed and related to literature. Chapter five deals with summary, conclusion and recommendations.

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CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The evolution in information and communications technology (ICT) from some two decades ago have caused libraries in general to make dramatic changes in terms of job related roles, diverse skills and knowledge required, and in the provision of services (McDevitt & Jones, 2013: 78). Further, McDevitt and Jones report that techno-stress experiences tend to have a negative impact on the emotional and physical wellbeing of library employees which ultimately affects productivity in the library environment. Chang and Chen (2011: 425-426) assert that there exist significant challenges related to the exploitation and use of technology in the developing countries, especially among the librarianship profession. Therefore, in order for librarians in academic institutions to perform their professional role to meet the demands of technology, they are forced to be abreast with these advancements in technology to provide effective service to meet the changing needs of current researchers (Tanloet & Tuamusak, 2011: 123).

According to Khan, Rehman and Rehman (2013: 9), the infusion of technology into libraries have greatly improved resources and services such as information organisation, searching, retrieval and dissemination. However, these innovations in library technology have led to stress among library employees, which Harper (2000) refers to as techno-stress. Kupersmith (2006) also advances that techno-stress is experienced by majority of librarians as a result of technological innovations. Furthermore, library employees are subjected to protracted stress, just like any other professional in any organisation from a manifold of sources; in circumstances they may have absolutely no or very little control (Becker, 1993: 348; Kupersmith, 1998: 4).

There however seems to be limited information on the scope of techno-stress experiences and application of relevant coping strategies to deal with it. Thus, study sought to explore techno-stress and Africentric coping strategies which library employees adopt in managing stress in the academic library, with specific reference to Ghana. The aim of this chapter is to provide a description and exploration of the theoretical models and studies that have guided the scope of study. It also provides a presentation of the variables under study by tracing its history and the evolution of the construct techno-stress.

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The chapter would present an understanding on the development of techno-stress among academic librarians. The literature largely supports the view that there are negative effects of ICT among users. Sparse information exists for techno-stress experiences by academic library employees therefore the chapter seeks to explore extant literature on techno-stress by examining; the concept of techno-stress, causes of techno-stress, symptoms of techno-stress and coping strategies.

2.2 The concept of techno-stress

Techno-stress was used to explain the feeling experienced by individuals in the technological environment (Berrios Rolon, 2014: 34). Several literature studies (Ahmad et al., 2012; Poole & Denny, 2001; Salanova et al., 2014; Tu & Wang, 2005) acknowledge Craig Brod who was a psychological therapist as the first to coin the term techno-stress 1984. Brod (1984) used the term techno-stress to describe the problems of people when applying new technological devices and programmes to their working environment. Brod conceptualised techno-stress as modern disease that manifests as fear and panic which is experienced by users of new technology in carrying out their work. At that time, there was very little use of computers compared to recent times. According to Berrios Rolon (2014: 34), the meaning of the term techno-stress changes as a result of evolution in technology and time. Further research shows that, there were other expressions that were previously used to refer to techno-stress, and these include; *"technophobia, computer stress, computer-phobia and computer anxiety"* (Embi, 2007; Mustaffa et al., 2007)." Additionally, Ahmad, Amin and Ismail (2009) in a research also found "digital depression" has also been used to categorise the feeling of a worker or employee when being weighed down by technology.

In the modern era, the use of technology in everyday life has become essential, bringing about an expansion in the definition of techno-stress. The term techno-stress has been broadened in today's world to include elements such as *"incapacity to adapt, negative attitudes, stress, anxiety, significant mood changes, and other inhibitions"* (Berrios Rolon, 2014: 35)." These elements are as a result of how individuals currently interact with technological innovations. Brillhart (2004: 302); Wang, Shu and Tu (2008: 3003) consider that techno-stress has now become a kind of modern infection that demonstrates itself as the inability of a user to adapt, the failure to adequately relate, and the incidence of unhealthy response to the adaption of new technologies and their impact on the life of the user.

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The definition of techno-stress was modified or extended by other researchers to perceive it as more than just the fear of technology but also included several elements. For instance, Arnetz and Wiholm (1997: 36); Gendreau (2007: 193) defined techno-stress as the reaction (mental or psychological state) of people when they are expected to apply technology in their daily work activities. Brillhart, (2004: 304) also defined techno-stress as the negative (direct or indirect) effect which individuals feel and how they respond to the impact of technology. Thus, Çoklar and Sahin (2011: 172) contend that techno-stress is a subset of stress.

The definitions for techno-stress can be summarised as a reflection of an individual's fear, discomfort, anxiety and nervousness caused by the direct or indirect application of computer technologies. According to Wang et al. (2008: 3004), eventually these unpleasant emotional and psychological experiences related to technologies culminate into a mental revulsion and then tends to limit the individual from the use of computer technologies.

There are various components of techno-stress that have been identified in existing literature. The components include occupational crisis; work overload; the complexity of technology, as well as an individual life invasion (Brod, 1984; Weil & Rosen, 1997). Furthermore, Tarafdar et al. (2007) later defined techno-stress by validating five domains on the techno-stress scale. These five (5) domains include:

a) Techno-overload (information and communication technologies force an employee to work faster),
b) Techno-invasion (pervasive invasion of an employee's personal life by information and communication technologies),
c) Techno-complexity (high complexity of new information and communication technologies which causes an employee to feel incompetent),
d) Techno-insecurity (Impact of information communication and technologies on the job security of an employee)
e) Techno-uncertainty (persistent changing, transforming or upgrading and virus fixing in information communication and technology hardware and software components that cause stress on the end-user).

These five measurement domains are the most commonly and widely used in many research studies to measure levels of techno-stress experiences among individuals in organisations.

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2.3 Causes of techno-stress

Various causes of techno-stress have been identified, For instance, Akhtari, Mohseni, Naderi, Akhtari & Torfi (2013) pose that the major causes of techno-stress can be attributed to the lack of technological competence and expertise. Wang et al. (2008: 3004) state the characteristics of computer anxiety as including one's feelings of not having adequate time, the feeling of inability for one to comprehend and remember everything to complete job on time. Additionally, other forms of computer anxiety are the feeling of ineptness or illiteracy, the fear of modern technology, as well as various threats about the health implication (Akhtari et al., 2013; Doronina, 1995).

Librarians are believed to have accepted the internet since its earlier inception and then began educating the library users about resources that are available on the internet (Ahmad et al., 2009).

The above possible causes may lead to significant symptoms such as physical as well as emotional stress in the course of accepting the ever growing complex technology which led to many staff adopting measures such as absenteeism and resignations, rise in the cost of retraining staff, and a rise in the cost of legal action as a result of stress related to the workplace (Acierno et al., 1999; Harper, 2000).

Research show that stress presents a variety of physical signs, and some of these common physical symptoms of techno-stress includes headache, dejection, mental exhaustion, high blood pressure and so on (Akhtari et al., 2013; Jena, 2015).

2.4 Theoretical framework

This section focuses on the review of literature that have spanned this area of study. The field of technology faces continual advancement in its exploitation of technological resources. Today's academic libraries, especially in developing countries may have to introduce information and communications technology (ICT) and train their employees in order to keep up with the market competition. Thus, the use of ICTs may become an obligation for employees rather than a task which can easily be avoided. This section specifically covers the theories that have formed the bases for studies to be carried out in this area of research.

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2.4.1 Problem-focused and emotion-focused coping strategies

Strategies for coping with stress have been categorised into two main categories; namely *"problem-focused strategies or direct approaches and emotion-focused strategies or indirect approaches"* (Monat & Lazarus, 1991)". They explain the problem-focused strategies for coping as the efforts made to improve the troubled relationship between the employee and the working environment. For example Monat and Lazarus (1991) suggested that employees may adopt various ways of coping with technostress experiences and these may include; searching for information on what to do when experiencing any techno-stress condition, restraining from any spontaneous and hasty actions in the event of any techno-stress condition. Monat and Lazarus (1991) also explain that one's judgement and actions with the objective of allaying the emotional impact of techno-stress is referred to as emotion-focused coping strategy for techno-stress. Examples of the emotion-focused coping strategies include, refusing to see any wrongful situation, isolating one's self as in making a joke out of any stressful situation; denying any wrongful occurrences; and/or taking pills that could enable one to relax (Monat & Lazarus, 1991). However, Wang et al. (2008: 3005) argue emotion-focused coping strategy is unlikely to correct the intimidating or stressful situations, but enables one to have a better feeling.

Wang et al. (2008: 3006) aver that, the problem and emotion-focused coping strategies for techno-stress have some limitations. For example, in an organizational situation where the leisure and routine work time of employees are reduced, thereby causing high stress as a result of engaging employees in a rigorous technological based training as an effective approach to alleviating techno-stress conditions. Thus, it is imperative for one to be cautious when opting for these two strategies for coping with techno-stress.

There has been so much emphasis on the individual level of coping strategies with rare emphasis on the dynamics of the organisation. Hannakaisa et al. (2000); Rowold and Schlotz (2009) assert that, the seeming job stress of employees are caused by the internal environment as well as the cultures of the organisation within which employees work. It is therefore important for every organisation to take pragmatic steps to alleviate any technology related stress (techno-stress) to enable the organisation sustain its productivity and health of personnel (Wang et al., 2008). Library employees and information professionals have a tendency of trying to eliminate stressful conditions that occur as they stay abreast with new technological innovations (Prabhakaran & Mishra, 2012).

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In conclusion, technostress seems to play a vital role in the physical and psychological experiences of employees. Thus there is an inherent need to inculcate the appropriate coping strategies that would only not deal with the emotions surrounding the technostress condition but also coping strategies based on a problem-focused approach.

2.4.2 The Techno-stress model

Due to the inability of the stress model to explain technological stressors which are peculiar to techno-stress, Ragu-Nathan et al. (2008) propounded a techno-stress model to further expound the technostress model. These include two broad elements known as the

(a) Creators (which are element that are likely to reduce job satisfaction which is evident from negative behaviour such as absenteeism, tardiness, and pilfering).
(b) Inhibitors (which are personal and organisational skills, knowledge inputs that would facilitate job–related satisfaction).

Creators are five basic structures associated with techno-stress. These include techno-overload, techno-complexity, techno-insecurity, techno-uncertainty, and techno-invasion.
The inhibitors on the other hand, includes literacy facilitation, technical support provision, and the involvement of users in the adaptation of the technology process.

The model suggests that technology is complex and may demand personal or private resources such as concentration, reasoning and coping from individuals. According to the model the relatively high requirements of technology may force an individual to engage in a primary appraisal of the demands of technology as a possible threat or an opportunity which will also determine the type of coping strategy that is employed to control the ensuing stress.

Connolly and Bhattacherjee (2011); Ragu-Nathan et al. (2008) in their validation of the techno-stress model have related high levels of techno-stress to the adoption of appropriate coping, less job satisfaction and organisational commitment. According to Ragu-Nathan et al. (2008), by using ICTs in organisations, several organisational structural changes have emerged and these have positive and negative consequences for employees and the organisation as a living system. Although the techno-stress model seems to highlight the essence of coping in mediating stressful events, it fails to highlight on the influence of culture in coping with techno stress experiences.

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2.4.3 Computer frustration model

Bessiere et al. (2006) propose a theoretical model of computer-related frustration. They observed that the term computer frustration is yet to be thoroughly conceptualised as a factor in the study of the human-computer interface (Bessiere et al., 2006: 941), irrespective of the fact that many information and communication technology (ICT) users frequently complain about computer frustration. Frustration has been defined as the emotional response to conditions that impede an individual's ability to realise goals. In the context of ICTs, an individual can experience technology-related stress when for instance the computer "crashes", the refusal of a computer application to work or function as expected, or hold-ups in sending and retrieving information or the inability to find or use all or part of information. These and other related incidences have the potential of adversely affecting the performance of a user which can lead to an increased state of 'arousal', which is a key element of frustration (Bessiere et al., 2006: 943). According to the authors of the model, if individuals are able to adopt measures to resolve the problems themselves, or seek the assistance of others to solve the problem, the feeling of frustration is likely to be acute but would be unable to grow into emotions such as; anguish, depression, anger, and disappointment (Bessiere et al., 2006: 944). On a whole "frustration as such may be maladaptive if no solution to the problem can be found or there are obstacles on the path to resolving the problem" (Bessiere et al., 2006: 945)". Likewise, the level of "dysfunctional arousal" as well as "psychological strain" felt by an individual can heighten, if series of failures result in frustration, in turn leads to the emergence of further failures (Bessiere et al., 2006: 945).

Even though the computer frustration model is yet to be thoroughly conceptualised, it affords the opportunity for further research to be undertaken on how individuals react emotionally to the adaptation of technology. Besides the situational or technological factors, Bessiere et al. (2006: 946) also highlight some human related constructs such as dispositional or user factors, like 'self-efficacy' as well as 'negative affectivity' which future studies should explore to better understand the issues with techno-stress and its effect on organisational productivity and personal coping strategies.

O'Driscoll et al. (2010: 281), however noted that there may be individual differences in response to ICT related problems and failures. Thus, while some individuals adopt a stipulated coping strategy such as 'problem-solving', striving to solve the problem or seek assistance to resolve it (O'Driscoll et al., 2010: 281), others, mainly individuals who have hitherto faced problems, and may have been unable to resolve them, would possibly use a

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passive strategy to resolve the problem. This could lead to feelings of frustration because of the perceived failure on the part of the individual, to resolve the problem (O'Driscoll et al., 2010: 281).

The researchers investigated the computer frustration theory by examining how both situational and dispositional factors contribute to the frustration of a user. In their studies the participants were asked to undertake a project of their own with a computer for an hour, while the occurrence of any incidents of frustration were recorded. The researchers examined frustration at four levels: Namely; at the instance of the occurrence of an incident, throughout the whole session, right after the session, and expected frustration for the rest of the day (Bessiere et al., 2006: 955). The findings from their study showed that the situational (technological) factors contributed 1% to 18% of the incidence in frustration, while disposition (users) factors contributed 8% to 34% of the incidence in frustration. The main dispositional predictors for the level of frustration were "self-efficacy, computer attitudes, as well as mood" (Bessiere et al., 2006: 957). The authors, came to the conclusion that "the ability of the user to cope with computing technology appears to be a pervasive factor in how frustrated he or she becomes" (Bessiere et al., 2006: 958)."

Ceaparu et al. (2004) used a 'time-diary methodology' in their study to explore the experiences of the users of technology. Their findings complemented that of Bessiere et al., (2006). In their survey, they asked participants to record their "frustration" experiences as it ensued in the course of performing their regular tasks with a computer. The researchers had previously collected data on computer anxiety and mood levels together with users' attitudes and level of their computer experience before embarking on a survey which gathered data on the level of mood during the session, the total level of frustration, as well as the perceived effect of the frustration on the users. They found that the level of frustration which users experience was relatively general, and that the frustrations felt throughout the task session were not different from others which they had faced in the previous use of computers. It was noted that about 33% to 50% of time expended on a computer was wasted as a result of the most common occurrences such as "lost network connections, error messages, long download times, as well as features that were difficult to find or use. A similar study conducted by Lazar, Ben-Avraham and Schattner (2006) found that, users reported that about 40% of their time spent on the computer was lost as a result of induced frustration caused by word processing, email, and problems in web browsing.

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From the computer frustration theory, it is obvious that both frustration and anxiety can be potential sources of technology related stress for users of ICT with the incidence having a negative effect on their psychological health in the organisation. Therefore persistent anxiety regarding an individual's capabilities in becoming proficient in the use of ICT and the individual's ensuing job performance has the tendency to cause depression for some of the individuals, whereas frustration may be able to result in psychological as well as 'behavioural withdrawal' from using technology.

2.5 Review of related studies

The literature on techno-stress for example Jena (2015); Tarafdar, Bar and Ragu-Nathan (2010); Tu, Wang, and Shu (2005); Wang, Shu, and Tu (2008); White and Dorman (2000) present findings of techno-stress experiences among samples from the Western/European countries. Very few studies have been conducted on techno-stress among librarians in developing countries such as Ghana, where the use of technology is at its beginning stages. However, Harper (2000) in reviewing literature on techno-stress among librarians highlights two major forms of recognisable techno-stress affecting librarians across cultures. These are physical and psychological symptoms. Psychologically, according to Harper (2000), librarians present with techno-stress experiences by showing emotional exhaustion, over-compliance with technology, repeating routine work and over-indulgence with the information gained, job role confusion and job insecurity. The physical symptoms may include, inability to show a sense of humour, avoiding co-workers, and also becoming restless.

Tarafdar et al. (2010) studied techno-stress experienced by 233 ICT users from the United States of America. The participants for the study were drawn from two government sector organisations. The results showed that techno-stress creators were more likely to be associated with a decrease in organisational output of the individual.

Although Tarafdar et al. (2010) study did not focus on academic libraries, Kumar (2009) in a review of literature reasoned that academic libraries are fast changing to keep up with the use of ICT technologies in the delivery of services to its end users. Thus, objective of the present study to explore techno-stress among academic librarians. Krubu and Osawu (2011) emphasises the importance of academic libraries, as a critical part in the institutions of higher learning.

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2.5.1 Review of related studies on techno-stress, level of education and work experience

Amekuedee (2005) conducted a study among public university libraries in Ghana to observe the use of ICT in the facilitation and delivery of end user services. Specifically, the Balme library, the Kwame Nkrumah University of Science and Technology and the University of Cape Coast were studied. Results showed from the study showed that these academic libraries experienced difficulties in the adoption of technology based facilities and these libraries also lacked the drive to successfully implement the systems. Results also showed that the negative attitudes of employees augments service delivery. Specifically, 89.4% of academic library employees from the Balme Library were willing to learn new technology systems. 55.6% of academic library employees from the Kwame Nkrumah University of Science and Technology reported willingness to learn and adopt technology systems. 72% of University of Cape Coast academic librarians were willing to learn a new IT system.

Okiy (2010) asserts that professional academic librarians should be willing to constantly upgrade their skills and knowledge in order to keep up with the changing trends of technology. This implies that experience gained by training oneself to keep pace with technology may invariably affect the levels of stress an individual may experience in adoption of technology on the job.

Studies on the level of experience of employees and the technostress they experienced have shown mixed results. In a study carried out by Weil and Rosen (1997), determined that computer professionals who are more qualified in terms of experience who have more experience, tend to experience less stress when there are challenges associated with the use of the computer.

Other studies reported contrary findings. Kouvonen et al. (2005) conducted a study on the incidence of techno-stress among computer professionals. Results showed that employees with more computer-related experience reported more stress than employees with limited or no computer related experience.

In conclusion, findings on the relationship between technostress, work experience and level of education seemed to be inconclusive. There is limited literature on technostress, work experience and level of education especially in the African literature on technostress which makes it difficult to understand the existing relationships among the technostress, level of education and work experience. Thus, the need to explore the relationship between these variables in the present study.

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2.5.2 Techno-stress and age

Tams (2011), conducted a study on "whether", "why" and "how" technological induced workplace stress affects both the old and young. The findings of the study were that young adults are less affected by techno-stress than the older adults because their effectiveness of inhibition, computer experience, as well as computer self-efficacy tends to be on a lower level compared to the adults (Tams, 2011: 247).

Some studies have associated significant techno-stress to increases in age. Tu, Wang and Shu (2005) found that older employees were more likely to experience techno-stress because learning difficulties present as an individual matures chronologically. The finding that adults have already formed attitudes towards learning therefore they may have challenges disabling the negative thoughts, perceptions and ideas which are firmly sealed as an individual acquires knowledge through learning and experience. Van Eck (2005) insists that the incidence of techno-stress is likely to heighten by age 35 years. Agarwal and Prasad (1999) asserts that older adults tend to lack the computer drive, skills and knowledge of younger people. They further reasoned that older adults may have adapted to routine work and may perceive 'change' as a threat of to their occupation.

Burton-Jones and Hubona (2005) conducted a study among 106 professional and administrative staff in the IT section of a large manufacturing company. They found that individual user differences such as age have significant direct effects on both the frequency and volume of usage of information technology.

The findings from a study conducted by Agbu and Simeon (2011) showed that older people were more likely to exhibit higher techno-stress levels than younger people. In their study, participants who are 60 years and above presented the highest signs of techno-stress than other participants who fall in the age category of 50-59 years and 40-49 years respectively.

Other studies have also suggested that age (that is, being young or older) does not have a significant effect on computer-related stress (Hudiburg & Necessary, 1996).

In conclusion, the findings on the relationship between techno-stress and age seem to largely support the significant effect of age on technostress. However, because computer technology is a recent phenomenon in developing countries, there is a need to further explore the relationship between technostress and age among the present study sample.

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2.5.3 Techno-stress and gender

Studies that have explored gender in relation to techno-stress suggests that men and women differed in terms of computer-related stress (Gefen & Straub, 1997). Venkatesh and Morris, (2000) have shown that women are more likely to suffer from higher levels of techno-stress in the workplace than men. For instance, Gilroy and Desai (1986) conducted a study on 270 undergraduates and 56 masters' students. Half of the participants were males and the other half were females. The study found that female college students were more prone to computer anxiety than male students. Studies by Furniss (2014); Frenkel (1990); Lowe and Krahn (1989) also found that there were gender differences in techno-stress among males and female participants.

A study conducted by Jena et al. (2014) among 116 academicians in India showed that males tend to experience more techno-stress their females counterparts. The reason being that female academicians tend to use technology only when they are required to use, whereas the male academicians are more inclined to use technology at any time. Thus, the males were more likely to experience a very high intensity of techno-stress than their female counterparts (Jena et al., 2014). However, the findings of a study conducted by Çoklar and Sahin (2011: 179) on 287 participants in Turkey to ascertain their techno-stress level showed that females tend to suffer a higher intensity of techno-stress than males. The reasons that contributed to the level of techno-stress includes the anxiety in relation to loss of data, inability to remember volumes or large numbers of user names and password, and social pressure concerning the use of ICT.

Tiemo and Ofua (2010) conducted a study at five university libraries in the states of Edo and Delta State. The aim of the study was to explore the causes, symptoms and coping strategies of techno-stress among academic libraries in Nigeria. Findings revealed that there was no significant difference between males and females in the levels of techno-stress experienced.

Other studies have also showed that there are no significant differences between males and females in the levels of techno-stress experienced (Agbu & Simeon, 2011; Aida et al., 2007; Anthony et al., 2000).

It can be observed that, differences in the findings of the various studies are influenced by research work that have been conducted among different samples from diverse cultures.

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Therefore, the need for the present study to be conducted to ascertain if there exists any relationship between gender and techno-stress among the Ghanaian study participants.

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CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research design that was employed to investigate the research topic. It focuses on the population and the characteristics of the sample. In addition, the procedure and the research instrument used to gather data are discussed. Finally, description of the statistical technique used for capturing data, analysis and presentation are also outlined**.**

3.2 Research Design

A research design is a framework and the process for research that cover decisions from extensive assumptions to in-depth procedures for the collection and analysis of data (Creswell, 2013). The initial phase in the planning of a research design paradigm is determining the appropriate research approach or strategy for the study.

According to Brymanand Bell (2015: 49) research design gives a suitable framework for the collection and analysis of data and therefore reflects in the decisions about the precedence being given to the research process. They posited that research design indicates the methods through which the research questions as well as objectives will be answered. These will include the source of data collection, the limitation and the ethical issues that might appear during the execution of the research.

Sanders et al. (2007) further discussed and anchored different types of qualitative research in "the kinds of questions a particular researcher will ask". They suggested qualitative research aspects in ethnography and systems theory for example identifies basic or generic qualitative study, grounded theory and case study. They indicated also that quantitative research design involves the use of numbers and analytical tools to achieve the objectives of the study. This approach has the tendency to ensure that the variable being measured are structured or put in an organised form. Leedy and Ormrod (2010: 136-182) also avers that there are generally two approaches to or strategy for a study, and these are qualitative and quantitative. Approaching the research design from this background, qualitative approach was employed for this study since qualitative research is more personal whiles quantitative is more statistical (Mertens, 2014). The study found qualitative approach suitable because the subject matter of the study is about how respondents perceive their own experiences at the personal level.

This approach is consistent with (Mcleod, 2008) contention that the qualitative research deals with a phenomenon which occurs on an individual or personal level considering how people

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consider and feel about particular problems and how they deal with these problems. The study was also more exploratory and explanatory in nature. This is because there is no single universally accepted way of how people react to techno-stress and that whilst admitting that techno-stress impact on the lives of people; it is also a truism that the experience has not been the same for all people. Again, exploratory method was used because it made provision to uncover new experiences, techniques and different ways of dealing with techno-stress. For instance, McMillan and Schumacher (1993: 372) state that qualitative research is a form of real-life investigation of a phenomenon which employs a neutral data collection approaches to ascertain the natural flow of events as well as the processes, and how the respondents interpret the data.

3.3 The Study focal respondents

The study focuses on techno-stress and Africentric coping strategies among library employees in Ghana. The study area comprises all library institutions that run the gamut of various geographic boundaries in Ghana. However, to explore the nature of 'Africentric' coping strategies, staff of University of Ghana library System referred to in here as Balme Library was used for the study.

3.4 Description of population and sampling techniques

According to Creswell (2013) population of a study refers to the total number of people or the group which the researcher would like to generalise the findings of the study about. The population can also be explained as the total number of people from whom information can be generated and investigated and from which the researcher can draw inferences.

The study population comprises all employees of the University of Ghana library. This library was selected because it is more established and has higher application of library automation. However, due to time and resource constraints, a proportion of the number of staff was sampled. In choosing the respondents, the researcher adopted non-probability purposive sampling. Purposive sampling also called judgemental sampling is one that is selected based on the knowledge of a population and the purpose of the study.

In particular, the employees of Balme library were purposely selected to get their experiences and knowledge of coping with techno-stress. Thus they provided information on the key variables of the study. The respondents were subdivided into sub-categories (strata) in

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accordance with certain population characteristics and background. Stratum one consisted of the employees of the main library called Balme library using a sample of 40; stratum two comprised the employees of the libraries in the various halls of residence with a sample of 20 and the last stratum, stratum 3 comprised a sample of 40 drawn from the staff of the various schools, colleges, institutes and departments. This made room for equal representation of all sampling units.

The determination of the sample size of 100 was informed by Suter's (2011) recommendations that if the population is a few hundreds, 40% or more will be the appropriate sample size and if the population is several hundreds, 20% will be the appropriate sample size. For a few thousands, 10% sample size can be considered as adequate. Accordingly for a staff population of over 1000 in the UGLS, 10 percent numbering 100 constituted the sample size for the study. The sample size for each stratum was determined using quota sampling. Because the number of employees in each classification varies, the use of quota sampling ensured that there was proportionate representation of all sampling units. To eliminate some elements of biases in the selection of the sample, the researcher was more cautious of the gender composition of the sample.

3.4.1 Background of the population unit (University of Ghana Library System)

The University of Ghana is the largest university in Ghana and its establishment can be traced back to August 1948.The purpose for its establishment was to provide and promote university education, learning and research (http://www.ug.edu.gh/about/overview).

The main library of the University of Ghana is known as the "Balme Library". There are other libraries in the various Colleges, Schools, Institutes; Departments; Halls of residence and the Accra City Campus which in addition to the Balme Library form the University of Ghana Library System (UGLS) (http://balme.ug.edu.gh/).

The facilities and scope of coverage of the collection provided by the Balme Library depicts it as a vital and fundamental part of the academic life of the University. The collections of the libraries cover both electronic and print resources that provide significant background reading for all the courses offered by the University (http://balme.ug.edu.gh/).

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The libraries offer outstanding facilities and products such as "text books, reference materials, journal databases, e-books, library instructions, study carrels, Research Commons (RC), Knowledge Commons (KC), reprographic services, a networked environment with computers and a 24 hr reading room"(http://balme.ug.edu.gh/).The Libraries are vigorous and continue to adjust to technological evolution and user information services. The managers and staff are committed to serving the University community (http://balme.ug.edu.gh/).

3.5 Data collection procedure

In the conduct of the research work, the researcher adopted the use of questionnaires. This facilitated the collection of huge amount of information on the key variables that were considered relevant to the study. There was also the need to operationalize certain variables to get the needed information. The kind of question asked depended on the type of data needed. The use of questionnaires again ensured some level of anonymity among the respondents.

These sample units were proportions of the population units and given the homogeneity of the population, they were representative of the respective population units. These are people who work in the same institution, bound by the same rules and regulations, working with similar logistics and working under similar working conditions and environment. Therefore such a sample could be used to infer from the specific to the general that is inferring from sample to population.

The purpose of the research was explained to all participants. Also they were told that participation was based on one's own volition and the use of the findings would be limited to academic purposes. Again they were assured of the confidentiality of data.

3.6 Description of Research Instrument

Data was collected by means of open-ended and closed-ended questionnaire as the research instrument. The choice of questionnaire was primarily because of its convenience for respondents to answer, aside being relatively cheaper in terms of cost to the researcher. In addition, the use of questionnaire made it easier to solicit candid responses on certain issues considered sensitive in the study, such as; age and gender. Moreover, the use of questionnaire has the potential to reveal primary information on certain variables that were not readily available, thus giving a panoramic understanding of the issues under consideration in the study.

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In order to measure techno-stress level and coping strategies, the Techno-stress Creators scale developed by Tarafdar et al. (2007) was adopted. This means that some questions were modified and other items on the scale were omitted to suit aims and objectives of the present study. The Africentric Coping Systems Inventory (ACSI) developed by Utsey et al., (2000) was adopted by modifying some items on the scale, with permission from Shawn Utsey, who is the lead author of the ACSI.

The techno-stress constructs are grouped into five factors of techno-stress:
(a) Techno-overload: Measures the respondents' agreement whether the technology used has changed their work pace, work habits, and workload.
(b) Techno-invasion: which measures the respondents' agreement on how the technology used has encroached into their personal life.
(c) Techno-uncertainty: which measures also the respondents' agreement whether there were constant changes in the technology used in their workplace.
(d) Techno-complexity: used to measures the respondents' perception towards the complexity of the technology used and the adequacy of their existing technological skills and knowledge.
(e) Techno-insecurity: which measures the respondents' agreement whether the technology used is threatening their job security.

The ACSI is grounded in an African–centred conceptual framework and consists of four dimensions or subscales: Cognitive/Emotional debriefing, Spiritual-centred Coping, Collective Coping and Ritual–centred coping. For example, item one (1) on the original scale which state that "I prayed that things would work themselves out" was modified to "I prayed that things would work out". In order to ascertain whether respondents use other physical coping strategies to deal with stress, other statements such as "I consult a colleague, I consult a manual, I go for additional training and I consult an information technology professional" were added to ACSI scale. Furthermore, to determine the extent to which the overall coping strategies help respondents to deal with their stress, the statement; "To what extent do your coping strategies help you deal with your stress?" was also added to the ACSI scale. Finally, an open-ended question to determine if there are other coping strategies employed by respondent to help them deal with their stress.

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3.7 Data Analysis

Microsoft Excel was used to input the raw data collected. The data was also presented and analysed using descriptive statistics such as frequency distribution tables and percentages and bar charts. Where necessary, data generated was analysed by gender using frequency counts and percentages. These methods were more convenient for the kind of data collected and also provided better explanation of the variables in the study. Logical deductions and conclusion based on the study findings were also made.

3.8 Ethical consideration

A research study could be interpreted as an intrusion into the private lives of sampled respondents. To ward off any sense of insecurity among respondents, they were guaranteed of anonymity and also assured of confidentiality of data. In addition they were assured that data would be limited to academic and research purposes. In addition all works cited in this study were duly acknowledged. Permissions were sought from the authors whose works have been employed as measuring instruments in the study.

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CHAPTER FOUR

PRESENTATION OF RESULTS AND DATA ANALYSIS

4.1 Introduction

This chapter deals with the analysis and presentation of data which were collected from respondents. The data was analysed qualitatively with the use of frequencies, tables, pie charts, and bar graphs to represent the data. Inferences were drawn based on the analysis. The chapter also presents the findings and discussions of the study. The data was analysed based on the objectives of the study. The chapter begins with a description of the demographic characteristics, presentation of the results and discussions of the major findings.

4.2 Demographic characteristics of respondents

Socio demographic variables such as age, gender, nature of job, level of education inter-alia provide useful insights into individuals' lives. Considering age for instance, one generally can contend that the young tends to be more active and agile than the aged or the old all things being equal**.** The level of education also follows the same line of reasoning. Generally, a higher qualification in a chosen career field ensures competency. The nature of job can also partially determine the stress levels of individuals. Given the research questions hypothesized in the study, it became imperative to take into consideration these moderating variables.

4.2.1 Gender composition of respondents

Table 1 shows the gender characteristics of the respondents. Out of the total number of 100 respondents, 58 respondents made up of 58% were males whilst the remaining made up of 42 respondents representing 42% were females.

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Table 1: Gender of respondents

Gender	Number	Percentage
Male	58	58
Female	42	42
Total	**100**	**100**

Source: Field Survey, 2015.

4.2.2 Age of respondents

Twenty-five (25) respondents representing 25% were between the ages of 21-30; 24 respondents making up 24% were between the age ranges of 31-40, 35 being the majority representing 35% were between the age range of 41-50 and 16 respondents made up of 16% were between the age limit of 51-60 years representing. This means almost half of the respondents are very young and energetic and the other half can be considered old. Thus almost those between the ages of 21-30, 31-40 made up of 49% can be considered young. Table 2 illustrates the age distribution of respondents.

Table 2: Age of respondents

Age	Number	Percentage
21-30	25	25
31-40	24	24
41-50	35	35
51-60	16	16
Total	100	100

Source: Field Survey, 2015

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4.2.3 Analysis of educational background of respondents

The study found out the educational background of respondents. From the analysis, 52 percent were undergraduate diploma holders, 21% were undergraduate degree holders, 14% were postgraduate diploma holders, 6% were master's degree holders, whilst 7% of respondents were doctoral degree holders.

Table 3: Educational qualification of respondents

Educational Qualification	**Frequency**	**Percentage**
Undergraduate Diploma	52	52
Undergraduate Degree	21	21
Post Graduate Diploma	14	13
Master's Degree	6	6
Doctoral	7	7
Total	**100**	**100**

Source: Field Survey, 2015.

4.2.4 University of Ghana Library System respondents work with

From the survey, 48 of respondents representing 48 % were from the Balme Library which is the main library of University of Ghana; 6 respondents accounting for 6% were from the University of Ghana Business School, 10 respondents were drawn from the College of Health Sciences Library, 5 respondents from Institute of African Studies Library; 3 respondents came from the Accra City Campus Library; 7 were taken from the Faculty of Law library; 10 respondents selected from the various Halls of residence Library, whilst 11 respondents were extracted from various departmental library constituting. Table 4 sheds more light on this distribution graphically.

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Table 4: University of Ghana Library System respondents work with

Respondents	**Frequency**	**Percentage**
Balme library	48	48
University of Ghana Business School library	6	6
College of Health Sciences library	10	10
Institute of African Studies library	5	5
Accra City Campus library	3	3
Faculty of law library	7	7
Halls of Residence Library	10	10
Departmental library	11	11
Total	**100**	**100**

Source: Field Survey, 2015.

4.2.5 Job positions of respondents

Respondents fall within various categories of job positions. The dominant job position was found to be Library Assistants. This category of people numbered 62 representing 62 %, 9 were Senior Assistant Librarians representing 9%, 9 were Principal Library Assistants representing 9%, 10 were ICT Assistants representing 10%, and 10 were Institutional Repository Officers representing 10 %.

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Table 5: Distribution of Job Positions

Job Position	Number	Percentage
Library Assistants	62	62
Senior Assistant Librarian	9	9
Principal Library Assistants	9	9
ICT Assistants	10	9
Institutional Repository Officers	10	10
Total	**100**	**100**

Source: Field Survey, 2015.

4.2.6 Nature of job activities of respondents

From the survey, the observation was that majority of respondents identify themselves with the Integrated library management system. This mostly comprise Library Assistants and senior Library Assistants. Few were identified with the library related ICT work such as communications technologies including voicemail, facsimile and telephone. Some ICT Assistants perform this task. Multiple tasks were however noted across all library workers sampled. Some work with network technologies and at the same time general application technologies. Others combine desktop computer and mobile technologies as well as printing and scanning work. This means the system provides avenue for workers to have diverse capabilities in ICT Library related tasks.

4.2.7 Length of Service of respondents

The number of years the staff has worked was tested in order to place the study in perspective as well as inform the judgment of the respondents on the subject matter. As a result, the study saw the need to ascertain the number of years' respondents have been working in the academic library. Table 3 below shows the number of years' respondents have been working in the various libraries. It was observed that library employees who have worked for 1-5

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years were 8 percent, 6-10 years were 32 percent, 11-15 years were 13, 16-20 were 17 and 21 and above were 6.

Table 6: Length of service of respondents

Years	**No.**	**Percentage**
Less than one year	8	8
1-5	24	24
6-10	32	32
11-15	13	13
16-20	17	17
21 and above	6	6
Total	**100**	**100**

Source: Field Survey, 2015.

4.3 Level of techno-stress experience with techno-overload and techno-invasion

Table 4 below shows a presentation of results from the measurement of the level of techno-stress of experienced by respondents as a result of techno-overload and techno-invasion. Responses generated employing the Tarafdar et al. (2007) measurement of techno-stress highlight that academic library employees experience techno-stress but limited to some techno-stress measurement variables. 20% of the total number of respondents strongly agree that they are forced by library related technology to do more work than they can handle. 66% agreed whiles 5% express a neutral view. 7% disagreed and 2% strongly disagreed.

15% strongly agreed they are forced by library related technology to work within very tight time schedules. 73% agreed to this statement; 3% remained neutral; while 6% disagreed and 2% strongly disagreed to the statement.

9% of the respondents strongly agreed that they are forced to change their work habits to adapt to new library related technologies. Majority of the respondents agree that they are forced to work within tight time schedules representing 80 percent, and form the majority of

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the responses. However, 4% were neutral; whiles 2 percent disagree and 5% strongly disagree to the statement.

Respondents comprising of 61% strongly agree that they have a higher workload because of increased technological complexity. 19% agree to this statement; whiles 7% were neutral. 10 percent however, disagreed and 3% strongly disagreed.

8% of respondents strongly agreed to be in touch with their work even during their vacation time due to work associated mobile devices; 9% of respondents agreed to the statement and 4% were neutral. Majority of respondents representing 58% disagree with the statement; whiles 21% strongly disagree.

Majority of the respondents representing 71% disagreed to the question of if they sacrifice their vacations to keep current on administrative work like email. 2% strongly agreed to the question. 2% agreed; 19% were neutral and 6% strongly disagreed to the question.

To answer the question as to whether respondents' personal life is invaded by the intrusion of library related technology, many of the respondents representing 81% said they disagreed; 11% strongly disagreed; 6% were neutral; 3% agreed but none strongly agreed to the question.

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Table 7: Level of techno-stress experience with techno-overload and techno-invasion

Techno-stress responses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am forced by library related technology to do more work than I can handle.	66%	20%	5%	7%	2%
I am forced by library related technology to work within very tight time schedules.	73%	15%	3%	6%	3%
I am forced to change my work habits to adapt to new library related technologies.	80%	9%	4%	2%	5%
I have a higher workload because of increased technological complexity.	61%	19%	7%	3%	10%
I have to be in touch with my work even during my vacation due to work associated mobile devices.	58%	21%	4%	9%	8%
I have to sacrifice my vacation or weekend time to keep current on administrative work like e-mail.	69%	10%	7%	6%	8%
I feel my personal life is being invaded by the intrusion of library related technology.	79%	10%	4%	3%	4%

Source: Field Survey, 2015.

4.3.1 Level of techno-stress experience as a result of techno-complexity

Evidence of techno-stress among respondents was also tested with techno-complexity. 10% of the respondents stated that they do not know enough about library related technology and 2% said they need a long time to understand and use new technologies. The majority of respondents representing 45% also find library related technology too complex; whiles 43% said they do not find enough time to study and upgrade their library related technological skills.

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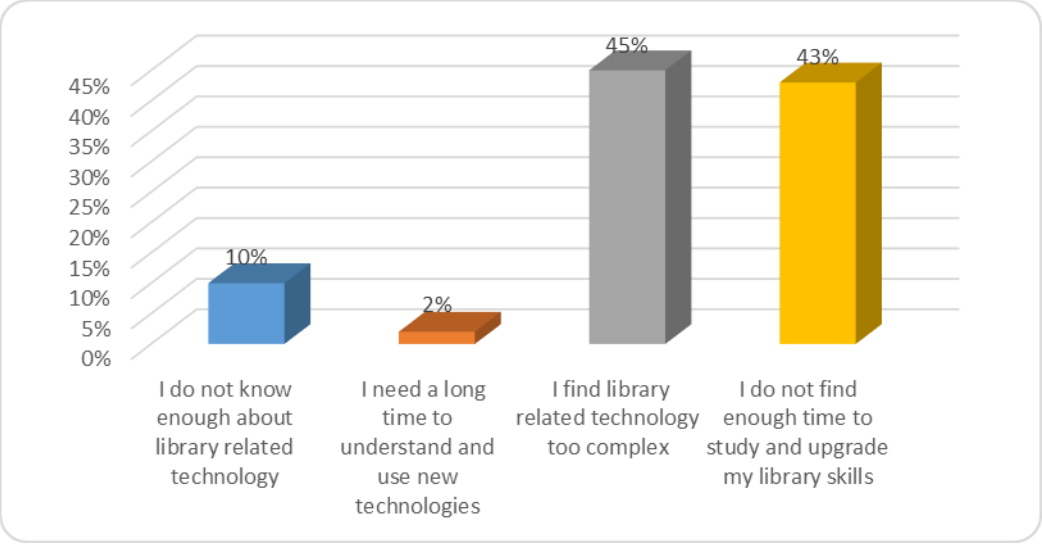
Figure 1: Level of techno-stress experience as a result of techno-complexity



Source: Field Survey, 2015.

4.3.2 Level of techno-stress experienced as a result of techno-uncertainty

From Figure 5 below, many of the respondents (64%) postulate that they are very much affected by constant upgrades in computer software in the library. However, 25% of the respondents claims they are somewhat affected by the constant upgrades in computer software, and 11% answered not at all to the question.

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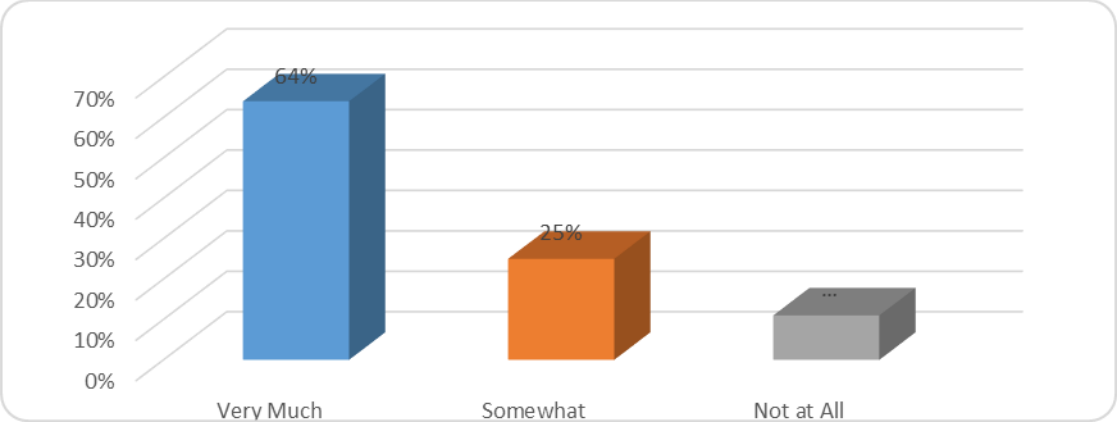
Figure 2: Level of techno-stress experienced as a result of techno-uncertainty



Source: Field Survey, 2015.

4.4 Africentric coping strategies

People of African descent tend to adopt some coping strategies that conform to African cultural values. Respondents were given a set of statements to indicate whether they "always", "sometimes" or "never" use these coping strategies when they feel stressed.

In establishing whether or not a respondent pray that things would work out, 20% never use; 50% sometimes use, and 30% said they always prayed that things would work out.

When asked whether or not they got a group of family or friends together to help with the problem, 70% said they never; 10% said sometimes; and 20% of the respondents said they always.

20% of the respondents said they never share their feelings with a friend or family member; 30 percent sometimes share their feelings; whiles the majority (50%) said they always share their feelings with a friend or family member.

Respondents were asked if they remember what a parent or relative once said about dealing with these kinds of situation to deal with these kinds of situation, 12% said never; 50% said sometimes and 38% said they always.

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Table 8: Africentric coping strategies

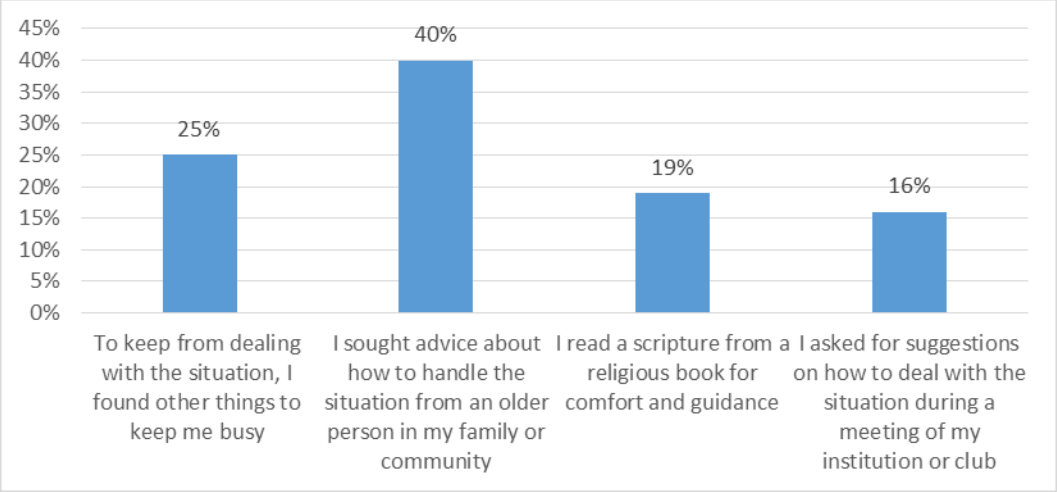
Responses	Never	Sometimes	Always
I prayed that things would work out.	20%	50%	30%
I got a group of family or friends together to help with the problem.	70%	10%	20%
I shared my feelings with a friend or family member.	20%	30%	50%
I remembered what a parent (or other relative) once said about dealing with these kinds of situations.	12%	50%	38%
I tried to forget about the situation.	17%	64%	19%
I went to church (or other religious meeting) to get help or support from the group.	29%	42%	29%
I approached my supervisor/manager for advice.	10%	10%	80%

Source: Field Survey, 2015.

4.5 Responses to other Africentric coping strategies

The respondents were also asked to select from a set of statements which best applies to their coping strategies. It was found that 25% of the respondents find other things to keep them busy. 40%, who forms majority of respondents indicated that, they sought advice from an older person in their family or community about how to handle the situation; 19% said they read a scripture from a religious book for comfort and guidance; and 16% indicated that they asked for suggestions on how to deal with the situation during a meeting of their institution or club. Figure 6 shows the percentage of respondents who provided responses to the coping strategies.

Figure 3: Responses to other Africentric coping strategies.



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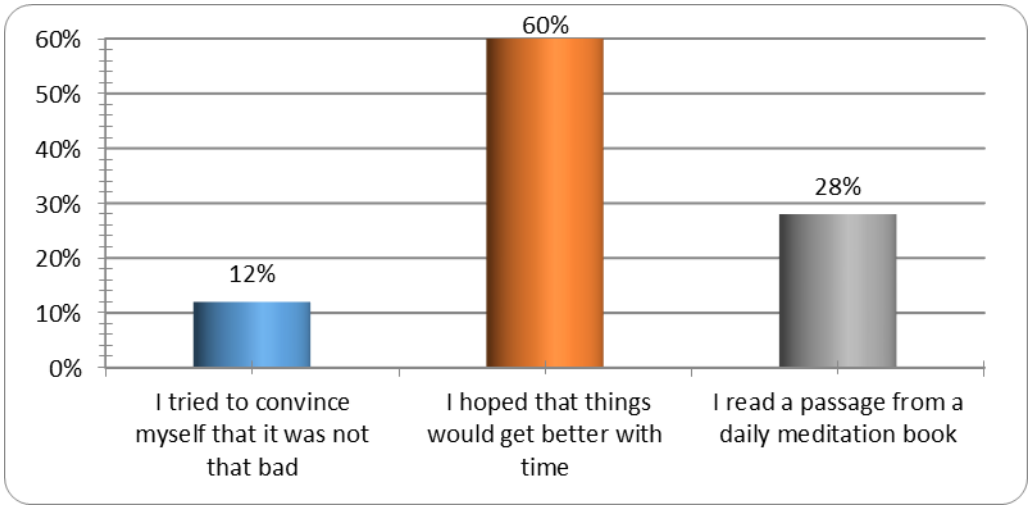
Source: Field Survey, 2015.

4.6 Responses to some specific Africentric coping strategies.

Figure 7 shows the percentage difference of respondents' responses to some specific Africentric coping strategies. From the figure, 12% of the respondents showed that they tried to convince themselves that it was not that bad. 60% indicated that, they hoped that things would get better with time, while 28% of the respondents read a passage from a daily meditation book.

Figure 4: Responses to some specific Africentric coping strategies



Source: Field Survey, 2015.

4.7 How respondents responded to the appropriate coping strategies.

16% of the respondents said that they asked for blessings from a spiritual or religious person. 26% indicated that they sought emotional support from family and friends, whiles the majority (55%) showed that they attended a social event to reduce stress.

Table 9: Respondents responded to the appropriate coping strategies.

I asked for blessings from a spiritual or religious person.	16%
I sought emotional support from family and friends.	26%
I burned incense for strength or guidance in dealing with the problem.	0%
I attended a social event (dance, party, and movie) to reduce stress caused by the situation.	55%
I sang a song to myself to help reduce the stress.	3%

Source: Field Survey, 2015.

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4.8 How respondents provided their responses to other general coping strategies with stress.

The study also sought to find out whether or not the library employees adopt other coping strategies in dealing with stress. The responses showed that 10% talk to a colleague to help with the situation. 23% indicated that they consult a manual; whiles 22% indicated that they go for additional training, but the majority of respondents (45%) showed that they consult an information technology professional for assistance.

Table 10: Responses to other general coping strategies.

I talk to a colleague.	10%
I consult a manual.	23%
I go for additional training.	22%
I consult an information technology professional.	45%

Source: Field Survey, 2015.

4.9 The extent to which coping strategies help respondents to deal with stress

The study was also finding out how the coping strategies adopted by an employee help in dealing with stress. 60% of the respondents cited that the coping strategies they adopt in dealing with their stress help them very well, 20% said it helps them well enough; 12% indicated that very little, and 8% indicated that the coping strategies does not help them at all.

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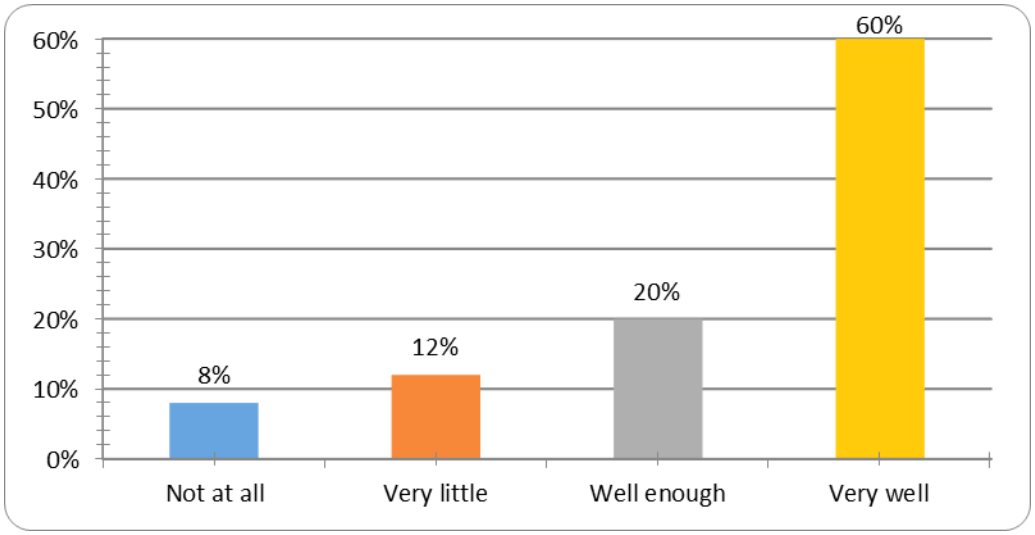
Figure 5: The extent to which coping strategies help respondents to deal with stress



Source: Field Survey, 2015.

4.10 Discussion

The study begun with the determination of the following research objectives.

To determine the extent to which academic librarians experience techno stress. The results of the study show that majority or academic librarians experience techno stress. From the responses of techno invasion and techno overload, majority of respondents frequently reported that they experience techno stress. The responses from Table 4 on all the 7 statements which measure techno overload and techno stress stood at 66%, 73%, 80%, 61%, 58%, 69%, and 79% respectively. Similar trends were also found in the measures of technostress as a result of techno complexity as well as the level of techno stress as a result of techno uncertainty. In the case of the level of techno-stress as a result of techno complexity, majority of respondents made up of 45% attributed techno stress to the fact that they find library related technology very complex. In the case of techno stress as a result of techno uncertainty, 65% of respondents indicated that they are very much affected by techno uncertainty. This observation is consistent with Tennant's (2003) assertion that professional academic librarians should be willing to constantly upgrade their skills and knowledge in order to keep up with the changing trends of technology. Bloom's (1985) assertion that the major causes of techno-stress can be attributed to the lack of technological competence and expertise further noting that computer training is very often hindered by stressors such as the fright of breaking the computer or even losing control. The observation also corroborates the

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findings by Wang et al. (2008) that other characteristics of computer anxiety may include the one's feelings of not having adequate time, the feeling of inability for one to comprehend and remember everything to complete job on time.

To determinine the kinds of Afrocentric strategies adopted by academic librarians to cope with techno- stress. From Table 5, respondents who indicated that they sometimes adopt Africentric strategies and those who sometimes use Africentric strategies outnumber those who claimed of never using Africentric strategies. These findings of the study validate Utsey et al. (2000) contention that people of African descent are more likely to employ Africentric coping strategies in order to deal with stress events. When asked of the extent to which the coping strategies enable them to solve techno-stress, 60 respondents said the Africentric strategies help them very. This result contrasts with Wang et al.'*s* (2008:3005) argument that, emotion-focused coping strategy is unlikely to correct the intimidating or stressful situations, but enables one to have a better feeling momentarily.

To establish the relationship between age and techno stress. Accordingly, to establish the relationship between techno-stress and age, responses of respondents were analyzed in the context of gender to find out if there was any significant variation or differences in the responses based on age.

Out of the 66 respondents who strongly agreed that they were forced by library related technology to do more work, 27 respondents were in the age category of 21-30, 23 were in the age ranges of 31-40, 16 respondents were in the age ranges of 41-60. This finding contrasts with Van Eck (2005) insistence that techno-stress experiences are likely to heighten by age 35 years but consistent with Burton-Jones and Hubona (2005) finding that age had a negative relationship on the perceive flexibility in the use of computer technology. Differences in sample sizes may however partially explain these variations.

For the 73 respondents who agreed that they are forced to work within tight schedules, 16 respondents were between the age ranges of 21-30, 20 were within the age range of 31-40, 26 respondents were between the ages of 41-50, and 11 were between the ages of 51-60. This trend is also consistent with Burton-Jones and Hubona (2005) finding that age had a negative relationship on the perceive flexibility in the use of computer technology.

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Out of the 80 respondents who strongly agreed that they are forced to change working habits to adapt to new technology, 22 respondents were between the ages of 21-30, 25 were between the ages of 31-40, 17 were between the ages of 41-50 and the remaining 16 were between the ages of 51-60.

The same were found in the areas of workloads as a result of technology, being in touch with work, sacrificing vacations due to library related technology and invasion of personal lives by library related technology. Specifically, those respondents who said they have workloads as a result of library related technology were 61. It was found that out of the 61, 20 were between the ages of 21-30, 22 were between the ages of 31 to 40, and 19 were between the ages of 41-50. With the 58 respondents who said that they have to get in touch with their work, 13 respondents were between the ages of 21-30, 14 were between 31-40 years, 16 were within the age range of 41-50 and 15 were within the age range 51-60. Out of 69 respondents who said they sacrifice vacation due to techno stress, 13 were between the ages of 21-30, 13 were between the age range of 31-40, 15 were between 41-50 years and 28 were between 51-60 years. With the 79 respondents who think that their personal lives are being invaded by techno stress, 22 were between the ages of 21-30, 20 were between the ages of 31-40 years, 18 were between the ages of 41-50 years and 19 were between the ages of 51-60. These findings provide enough grounds for the refutation of the age-techno-stress hypothesis.

To examine the relationship between techno stress and gender. Out of the 66 respondents who agreed that they are forced by library related technology to do more work, 32 were females and 34 were males. For the 7 respondents who disagreed 4 were females and 3 were males, for the 2 who disagreed, 1 was a male and the other was a female. Similar trends were found in other dimensions of techno stress measurement. Out of the 73 respondents who said that they are faced with tight schedules as a result of techno stress, 45 were males and 30 were females. For the 9 respondents who dissented to this statement, that is 6 disagreed and 3 respondents strongly disagreed. Out of this, 4 were females and 5 were males. Out of the 80 respondents who said that they are forced to change their work habits, 36 were females and 44 were males. These mixed results disprove any relationship between techno stress and gender. There is no evidence from this study to support previous studies findings such as Gefen and Straub (1997) as well as Venkatesh and Morris (2000) that showed that women are more likely to suffer from higher levels of techno-stress experiences in the workplace than men.

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To establish the nature of the relationship between techno stress and work experience**.** Findings point to a relationship between techno-stress and work experience. Most people who disagreed on the techno-stress variables were mostly identified with people who have acquired longer years of experience. The 7 respondents who disagreed and the 2 respondents who strongly disagreed to the statement of whether they are forced by library related technology to do more work than they can handle were all from those who had acquired more than 10 years of working experience. For those who disagreed to the statement "I am forced by library related technology to work within tight schedules, those who disagreed were 6 and those who strongly disagree were 3 respondents. These 9 respondents were also identified among those who have attained more than 10 years of working experience. The other variants of techno stress produced similar trends

This observation in findings is indicative a positive relationship between work experience and techno-stress. This finding also conforms to Weil and Rosen (1997) study's findings s that showed computer professionals, who are more qualified in terms of experience, tend to experience less stress when there are challenges associated with the use of the computer.

The study finally had the objective to determine the relationship between techno stress and educational level. To establish the relationship if any between techno-stress and educational level, responses of sampled respondents on techno-stress variables were analyzed to identify key trends in techno-stress behaviors. For those who said they were forced to do more work due to library related technology and numbering 66, 38 were identified with the respondents who hold Undergraduate Diploma, 18 had University Degree, and the least percentage numbering 10 had Post Graduate Diploma. No respondent holding Master's degree was identified with this group. The same observations were made across all the other techno-stress measurement variables. For instance, no Post Graduate Diploma (PGD) reported of being forced to change working habits to adapt to new technologies, being forced to sacrifice job holidays, and no case of invasion of their personal lives as a result of intrusion of new technologies related to library work. This finding is inconsistent with Kouvonen et al. (2005) conclusion that computer professionals' employees with more computer-related experience reported more stress than employees with limited or no computer –related experience. The research design can also be a factor explaining these variances in techno-stress behavior. The diversity of job roles of sampled respondents can also partially account for these conflicting findings.

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5. 1 Summary

This study sought to examine the incidence of techno-stress experience among academic librarians of the University of Ghana. Responses solicited from respondents drawn from academic library employees provided the core inputs for the study. The research objectives included the determination of the level of techno-stress experience among respondents and the associated Africentric coping strategies used by respondents as well as investigating the relationship if any between techno-stress and gender, age, work experience, and level of education. It was revealed that academic librarians experience techno-stress to as indicated by the Tarafdar scale. Respondents adopt Africentric coping strategies in dealing with techno-stress. These coping strategies were however found to be ineffective. Significant variations were noted in the level of experience of techno-stress based on work experience and level of education. On the contrary, there was no variation in the levels of techno-stress considering demographic variables such as age and gender.

5.2 Conclusion

From the findings of the study, academic librarians experience techno stress to some extent. The study also established that academic librarians adopt Africentric coping strategies to deal with techno-stress. From the perspectives of respondents, they are able to cope with techno stress with these the Africentric coping strategies. No relationship was also found between techno stress and age. There is no relationship between techno stress and gender from the findings of the study. The findings indicate that there may be relationship between stress and work experience which indicate seniority. This means long years of work experience enhances one's ability to cope with techno stress. The relationship between techno stress and educational qualification is found to be positive. This means academic librarians with a higher educational qualification are more able to cope with techno-stress than those with low educational levels.

5.3 Recommendations

To address the problems of techno-stress, the following recommendations are made.

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It is recommended that academic librarians be educated on the incidence of techno-stress and its associated symptoms. This will enable them to recognize the symptoms of techno-stress and be able to deal with it appropriately.

The time patterns with which employees work can be curtailed. This will be particularly useful in the case of physical stress.

There should be regular training sessions to update the skills of employees on technological library advances at the various library units of the university.

The time allocated for training academic librarians should be long enough to ensure that employees acquire relevant and sufficient knowledge. This becomes imperative as employees hinted at not having enough time to learn about emerging library related technologies.

5.4 Limitations of the study and implications for areas of further research

There are several limitations to this study.

First while admitting that the study provides useful insights into the subject matter of techno-stress, the findings are based on the peculiar circumstances among academic librarians of the University of Ghana. Therefore the extent to which findings can be generalized to other settings is limited in scope. In other words, the external validity of the outcome of the study is limited.

Secondly, the findings of the study were solely based on responses generated from questionnaires and therefore there could be an element of subjectivity. To minimize this, future research studies should employ other research methods in the analysis of techno-stress. Within the scope of qualitative research, analysis of data can be extremely subjective and prone to various preconceptions. Much as the research attempted to be objective in its analysis, there is a possibility that cultural and social perspectives could have influenced the analysis.

Finally, no attempt was made in the study to examine the effects of techno-stress both on the individual and the organization. This area of interest serves as an avenue for future research.

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APPENDIX A

Questionnaire

Techno-stress and Africentric coping strategies: an exploratory study among academic library employees in Ghana.

Dear Respondent,

My name is Frank Bonnah, and I am currently studying for a Master of Information Technology degree at the University of Pretoria. I am conducting a study on techno-stress and Africentric coping strategies in partial fulfilment for the degree.

The findings of this study will provide information that could enhance the work of library employees in Ghana by helping;

1. Employees of libraries to comprehend and recognise negative effects of techno-stress on their personal health and on the job.
2. To find out if socio-demographic variables such as age, gender, level of experience and level of education will predict techno-stress experiences among academic library employees.
3. To enlighten employees on the efficacy of adopting Africentric coping strategies to reduce the effects of techno-stress on one's physical and psychological health.

Your responses will enable me to gather data in order to gather this empirical information.

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SECTION A- PERSONAL DATA

1. What is your gender? Please tick / ✓/
   a) Female…… ☐
   b) Male…… ☐

2. Please tick / ✓/ the age category in which you are.
   a) 21 – 30 years…… ☐
   b) 31 – 40 years…… ☐
   c) 41 – 50 years…… ☐
   d) 51– 60 years…… ☐

3. Please tick / ✓/ to indicate your highest educational qualification.
   a) Undergraduate diploma…… ☐
   b) Undergraduate degree…… ☐
   c) Post-graduate diploma …… ☐
   d) Master's degree…… ☐
   e) Doctoral degree…… ☐

4. Please state your position/job title in the library.

   ……

   ……

5. Which University of Ghana Library System do you work for? Please tick / ✓/ to indicate which of the libraries you work for:

a) Balme library…… ☐
b) University of Ghana Business School library…… ☐
c) College of Health Sciences library…… ☐
d) Institute of African Studies library…… ☐
e) Accra City Campus library…… ☐
f) Faculty of law …… ☐
g) Halls of residence library…… ☐
h) Departmental library…… ☐

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6. Which library related ICT (s) do you work with in the library? Please tick / ✓/ the applicable ones:
   a) Integrated Library Management System…… ☐
   b) Network technologies (internet, virtual private network and intranet…… ☐
   c) Communications technologies (General application technologies word processing, e-mail, spreadsheet, PowerPoint, desktop publishing)……..... ☐
   d) Desktop computer, and mobile technologies (laptops, cell phones and notepads…….. ☐
   e) Printers, scanners, modems…… ☐
   f) None…… ☐
   g) Other (Please specify ……..... ……

7. Please tick / ✓/ to indicate the number of years you have worked in the library.
   a) Less than one year…… ☐
   b) 1 – 5 years…… ☐
   c) 6 – 10 years……..... ☐
   d) 11 – 15 years…… ☐
   e) 16 – 20 years……..... ☐
   f) 21 and above…….... ☐

SECTION B- TECHNO-STRESS

Please answer the following questions. For each statement in questions **8** to **14**, indicate the level of agreement or disagreement by ticking / ✓/ the appropriate response

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

8. I am forced by library related technology to do more work than I can handle.

1	2	3	4	5

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9. I am forced by library related technology to work within very tight time schedules.

1	2	3	4	5

10. I am forced to change my work habits to adapt to new library related technologies.

1	2	3	4	5

11. I have a higher workload because of increased technological complexity.

1	2	3	4	5

12. I have to be in touch with my work even during my vacation due to work associated mobile devices.

1	2	3	4	5

13. I have to sacrifice my vacation or weekend time to keep current on administrative work like e-mail.

1	2	3	4	5

14. I feel my personal life is being invaded by the intrusion of library related technology.

1	2	3	4	5

15. Which of the following statements applies to your experience with techno-stress?

a) I do not know enough about library related technology to handle my job satisfactorily..... ☐
b) I need a long time to understand and use new technologies..... ☐
c) I do not find enough time to study and upgrade my library related technological skills..... ☐
d) I find library related technology too complex..... ☐

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16. To what extent do constant upgrades in computer software, change in computer hardware or frequent upgrades in computer networks disrupt your ability to work?
    a) Very much…… ☐
    b) Somewhat…… ☐
    c) Not all…… ☐

17. Please explain how you feel when having to constantly learn the use of new software or hardware.

……

……

……

……

SECTION C- AFRICENTRIC" COPING STRATEGIES

18. Please tick / ✓/ to indicate which of these coping strategies you have used at work or when you experience stress from dealing with library technologies

Never	Sometimes	Always
1	2	3

a) I prayed that things would work out.

1	2	3

b) I got a group of family or friends together to help with the problem.

1	2	3

c) I shared my feelings with a friend or family member.

1	2	3

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d) I remembered what a parent (or other relative) once said about dealing with these kinds of situations.

1	2	3

e) I tried to forget about the situation.

1	2	3

f) I went to church (or other religious meeting) to get help or support from the group.

1	2	3

g) I approached my supervisor/manager for advice

1	2	3

19. Select as appropriate the strategy(ies) you adopt in coping with any stress.

a) To keep from dealing with the situation, I found other things to keep me busy……..☐

b) I sought advice about how to handle the situation from an older person in my family or community……☐

c) I read a scripture from a religious book for comfort and guidance……..☐

d) I asked for suggestions on how to deal with the situation during a meeting of my institution or club……..☐

20. Please indicate which of the strategy(ies) you use to deal with your stress.

a) I tried to convince myself that it was not that bad……☐

b) I hoped that things would get better with time……☐

c) I read a passage from a daily meditation book……☐

d) I spent more time than usual doing more things with friends and family……☐

e) I tried to remove myself from the situation……..☐

21. Please indicate the appropriate coping strategy(ies) which you use in dealing with your stress**.**

a) I asked for blessings from a spiritual or religious person……☐

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b) I sought emotional support from family and friends……..... ☐

c) I burned incense for strength or guidance in dealing with the problem…… ☐

d) I attended a social event (dance, party, and movie) to reduce stress caused by the situation…… ☐

e) I sang a song to myself to help reduce the stress…… ☐

22. Please select appropriate the strategy(ies) you use to deal with stress.

a) I talk to a colleague…… ☐

b) I consult a manual…… ☐

c) I go for additional training…… ☐

d) I consult an information technology professional…… ☐

23. To what extent do your coping strategies help you to deal with your stress?

a) Not at all…… ☐

b) Very little…… ☐

c) Well enough…… ☐

d) Very well…… ☐

24. Finally, which other coping strategy(ies) do you undertake to overcome the challenges of techno-stress?

Thank you for your time and participation.

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APPENDIX B

RESEARCHER DECLARATION

Hereby, I …**Frank Bonnah**…… in my capacity as……**Researcher**…., declare that Research subjects were informed, information was handled confidentially, research subjects reserve the right to choose whether to participate.

1. Written permission was obtained for the execution of the project.

2. There was no conflict of interests or financial benefit, for the researcher or the University of Ghana that materially affected the outcome of the investigation or jeopardised the name of the university.

3. The data that I gathered is correct and represented truly.

4. Signed: _____ Date: 29th_October, 2015_

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APPENDIX C

Informed consent form

(Form for research subject's permission)

(Must be signed by each research subject, and must be kept on record by the researcher)

1. Title of research project:
2. I …… hereby voluntarily grant my permission for participation in the project as explained to me by
   ……..
3. The nature, objective, possible safety and health implications have been explained to me and I understand them.
4. I understand my right to choose whether to participate in the project and that the information furnished will be handled confidentially. I am aware that the results of the investigation may be used for the purposes of publication.
5. Upon signature of this form, I will be provided with a copy.

Signed: _____ Date: _____

Witness: _____ Date: _____

Researcher: _____ Date: _____

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