MARKETING AND USE OF ELECTRONIC LIBRARY RESOURCES TO STUDENTS IN TECHNICAL UNIVERSITIES IN GHANA.

BY

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DECLARATION

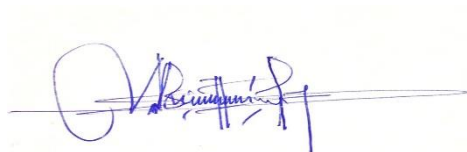Name: **PATRICK BAAYEL**

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Thesis Title: **Marketing and Use of Electronic Library Resources to Students in Technical Universities in Ghana.**

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE DATE

(PATRICK BAAYEL)

DEDICATION

This study is dedicated to the memory of my late parents, Mr., and Mrs. Baayel, as well as to my brothers Dominic, Philip, Julius, George, and Sebastian, as well as to my friend Desmond Demegang Kunaa-Der, for their outstanding financial, moral, and spiritual support throughout my journey to the completion of this thesis.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACRL -   Association of College and Research Libraries

AL -   Academic Library

ALA -   American Library Association

AMA-   American Marketing Association

ATU-   Accra Technical University

BTU-   Bolgatanga Technical University

CARLIGH-   Consortium of Academic and research libraries in Ghana.

CaTU-   Cape Coast Technical University

CD-ROM/DVD ROM -   Compact Disk Read Only Memory/Digital Device Drive

DHLTU-   Dr. Hilla Limann Technical University

DoI-   Diffusion of Innovation theory

EIRs-   Electronic Information Resources

HTU-   Ho Technical University

ICT(s) -   Information and Communication Technologies

IFLA-   International Federation of Library Associations and Institutions

IT -   Information Technology

KsTU-   Kumasi Technical University

KTU-   Koforidua Technical University

LIS-   Library and information Science

PNDL-   Provisional National Defense Law

SMS -   Short Messaging Services

SPSS -   Statistical Product and Services Solution

STU-   Sunyani Technical University

TAM-   Technology acceptance model

TaTU- Tamale Technical University

TRA - Theory Reasoned Action

TTU- Takoradi Technical University

TUs- Technical Universities

UNISA - University of South Africa

UTAUT- Unified Theory of Acceptance and Use of Technology

ABSTRACT

The low utilisation of e-resources from accessible databases among students in Ghanaian technical universities (TUs) is an issue of concern for library management. Effective marketing strategies are seen as a promising solution to address the challenges posed by this limited usage of e-resources. This study aimed to explore and investigate marketing techniques that can promote the utilisation of e-resources offered by TU libraries to deserving students, thereby maximising the attainment of the intended goals. The study was underpinned by the pragmatic paradigm, where a concurrent triangulation mixed-methods design was used for the study. Data was gathered through surveys and interviews from a total sample of 727, involving 706 survey respondents and 21 interview participants. The survey data was analysed using Statistical Product and Services Solution (SPSS), version 26, and smartPLS 4 structural equation modelling of latent variables. The interview findings were analysed using thematic analysis. The findings revealed causes of the low students' usage of e-resources in libraries. Key among them is a lack of awareness, a lack of market, poor searching techniques, and inadequate computer devices for users. The most common methods of marketing the resources were informal and conventional marketing practices among the libraries, which are primarily print-based channels and freshman orientations. Factors that influenced the students' behavioural intentions to use the resources are marketing, awareness, the user environment, perceived relevance and ease of use, and user skills. The study suggests a coherent and structured strategy for marketing e-resources. It was established that the successful implementation of marketing campaigns will depend on the collection development policy adopted, the strategic plan that spells out the human and logistical resources, and the budgetary allocations. The proposed strategies would enhance not just the marketing of electronic resources inside Ghanaian TU libraries but also those of other Ghanaian university libraries. Libraries in other African nations with operational environments comparable to those of Ghana's TUs might also potentially adopt and implement the study's findings.

KEYWORDS:

Electronic library resources: e-resources use; marketing e-resources; user awareness; academic libraries; technical university libraries; Ghana; e-resources utilisation; student users; contemporary marketing strategies; emerging marketing techniques; Web 2.0 technologies; information literacy skills; library professionals; innovative marketing strategies; faculty collaborati

CHAPTER 1:

INTRODUCTION TO THE STUDY

1.1 Background of the study

In response to the evolving landscape of teaching, learning, and research, universities, through their libraries, are actively striving to cater to the essential information needs of teaching, learning, and research (Suleiman & Joshua, 2019:7). Academic libraries, considered knowledge hubs, play pivotal roles in the delivery of education and research, acting as central components of academic institutions (Nicholas et al., 2018:108). Therefore, their historical and contemporary significance makes academic libraries integral to the successful functioning of their parent educational institutions (Tetteh & Nyantakyi-Baah, 2019:44). The recognition of libraries as agents of social change has therefore become a prevalent perspective within academic institutions (Tetteh, 2018:316; Tetteh, 2018).

While library services, information resources, and physical library environments hold immense value for users, it is imperative for academic libraries in Ghana to equip themselves with electronic-based information resources, knowledgeable staff, and robust computer systems with high broadband capabilities. To provide timely and accurate information, universities invest substantial amounts in subscribing to e-resources, meeting the information needs of their academic communities for teaching, learning, and research (Stoupenos & Woods, 2023:13). Electronic information resources (e-resources) offer significant advantages over print sources. Access to e-resources enables libraries to better serve users by providing access to a broader range of information resources, even those not locally held. These resources offer cost-effective, remote access 24/7, efficient information dissemination, easy updates, maintenance, space savings, and advanced search features not available in print (Abdulrahman and Onuoha, 2019).

A major concern raised by key stakeholders is the lack of communication between libraries and research students, coupled with misconceptions that everything is readily available on the internet,

diminishing the perceived need for physical library services (Delaney & Bates, 2018:64). The universal and persistent issue of a lack of awareness of library resources and services necessitates active and continuous marketing efforts (Delaney & Bates, 2018:79).

To fulfil their mandates, academic libraries must embrace modern technologies to enhance user knowledge and facilitate access to information (Olayode, Omosebi, Oladokun, and Omosebi, 2023). The transformation in disseminating information resources includes incorporating electronic information resources, aligning with advancements in information and communication technologies (ICTs) that have turned the world into a global village (Olayode et al., 2023).

Furthermore, libraries should actively engage in marketing library services and resources to demonstrate their value among stakeholders (Tetteh & Nyantakyi-Baah, 2019:44). This is important because academic libraries are in competition with other sectors of their institutions for limited funding due to budgetary pressures (Tripathi & Jeevan, 2013, as cited in Tetteh & Nyantakyi-Baah, 2019:44).

Although academic institutions have made significant expenditures in e-resources, African universities, particularly those in Ghana, lag well behind their counterparts in industrialised information societies in terms of accessibility and e-resource utilisation (Olayode et al., 2023). The low levels of research productivity in African universities have been attributed to the poor accessibility and utilisation of electronic information resources (Abdulrahman and Onuoha, 2019). Observations of low usage of electronic information resources in some Ghanaian universities (Dukper, Sakibu, & Arthur, 2018) underscore the apparent underutilization of available information resources by students.

Marketing library resources and services is a topical issue within the arena of library and information science (LIS) in Ghana, as it is said to be the panacea for raising awareness and encouraging students to patronise these valuable resources available in libraries (Agyei & Ngulube, 2020). Marketing library resources and services at the University of Education Winneba and

University of Cape Coast to students to use them, according to Atuase and Maluke (2022:111), resulted in increased patronage of the resources among students. Atuase and Maluke (2022:123) found that students at Ghana's University of Education Winneba and University of Cape Coast used library resources and services more frequently through the intervention of various marketing strategies and that this had a favourable impact on learning activities.

Given the evident of low student utilisation of available information resources in university libraries (Dukper, Sakibu, & Arthur, 2018), it is crucial for universities to positively influence student interest through the implementation of modern marketing approaches. This implies that Ghanaian technical universities ought to embrace contemporary marketing strategies to enhance awareness, access, and usage of e-resources among users, especially students.

1.2 Contextual setting of the study

Ten (10) polytechnics existed in Ghana before the year 2016. Prior to 1992, polytechnics in Ghana operated essentially as non-tertiary, second-cycle institutions offering advanced craft courses and a few technician-level courses (Nsiah-Gyabaah, 2005). The Polytechnic Act of 1992 (PNDCL 321) and Act 754 (2007) converted these craft-based institutions into tertiary status specifically to offer tertiary education in the fields of manufacturing, commerce, science, technology, applied social science, applied arts, and other fields accepted by the minister of education (Ministry of Education, 2014).

The technical universities (TUs) concept, until recently (2016), remained relatively unpopular within the space of tertiary level education in Ghana (Frimpong, Agyekum, and Asare, 2018). However, in 2016, the government of Ghana submitted the Technical Universities (TUs) Bill to Parliament (the legislative body of the Republic of Ghana) for consideration. The bill was enacted and assented to by the President of Ghana on August 31, 2016, and became the Technical University (TU) Act (Act 992). Based on a recommendation from a technical assessment committee, the government began converting existing polytechnics in Ghana that met a conversion

criterion into TUs (Frimpong et al., 2018). As per the Technical University Amendment Act (Act 1016) of the Republic of Ghana, dated April 30, 2020, there are 10 TUs in Ghana. The TUs in Ghana are, therefore, the Kumasi Technical University (KsTU), Accra Technical University (ATU), Sunyani Technical University (STU), Koforidua Technical University (KTU), Ho Technical University (HTU), Tamale Technical University (TaTU), Takoradi Technical University (TTU), Cape Coast Technical University (CaTU), Bolgatantanga Technical University (BTU), and Dr. Hilla Limann Technical University (DHLTU) in Wa (GPCL, 2020).

These TUs will provide higher education in science and technology-based disciplines such as engineering, technical and vocational skills, and training, applied arts, and related disciplines, with a focus on business and the humanities. This is what the government believes will facilitate mass training of highly skilled manpower among its citizens, thereby propelling the country's industrial drive (MoE, 2014). This is clearly stated in the TUs Act, 2016 (Act 992) passed by the Parliament of the Republic of Ghana and assented to by the President of Ghana on August 31, 2016. Thus, TUs are technologically based universities with a focus on the application of technology to the various fields of learning rather than the search for new knowledge. With this new and uplifted status as universities, TUs are granted semi-autonomy to function as institutions of higher learning comparable to the other traditional public universities in Ghana. This presents TUs with the mandate to design and mount their academic programmes in consultation with the National Council for Tertiary Education (NTCE) and the National Accreditation Board (NAB), which have the constitutional backing to provide their respective oversight responsibilities for the conduct of tertiary institutions in Ghana (Frimpong et al., 2018).

The TUs, therefore, currently offer a minimum of three (3) years of National Higher Diploma (HND) programmes, four (4) years of Bachelor of Technology (B Tech) degree programmes, and two (2) years of Master of Technology (MTech) programmes in science- and technology-based disciplines. Most of the students in the TUs, however, fall under the undergraduate (HND and B-Tech) category of students, and they primarily arrived at the TUs after they completed senior high school (SHSs). These types of students, one would expect, will expect quality information

resources to support their learning and academic research activities from their campus libraries. However, Agyekum and Filson (2012) believe that school libraries are not widely available, are not well organized, and lack the most basic resources for adequate exposure for students to function as information literate in the Ghanaian education system. It is therefore suspected that the background of students in TUs, in terms of students' exposure to libraries, is negatively affecting students' ability or inability to take advantage of technology, including their awareness and use of e-resources. Considering their new status as well, TUs in Ghana are expected to be beset with many logistical and human resources constraints, including the issues of providing congenial learning environments and providing the needed information resources to students.

Currently, the eight TUs in Ghana are all paid-up members of the consortium of academic and research libraries in Ghana (CARLIGH). Established in 2004, CARLIGH is an umbrella organisation of academic and research libraries in Ghana. It enables access to vital research information and provides sustainable access to resources believed to be of great importance to education, partnership, and openness. But it is observed that some of the available electronic information resources have not been utilised at all by students. Data available at CARLIGH on the state of e-resource subscriptions indicates that as of February 2019, the consortium subscribed to about 18 different academic databases, with at most 11 individual databases being paid for by individual TUs in Ghana (CHARLIGH, 2019). However, user statistics at two of the TUs' (i.e., Accra and Ho) libraries exhibit low usage of the electronic resources in the subscribed scholarly databases. The reason for this low usage is not known, but it might be like Acheampong, Boakye, and Agyekum (2019), who found that subscribed e-journals available to students at Kumasi Technical University in Ghana were not efficiently utilised because students were not aware of the availability of the e-journals at the library. Furthermore, students were found to be lacking the competencies to use computers, while inadequate infrastructural facilities like computers and bandwidth also hindered accessibility (Acheampong et al., 2019). The low or poor usage of expensive e-resources is raising concerns among both librarians and university authorities.

1.3 Statement of the problem

Electronic information resources offer several benefits over traditional print-based library resources (Okyere-Kwakye and Nor, 2020; Ankrah and Atuase, 2018), and this may explain why there has been an exponential growth in the provision of such resources in modern times. Libraries in institutions of higher learning in Ghana are said to be spending significant amounts of their annual budgets on subscriptions to online databases and e-journals to enable them to provide access to e-resources (Dukper, Sakibu, and Arthur, 2018).

Despite the huge investments being made into the building of e-resources, some studies in Ghana (Okyere-Kwakye and Nor, 2020; Ankrah and Atuase, 2018; Dukper et al., 2018; Yebowaah and Plockey, 2018; Tetteh & Nyantakyi-Baah, 2019:44) have demonstrated that these resources are often underutilised in academic institutions by users, especially students. The issue of low student patronage of e-resources may be due to low levels of awareness and a lack of the requisite skills to access and utilise the resources. Dupker et al. (2018), for example, find that students' use of e-resources is extremely low due to their lack of awareness. A similar observation in some technical universities' libraries in Ghana showed evidence of low usage statistics for the subscribed e-resources' databases. The observations were mostly based on evidence extracted from Emerald and Ebscohost online databases' usage registers, from the TUs Library Reports of 2021 and 2022, and information obtained verbally from library staff. The low levels of use of these library resources are worrying for most libraries. The libraries in the TUs in Ghana also seem to be grappling with the issue of low student patronage of their e-resources due to inadequate marketing and promotional strategies coupled with the increasing competition being witnessed by libraries in the information provision industry.

This study envisages that marketing and promotion campaigns of e-resources by libraries in the TUs in Ghana might be a viable option to address the challenges and, thereby, create students' awareness to improve the usage of e-resources. This study, therefore, seeks to explore appropriate strategies for improving students' utilisation of e-resources in technical universities in Ghana.

1.4 The purpose and objectives of the study

This study sought to explore appropriate strategies and tools for the marketing of e-resources to students in technical university libraries in Ghana in order to improve their utilisation.

1.5 Objectives of the study

The study was guided by specific objectives, which are to:

i. identify factors causing students' low usage of e-resources in technical universities (TUs) in Ghana.

ii. ascertain existing strategies libraries use for marketing e-resources to students at TUs in Ghana.

iii. explore contemporary and emerging marketing approaches for marketing e-resources in the TU libraries.

iv. determine factors that influence the behavioural intentions of students towards using e-resources from the libraries.

v. determine the competencies of the library professionals towards marketing e-resources to students in TU libraries.

vi. propose innovative marketing measures to influence optimal students' usage of e-resources in the TUs' libraries.

1.6 Research questions

The following research questions guided the study:

i. What factors contribute to students' low usage of e-resources in technical universities (TUs) in Ghana?

ii. What are the existing strategies employed by libraries for marketing e-resources to students at TUs in Ghana?

iii. What are the contemporary and emerging marketing approaches for marketing e-resources in TU libraries?

iv. What factors influence the behavioural intentions of students toward using e-resources from libraries?

v. What are the competencies required of library professionals regarding marketing e-resources to students in TU libraries?

vi. What innovative marketing measures are proposed to influence optimal students' usage of e-resources in TU libraries?

By addressing these research questions, the study aims to provide a comprehensive understanding of the challenges, strategies, influences, and competencies related to the marketing and utilisation of e-resources in technical university libraries in Ghana.

1.7 Justification /significance of the study

It was envisioned that the findings of the study will propose marketing strategies after analysing the underlying problems and how they could successfully be applied to market e-resources within the technical university libraries in Ghana. The findings will help raise awareness among library professionals about the importance of using modern marketing and promotional strategies to increase students' use of e-resources. The researcher is confident that the results can be generalised to other academic libraries in other public universities in Ghana since almost all public universities were set up by taxpayers and thus bear many semblances in terms of the purpose of existence, missions, and vision statements. It is also expected that the findings of this study will guide not only libraries in TUs in Ghana but other academic libraries in public universities in Ghana with new ideas on how they will create students' awareness, convince them, and attract them to visit the libraries, access and utilise e-resources, as well as other library products and services. Overall, the researcher is confident that the results can be generalised to other academic libraries in other public universities in Ghana since almost all public universities in Ghana were set up by the taxpayer and thus bear many semblances in terms of the purpose of existence, mission, and vision statements. If

the library and information centre staff are made aware of their role as marketing and promotional agents because of this study, they will see it as their responsibility to implement strategies to improve students' access to and use of electronic resources. Evidence of increased usage statistics of e-resources will augment students' academic and research output. This multiplying effect will lead to research-oriented university graduates that will shortly lead the charge of research and innovative base economies in the nation of Ghana. The library authorities in the TUs in Ghana will be in a pole position to demand and justify the expenditure in terms of the budgetary allocations made towards e-resources' acquisition. The section that comes next presents an overview of the theoretical framework.

1.8 Overview of theoretical framework.

In the study, theories and literature are discussed. The theories are discussed first as they inform the literature, and the literature comes thereafter. The theoretical framework and literature review serve as the backbone of any research study, providing a conceptual and contextual framework for understanding the research problem (Braidotti, 2019:31; Kivunja, 2018:44).

In this study, a theoretical triangulation approach is adopted (Moon, 2019; Noble & Heale, 2019). The strategy is designed to enhance the research process and outcomes by embracing diverse theoretical perspectives. Theoretical triangulation involves employing multiple theoretical perspectives or frameworks to investigate a phenomenon, recognising that the use of diverse theories can offer a more comprehensive understanding of complex research problems (Moon, 2019:103; Noble & Heale, 2019:67). For the theoretical framework and models, the study draws on several theories categorised into two groups: theories and models of innovation and technology adoption, and theories and models of human and consumer behaviour management. These theories and models are divided into two groups: theories and models of innovation and adoption of technology, and theories and models of human and consumer behaviour management. The innovation and technology adoption theories and models are diffusion of innovation adoption theory, technology acceptance models (TAM1, TAM2, and TAM3), and the unified theory of

acceptance and use of technology (UTAUT). The human/consumer behaviour management theories and models include the Social Marketing Theory and the 7 Ps Marketing Mix Model. These theories and models are selected based on their relevance to explaining the dynamics of marketing socially valuable information resources, such as libraries and their associated resources. Additionally, they shed light on students' acceptance of technology for accessing and optimising the use of e-resources in TU libraries. This comprehensive theoretical foundation aims to enrich the study's analytical depth and contribute to a nuanced understanding of the research problem.

1.9 Overview of the literature review

In the view of Kumar (2011:54), there are two far-reaching functions of a literature review, which are to position the study within its theoretical context and to allow the researcher to contextualise the findings of the study relative to the prevailing body of knowledge. To review related literature, a preliminary review indicated the availability of sufficient literature to support the study. Therefore, the study was built on previous studies on marketing and usage of library resources in general and with a special focus on marketing and use of e-resources in academic libraries across the world, Africa, and Ghana, particularly in the following areas: marketing as a concept; marketing library resources and services; marketing e-resources; causes of students' low utilisation of e-resources; marketing skills and attitudes of library staff; challenges of marketing information resources and services; and marketing tools and strategies used by academic libraries. The review essentially covers relevant literature that looks at the relationships between marketing information resources and the availability, accessibility, and utilisation of electronic resources.

1.10 Overview of the research methodology

The study produces both quantitative and qualitative data. As a result, the study used the concurrent triangulation mixed-methods research design, in which the researcher combines quantitative and qualitative data simultaneously to produce a thorough examination of the research problem. Both forms of data are roughly gathered at the same time, with the information harmonised during the interpretation of the overall results. Contradictions or incongruent findings are explained or further

probed, as Creswell (2021) stipulates. The investigator uses a quantitative process with a questionnaire as a data collection instrument to collect statistical and numerical data from student respondents, while the qualitative data is collected from library professionals using interviews as a data collection instrument. The study targeted 932 registered students selected from TUs through a stratified random sampling process and 34 library professionals, respectively, as its respondents. Semi-structured questionnaires and interviews, as well as document analysis, were used for structured records review. As part of the study, students were given a semi-structured questionnaire, and interviews with library professionals were conducted. The collected data were analysed using the SPSS data analysis tool, structural modelling equations (SEM-PLS), and Microsoft excel application software, and the findings were presented in the form of frequencies, percentages rounded up to one decimal place, charts, and graphs. A detailed discussion of the research methodology is provided in Chapter Four of the study. Table 1.1 presents a summary of the data collection tools adopted for each of the specific objectives.

Table 1.1: Research matrix: summary of research objectives, questions, approaches & data collection instruments.

Research objectives	Research questions	Paradigm & approach	Data collection instruments
1. identify factors that cause students' low usage of e-resources in TUs libraries in Ghana	What factors contribute to students' low usage of e-resources in technical universities (TUs) in Ghana?	Pragmatism Mixed method	Interviews with library professionals, questionnaires for students, and data from secondary sources
2. Ascertain the existing methods of marketing e-resources to students in TU libraries.	What are the existing strategies employed by libraries for marketing e-resources to students at TUs in Ghana?	Pragmatism Mixed method	Interviews with library professionals and questionnaires for students
3.explore contemporary and emerging methods marketing e-resources to students at TU libraries.	What are the contemporary and emerging marketing approaches for marketing e-resources in TU libraries?	Pragmatism Mixed method	Data is gathered using interviews with library professionals and a questionnaire for students.
4.determine factors that influence the behavioural intentions of students to utilise e-resources.	What factors influence the behavioural intentions of students toward using e-resources from libraries?	Pragmatism Mixed method	Data is gathered using questionnaires for students and interviews with library professionals.
5.determine the skills required of library staff to e-resources resources to students.	What are the competencies required of library professionals regarding marketing e-resources to students in TU libraries?	Pragmatism qualitative method	Data is gathered using interviews with library professionals.
6 propose innovative marketing measures to influence optimal students' usage of e-resources from the libraries.	What innovative marketing measures are proposed to influence optimal students' usage of e-resources in TU libraries?	Pragmatism Mixed method	Data will be gathered through interviews with library professionals, questionnaires for students, and data from secondary sources.

1.11 Limitations and Delimitations of the study

The purpose of this study was to promote the marketing and use of e-resources by students to improve their access to and use of the e-resources available in the libraries of technical universities (TUs). However, several restrictions and limits impacted the research's inclusivity and breadth.

1.11.1 Limitations

To fairly represent all students across the ten TUs in Ghana, only 932 individuals were chosen by a basic random selection approach, which placed limitations on the study. This means that not all the student body's viewpoints may be properly represented in the findings'

Furthermore, the study's exclusive focus was on students who were registered library users. This restricted the number of students who may be included who had not yet registered with their campus libraries at the time of data collection.

Moreover, due to difficulty in reaching students registered for weekend sessions and distance learning modules, these categories of students were not included in the study. Due to this, the researcher may have missed important insights from such non-traditional students because of focusing on only regular students.

On the other hand, the research concentrated on the main libraries of the selected TUs, excluding satellite libraries at the faculty and departmental levels. These satellite libraries were omitted as they did not maintain extensive records of students and did not independently provide e-resources.

It is also important to further note that the researcher's ten years of professional experience as an e-resources librarian may have introduced bias into the data gathering and analysis process. Despite this, the researcher's experience with the topic gave the study more depth and knowledge.

1.11.2 Delimitations

One key delimitation was the exclusion of satellite and branch libraries. The study focused exclusively on the main libraries, where e-resources units were primarily attached, ensuring a centralised and targeted investigation.

Additionally, the study centered on the main libraries of all 10 technical universities in Ghana. This focused approach allowed for a comprehensive exploration of strategies to market electronic information resources and understand challenges faced by students.

Also, the research aimed to provide a comprehensive understanding of the challenges related to students' usage of e-resources. A survey of students and interviews with library professionals were conducted to explore current knowledge, usage patterns, and marketing strategies.

Furthermore, the study sought to explore factors influencing students' behavioral intentions regarding e-resource usage, evaluate the competencies of library professionals, and identify innovative strategies for optimal marketing.

Notwithstanding these restrictions and limitations, the study is nevertheless a useful investigation of the dynamics pertaining to the marketing and use of e-resources in Ghanaian technical university libraries.

1.12 Operational definition of terms and concepts

The purpose of this section is to provide a brief overview of the key concepts that are prominently used throughout this study. To guarantee that terms are precisely defined and understood in a particular context, operational definitions are essential in the research. An overview of the explanations of such important concepts is thus provided as follows:

1) **Marketing:** the activities and tactics used by the library to encourage student knowledge, accessibility, and use of available electronic library resources defines marketing in the

context of academic libraries. This library-centric viewpoint entails identifying the requirements and preferences of user groups, creating services and products to address those needs, and motivating users to make use of the resources that are accessible. Thus, building connections and bringing people to the library are essential components of successful marketing (Johnson, 2014, cited in Cheng, Lam, and Chiu, 2020:2).

    a) Essentially, marketing electronic library resources is the deliberate and methodical efforts of academic institutions or library administrators to publicise and increase knowledge of the features, accessibility, and advantages of digital resources and services provided by electronic libraries. The principal aim of this context is to augment the use of electronic library resources, namely among Ghanaian technical university students (Cheng et al., 2020).

2) **Use/Utilisation:** the use/utilisation of e-resources in the context of library usage refers to the effective and purposeful engagement of electronic resources within a library setting. Electronic resources, often referred to as e-resources, include digital materials such as e-books, online journals, databases, multimedia content, and other digital assets that libraries provide for the benefit of their users (Babalola, 2018. The concept of utilisation goes beyond mere access; it involves actively and meaningfully incorporating these electronic resources into the academic or research activities of library patrons. The extent to which students engage with and make effective use of electronic library resources. This encompasses activities such as reading, researching, downloading, and incorporating electronic resources into academic work (Ubogu, 2020; Babalola, 2018).

3) **Electronic Library Resources:** the phrase "electronic resources" describes digital or digitised assets that librarians have carefully selected, acquired, and are keeping up to date with the goal of providing easy access to them for library users (Ubogu, 2020). The ease of discovery and accessibility to these resources is crucial. Many formats are included in the category of electronic resources; these include e-books, e-journals, e-databases (full-text,

indexing, and abstracting), reference materials (biographies, dictionaries, directories, and encyclopaedias), numerical and statistical data, e-images, and e-audio/visual resources (Roman et al., 2020).

4) **Students:** persons studying undergraduate or graduate degrees at Ghana's technical universities. They are such persons who are actively involved in academic activities, whether full-time or part-time, are included in this phrase.

5) **Technical Universities:** Higher education establishments in Ghana that provide both undergraduate and graduate specialty courses in technical and applied sciences. This covers establishments that the appropriate educational authorities have formally recognised and designated as technical universities.

6) **Awareness:** the level of knowledge that students possess regarding the availability, characteristics, and advantages of electronic library resources. This includes being aware of the services and resources that are offered as well as how to use them.

7) **Accessibility:** operational Definition: The accessibility and usability of electronic library resources for students. This includes considering things like device accessibility, internet connectivity, user interfaces, and any other elements that affect one's capacity to consume digital content (Ubogu, J., 2020).

8) **Promotion:** coordinated initiatives by the library establishments to raise students' knowledge of and use of electronic library resources. Utilizing a variety of communication platforms, including social media, fliers, posters, and other promotional items, may be part of this (Ndungu, 2016).

9) **Students' Engagement:** the degree and frequency at which the library actively engages with students regarding their access and use of available electronic library resources. These

interactions may include digital content or material searches, browsing, reading, and downloading (Panneerdas Sasireka & Jaculine, 2022).

Clearly, these operational definitions should assist bring some of the key concepts in the thesis into clearer focus so that you, the reader, and researchers, understand how these terms are interpreted and applied in the context of this study.

1.13 Structure of the thesis

The entire study is structured around seven chapters:

Chapter One of the study comprises the background information, statement of the problem, objectives of the study, rationale of the study, importance /benefits of the study, delimitation of the research, limitations of the research, the research contributions, and organisation of the thesis.

Chapter Two of the study carefully constructed a robust theoretical framework that serves as the intellectual scaffold for our research endeavor. The intricate web of relationships between the study's objectives, research questions, and selected theories has been systematically laid out in a comprehensive table.

Chapter Three of the study captures a review of related literature. Previous studies on the marketing and promotion of library resources in general, and with a special focus on the marketing and promotion of e-resources in academic libraries were the principal focus of the literature review. It also constitutes an exposition of conceptual perspectives underpinning the study.

Chapter Four discusses the methodology that the study adopted. It includes a discussion of the research paradigm, research approach, research design, population, sampling and data collection instruments, the population of the study, data sources and sampling, data collection instruments, research methods, data collection and analysis procedures, and data collection and analysis.

Chapter Five comprises the data analysis and presentations of the findings of the research.

Chapter Six comprises a discussion of the research findings.

Chapter Seven captures the summary of findings, conclusions/implications, and recommendations of the research.

1.14 Summary of Chapter 1

This chapter has introduced the study and given its background in terms of its conceptual and contextual setting. Within this chapter, the background to the study, problem statement, research aims and objectives, research questions, justification, and significance of the study, theoretical, literature, and methodological overviews as well as the study's limitations and delimitations. Additionally, the definition of key terms and the structure of the thesis have been provided. The next chapter, which is Chapter 2, discusses the theoretical underpinnings and review concerning this study.

CHAPTER 2:

THEORETICAL FRAMEWORK

2.1 Introduction

The study's Chapter 2 explores the theoretical foundations guiding the research and offers a thorough analysis of the body of current literature, which acts as the study's intellectual anchor. This chapter is important because it provides the foundation for both navigating the theoretical waters that produce understanding and travelling through the knowledge currents set by earlier academics. This chapter serves as the cornerstone of the study, providing a solid foundation and ensuring its relevance to the field. By drawing on established theories and concepts, the research becomes well-grounded, enhancing its credibility and significance. Theoretical frameworks provide a lens through which the research questions are viewed, guiding the study's design, data collection, and analysis. By incorporating relevant theories, the study gains depth and context, contributing to a better understanding of the subject matter and its implications. Overall, the theoretical framework plays a crucial role in shaping the research's structure, methodology, and overall value to the field of study.

2.2 Rationale of the theoretical perspectives

According to Grant and Osanloo (2016:12), the theoretical framework plays a crucial role in the doctoral dissertation process. It serves as a guide, helping researchers determine what to examine and measure. Essentially, it represents the structure that underpins the research process, drawing upon formal theories and models (Grant & Osanloo, 2016:18). Creswell and Hirose (2019 :75) describes it as the lens through which the phenomenon under study is understood.The theoretical framework typically involves selecting formal theories or models that support, strengthen, or guide the research in understanding and investigating the research problem. It involves teasing out relevant concepts and definitions from the selected theories to address the research topic (Grant and Osanloo, 2016:18). A well-defined theoretical framework provides a structured foundation for

the study, encompassing philosophical, epistemological, methodological, and analytical aspects (Grant & Osanloo, 2014). Ravitch and Carl (2016) emphasise their role in situating and contextualising recognised theories within the research.

In this study, a theoretical triangulation approach is adopted (Moon, 2019; Noble & Heale, 2019). The strategy is designed to enhance the research process and outcomes by embracing diverse theoretical perspectives. Theoretical triangulation involves employing multiple theoretical perspectives or frameworks to investigate a phenomenon, recognising that the use of diverse theories can offer a more comprehensive understanding of complex research problems (Moon, 2019:103; Noble & Heale, 2019:67). For the theoretical framework and models, the study draws on several theories categorised into two groups: theories and models of innovation and technology adoption, and theories and models of human and consumer behaviour management. These theories and models are divided into two groups: theories and models of innovation and adoption of technology, and theories and models of human and consumer behaviour management. The innovation and technology adoption theories and models are diffusion of innovation adoption theory, technology acceptance models (TAM1, TAM2, and TAM3), and the unified theory of acceptance and use of technology (UTAUT). The human/consumer behaviour management theories and models include the Social Marketing Theory and the 7 Ps Marketing Mix Model.

These theories and models are selected based on their relevance to explaining the dynamics of marketing socially valuable information resources, such as libraries and their associated resources. Additionally, they shed light on students' acceptance of technology for accessing and optimising the use of e-resources in TU libraries. This comprehensive theoretical foundation aims to enrich the study's analytical depth and contribute to a nuanced understanding of the research problem.

In conclusion, the theoretical framework in this study plays a vital role in guiding the research process by triangulating relevant theories and models to address the research questions and align with the chosen methodology. By drawing on established theories, the study gains a strong

foundation, contributing to a comprehensive understanding of the subject matter and optimising the marketing of e-resources for student usage in TU libraries in Ghana.

2.3 The theoretical and practical relevance of the study

Researchers are sometimes interested in identifying why people accept innovation or a new technology so that the processes for designing, evaluating, and predicting users' reactions to new technology can be improved. Numerous researchers (Venkatesh, Morris, & Ackerman, 2000; Sullivan, 2012; Davis, 1989; Venkatesh, Thong, & Xu, 2012; Venkatesh & Davis, 2000; Gefen, Karahanna, & Straub, 2003; Lu, Yao, & Yu, 2005; Venkatesh & Davis, 2000; Wang et al., 2003) have in the past proposed models and theories for technology acceptance. These theories generally attempt to explain and predict the behaviours of technology adopters. User acceptance of technology has greatly influenced the rapid innovation and adoption of technology in the ICTs and the tremendous technological revolution that the world has witnessed thereafter over the last few decades (Ching-ter & Hajiyev (2017:128). The researcher of the present study is interested in studying the associated issues related to technology acceptance from student users' characteristics, such as their cognitive style and internal beliefs, and their impact on usage behaviour (Nwone & Mutula, 2019.). To understand and explain users' behaviours regarding their acceptance and adoption of new and emerging technology to access and use e-resources, the study adopted theories and models that reflect user innovation adoption theories and consumer behaviour theories. Understanding user acceptance and adoption of new technology is relevant in the library environment since most benefits associated with the user embracing the use of technologies will result in increased access to information (Obasuyi & Usifoh, 2013). Efforts made to attract students to embrace the usage of electronic information resources in libraries through marketing may yield no positive results if attention is not paid to the factors that influence students' acceptance and use of information communication technologies (ICTs). As tools that enhance access to information

resources, user behaviour concerning their acceptance and use of ICTs is a vital subject that attracts many researchers' attention.

In the field of information science, Ching-ter and Hajiyev (2017:128) observed that several researchers have shown a great desire to investigate, explain, and predict users' behaviours with respect to their acceptance of ICTs in the delivery of e-resources and other online services within the library environment as a means of pushing for improved access and use of information resources towards enhancing the dissemination of information and academic outputs. ICTs are perceived by many researchers to have the ability to facilitate academic interaction and produce higher academic outputs for universities' staff and students (Okyere-Kwakye & Ilona, 2020; Ani, 2013; Okyere-Kwakye & Nor, 2020; Venkatesh, Morris, & Ackerman, 2000). Venkatesh et al., (2000:34) observed substantial growth in investments by organisations in emerging information technologies (ITs) over the preceding decade, and such investments were made because of the need to increase the organization's output in terms of performance. However, Ani (2013) observed low investments in IT by libraries, which were perceived to have been occasioned by the issue of low user skills.

The theoretical relevance of this study is a focus on the adaptation of general innovation adoption theories and models as well as customer relationship management theories and models. The aim of adapting general customer relationship theories and models is to facilitate the explanation and understanding of marketing and communication strategies for nonprofit or noncommercial organisations such as the academic library to increase students' awareness of e-resources, leading to their optimal utilisation in TUs. On the other hand, a better understanding is achieved with the adaptation of user behaviour and the acceptance of technology theories and models since students' usage of electronic information resources (EIRs) in academic libraries will require the acceptance and application of technologies (ICTs). The practical relevance of the study is that the investigation leads to the discovery of marketing and communication strategies suitable for raising the needed

marketing campaigns to increase students' awareness of EIRs, leading to optimal utilisation of the resources available in the libraries of the TUs in Ghana.

The investigator meticulously crafted a strong theoretical framework in Chapter 2 of the study, which functions as the conceptual underpinning for the investigation. A thorough table 2.1 presents the methodical arrangement of the complex network of relationships between the research questions, objectives, and chosen theories of the study. This table not only shows how our research goals, and the theoretical foundations correspond, but it also gives an illustration of how various components are connected.

Table 2.1: A table showing the relationships between the study's objectives, research questions, and theories.

	The study's Objectives	Research questions	Selected theory/model
1	to explore contemporary and emerging marketing approaches for marketing e-resources in the TU libraries.	What factors contribute to students' low usage of e-resources in technical universities (TUs) in Ghana?	Social marketing theory, the 7Ps Marketing Mix Model, and diffusion innovation theory
2	to identify factors causing students' low usage of e-resources in technical universities (TUs) in Ghana.	What are the existing strategies employed by libraries for marketing e-resources to students at TUs in Ghana?	Technology acceptance models (TAM1, 2, and 3) and the unified theory of acceptance and use of technology (UTAUT)
3	to ascertain existing strategies libraries, use for marketing e-resources to students at TUs in Ghana.	What are the contemporary and emerging marketing approaches for marketing e-resources in TU libraries?	Social marketing theory (7Ps Marketing Mix)
4	to determine factors that influence the behavioural intentions of students towards using e-resources from the libraries.	What factors influence the behavioural intentions of students toward using e-resources from libraries?	Technology acceptance models (TAM1, 2, and 3), the unified theory of acceptance and use of technology (UTAUT), and diffusion innovation theory
5	to determine the competencies of the library professionals towards marketing e-resources to students in TU libraries.	What are the competencies required of library professionals regarding marketing e-resources to students in TU libraries?	Technology acceptance models (TAM1, 2, and 3) and the unified theory of acceptance and use of technology (UTAUT)
6	to propose innovative marketing measures to influence optimal students' usage of e-resources in the TUs' libraries.	What innovative marketing measures are proposed to influence optimal students' usage of e-resources in TU libraries?	Social marketing theory, the 7Ps Marketing Mix model, technology acceptance models (TAM1, 2, and 3), the unified theory of acceptance and use of technology (UTAUT), and diffusion of innovation theory

2.4 Theories/models of innovation adoption

Many innovations continue to emerge on the world stage in every facet of life. Some of the innovations have become relevant and have answered the needs of selected groups of people but are unknown to individuals outside of those user groups. However, some of these innovations, such as the internet, have witnessed global acceptance and patronage, and thus their impact has become part of everyday life. Many more innovations have emerged with the invention of the internet, some of which include electronic information resources (EIRs). However, due to innovative changes in the way traditional printed library resources are accessed differently than e-resources, these information resources intended for learners and researchers never received the necessary utilisation in some libraries. The way society functions in terms of innovation adoption have been the subject of research and analysis, with experts drawing different models and developing overlapping theories as to the cause of the successful diffusion of innovations.

The modern information landscape is characterised by a constant interaction between the need for seamless integration and technological improvements. According to Wibowo (2019:3674), the influx of cutting-edge technologies with potential applications in information institutions is what is driving the growing interest in the study of technology implementation, acceptability, and adoption. Within this framework, acceptance models and theories become essential instruments in the field of information science, offering a prism through which the potential and difficulties associated with incorporating new technology into information systems may be fully comprehended.

By highlighting the critical role that digital skills play in accessing and administering electronic library infrastructures and services, Hamad, Al-Fadel, and Fakhouri (2021:589) add to this conversation. Their study particularly 25ealizatio how vital it is to assess librarians' expertise with digital skills in Jordanian university libraries. A further layer of complexity to the larger conversation on the human aspect of technology integration in library settings comes from the

investigation of the complex relationship between digital skills and technology adoption among librarians.

Shah, Naeem, Bhatti, and Soroya (2023) expand on these observations by highlighting the revolutionary potential present in modern computer systems. Their claim that these systems have developed over time to gather, handle, and evaluate enormous datasets creates new possibilities for comprehending and affecting human behaviour. In particular, the 26ealization that human behaviour and computer system adoption/utilization are mutually reinforcing highlights the necessity of conducting a comprehensive analysis of the socio-technical ecology inside information institutions. Settings.

In light of the foregoing discussion, innovation adoption theories and consumer behaviour theories serve as the theoretical cornerstones around which this study bases its theoretical importance. In order to explain students' technology acceptance and consumer behaviour toward the acceptance of a new product, the study thus highlights the key ideas of two innovation adoption theories: the Unified Theory of Technology Acceptance and Use of Technology and Technology Acceptance Models. Other models of consumer behaviour include Social Marketing Theory and the 7 Ps Marketing Mix Model.

2.4.1 Technology acceptance model (TAM)

The Technology Acceptance Model (TAM) holds a prominent position in this study and has undergone various revisions and expansions since its inception in 1989 by Davis and Bagozzi (Bagozzi, Davis, & Warshaw, 1992). TAM, TAM2, TAM3, and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) are adopted to understand the behaviour of students and library staff regarding their acceptance and use of technology to access EIRs in libraries. TAM is an adaptation of the Theory of Reasoned Action (TRA), specifically designed to model user acceptance of information systems. It emphasises two main factors, perceived

usefulness (PU) and perceived ease of use (PEOU), which influence attitudes toward new technology. Perceived usefulness directly influences behavioural intention when the technology is seen as valuable and effortless to use (Okyere-Kwakye & Ilona, 2020:273).

TAM and UTAUT are widely regarded as valuable theories for explaining and predicting user behaviour in response to technological advancements (Okyere-Kwakye & Ilona, 2020:273). Davis (1989) acknowledged that several psychological factors influence technology acceptance. Under the inspiration of TRA, Davis (1989) developed and validated the TAM model to measure, predict, and explain technology adoption and use. Over the years, TAM has seen several reviews and expansions, including TAM2, TAM3, and UTAUT (Venkatesh, 2000; Venkatesh & Davis, 2000; Venkatesh & Bala, 2008). Despite its effectiveness, the traditional TAM model has some limitations, such as its exclusion of the subjective norm from TRA as a factor determining behavioral intent (Sullivan, 2012). However, researchers have conducted empirical testing on TAM and found it to be statistically reliable (Sullivan, 2012; Venkatesh et al., 2003). Overall, TAM remains a valuable theoretical model for predicting user acceptance of new technology in the information science and information systems implementation arena. Figure 2.1 represents Davis et al.'s (1989) Technology Acceptance Model (TAM).
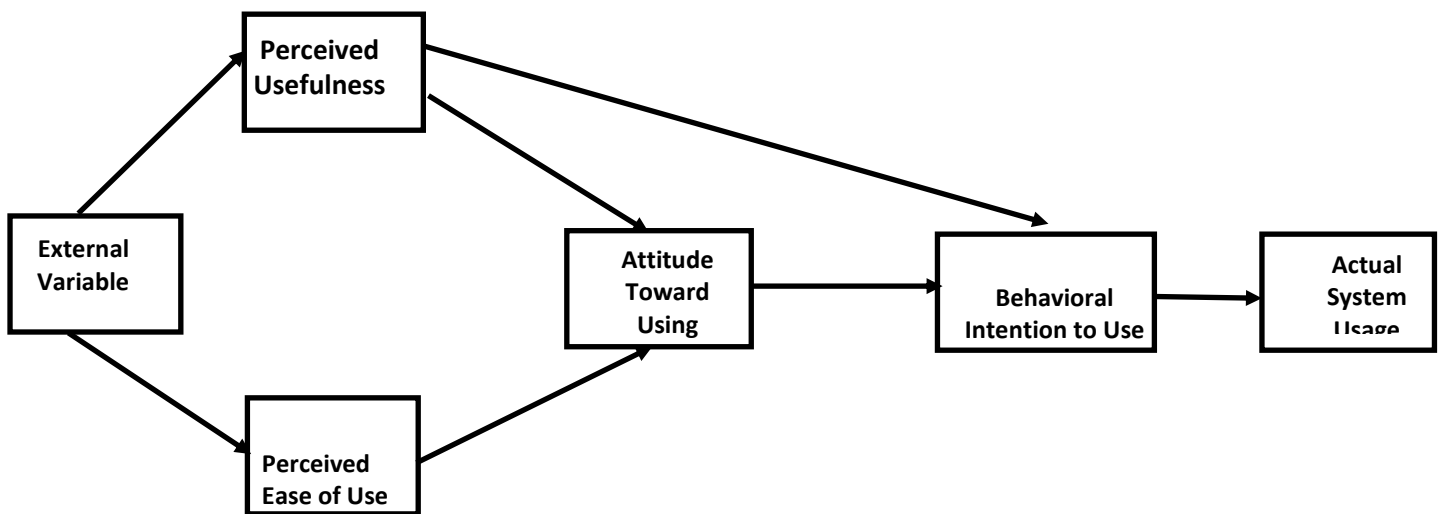
Source: Davis et al. (1989: 985)

Figure 2.1: Technology acceptance model (TAM)

Figure 2.1 presents a visual representation of TAM, which proposes that an individual's intention to accept and use a new technology is influenced by two key factors: perceived usefulness (PU) and perceived ease of use (PEOU). The model suggests that the individual's intention to use the new system acts as a mediator for actual system usage. Additionally, perceived ease of use can directly influence the perceived usefulness or efficacy of the new system. Using TAM, the interconnection between the main constructs (PU and PEOU) and users' attitudes, intentions, and actual technology usage behaviour is specified. In summary, the model indicates that the combination of attitude and perceived usefulness plays a pivotal role in determining behavioural intention. Attitude, in turn, is influenced by both perceived usefulness and perceived ease of use. In this way, TAM provides valuable insights into understanding users' acceptance and utilisation of new technologies.

2.4.2 Technology Acceptance Model 2 (TAM2)

Expanding on the original TAM developed by Davis et al. (1989), TAM2 intends to solve the identified shortcomings and offer a more thorough understanding of user acceptability and usage intentions. Because user intents determine perceived usefulness in TAM2, it is critical to investigate the components impacting perceived usefulness and how they evolve with increased user experience (Venkatesh & Davis, 2000). The TAM2 model is expanded by adding further factors, such as cognitive instrumental processes (job relevance, output quality, result demonstration, and perceived ease of use) and social influence processes (subjective norm, voluntariness, and image safeguarding) (Kriponanat, 2007). Venkatesh and Davis (2000) assert that these elements have a big impact on user acceptability.

In TAM2, the subjective norm has a favourable impact on participants' perceptions of themselves when working in a group to complete a task, which increases their enthusiasm for utilising the system. But as user experience increases over time—especially in circumstances where use is required—the impact of the subjective norm on intentions diminishes (Sullivan, 2012).

The interplay of these factors in TAM2 influencing user intentions and acceptance of the technology over time is illustrated in Figure 2.2.
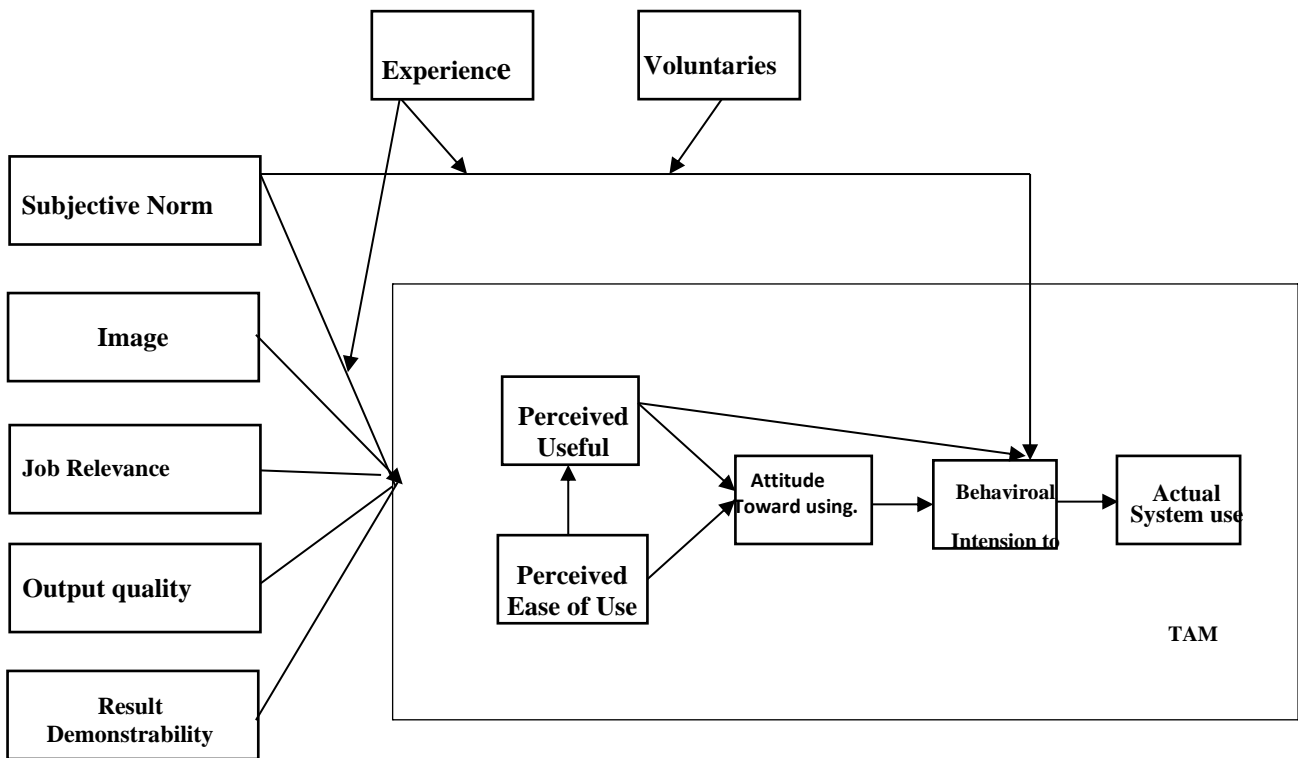
Figure 2.2: Technology Acceptance Model 2

The TAM2 model explains that perceived usefulness (PU) is influenced by job relevance, output quality, result demonstration, and perceived ease of use. Job relevance refers to how well an information system supports job performance; output quality is how efficiently tasks are completed; result demonstration is how the system demonstrates positive outcomes; and perceived ease of use is how user-friendliness is perceived. These cognitive-instrumental processes positively impact PU and intention to use an information system, predicting technology acceptance and usage.

2.4.3 Technology acceptance model 3 (TAM3)

The Technology Acceptance Model 3 (TAM3) is an integrated model that addresses the limitations of TAM and TAM2 by incorporating additional factors that influence perceived ease of use (PEOU) and perceived usefulness (PU) (Sullivan, 2012; Venkatesh & Davis, 2000; Bagozzi, 2007). TAM3 was developed by merging TAM2 and Venkatesh's model for determinants of PEOU (Venkatesh & Bala, 2008). TAM3 includes four main constructs: user experience, characteristics of the system, social influence, and conditions determined by perceived usefulness and perceived ease of use (Venkatesh & Bala, 2008). The determinants of PEOU in TAM3 include variables such

as computer self-efficacy, perceptions of external control, anxiety, playfulness of the system, perceived pleasure, and objective usability of the system (Jeffery, 2015:7). Also, the determinants of perceived usefulness in TAM3 include factors like image, subjective norm, job relevance, performance quality, and demonstrability of results. Additionally, experience and willingness act as modifiers of behavioural intention (Lai, 2017:28). To test TAM3 in IT implementation, Lai (2017:28) found that experiences moderate the relationship between PEOU and PU, technology anxiety and perceived ease of use, and perceived ease of use and behavioural intent. TAM3 offers a comprehensive and integrated model that accounts for a wider range of factors influencing technology acceptance. It provides a more robust framework for understanding user behaviour and accepting new information systems. Figure 2.3 illustrates the components of TAM3 (Venkatesh & Bala, 2008).
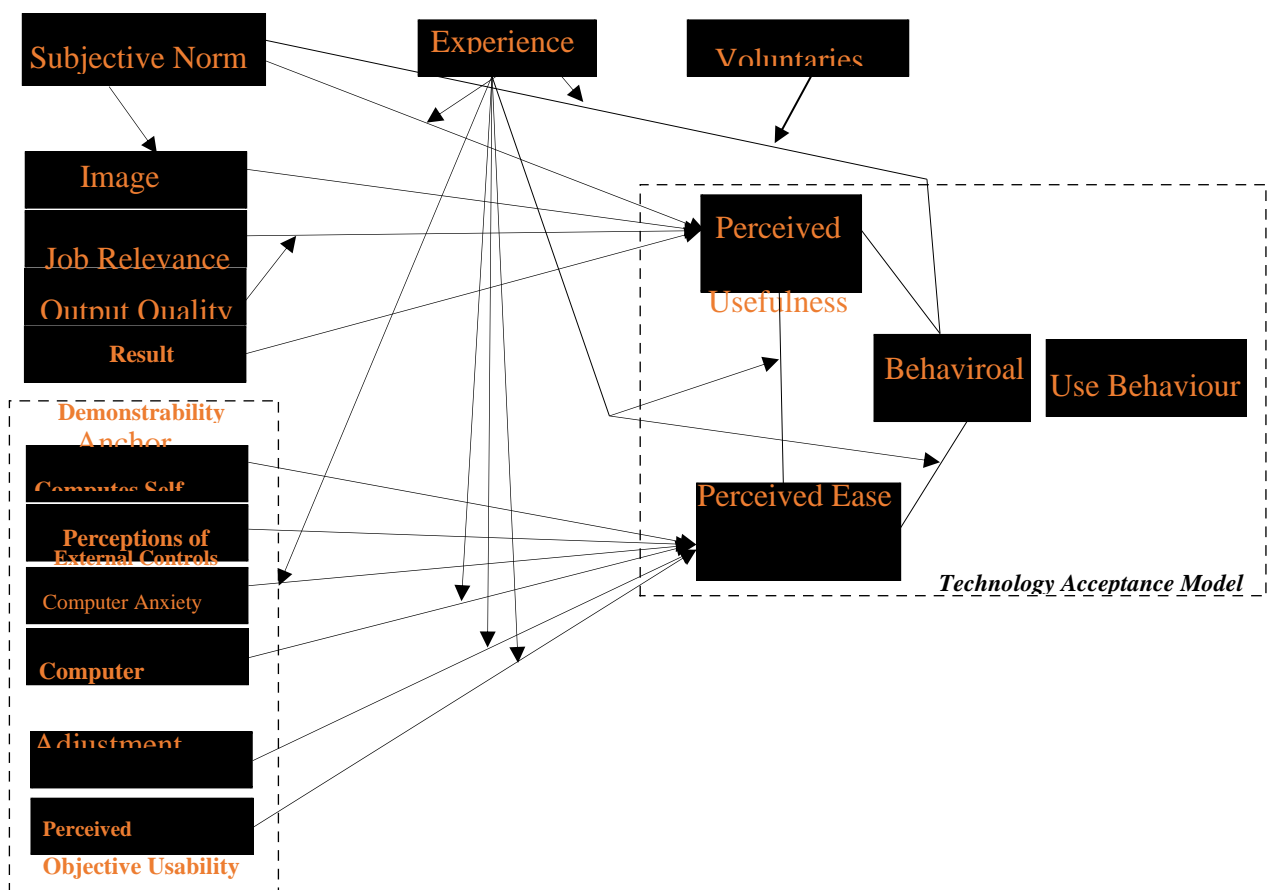
Figure 2.3: Technology Acceptance Model 3(Venkatesh & Bala 2008)
2.4.4 The unified theory of acceptance and use of technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh, Davis, and Davis (2003) is a comprehensive technology acceptance framework that aims to

consolidate and provide a unified view of user technology acceptance and usage. UTAUT seeks to explain users' intentions to use an information system and their subsequent behavior in relation to technology adoption. Four main concepts—performance expectancy, effort expectancy, social influence, and facilitating conditions—are at the centre of the theory. Performance expectancy, effort expectancy, social influence, and facilitating conditions are the four main concepts that centre the theory. Performance expectancy, similar to perceived usefulness in TAM, describes how much a person believes that utilising new technology would enhance their ability to perform at work. In contrast, effort expectancy gauges the user's opinion of how simple the system is to use. Social influence examines how important people in a user's surroundings, including arbitrary TAM standards, might affect their adoption and usage of a technology. The positive views that users have of aspects that enable efficient use of the system, like infrastructure availability and organisational preparedness, are referred to as facilitating conditions.

In addition, UTAUT incorporates moderators that affect how the main determinants affect user behaviour and intention, such as age, gender, experience, and willingness to use. These moderators contribute to our understanding of how user behaviour and acceptability evolve over time. Numerous fields, including information technology, education, finance, telecommunications, and healthcare, have adopted and used the paradigm. By fusing ideas from earlier models into a cohesive framework, it provides a clearer understanding of user behaviour and technology acceptance. The elements of The Unified Theory of Acceptance and Use of Technology (UTAUT) are depicted in Figure 2.4.
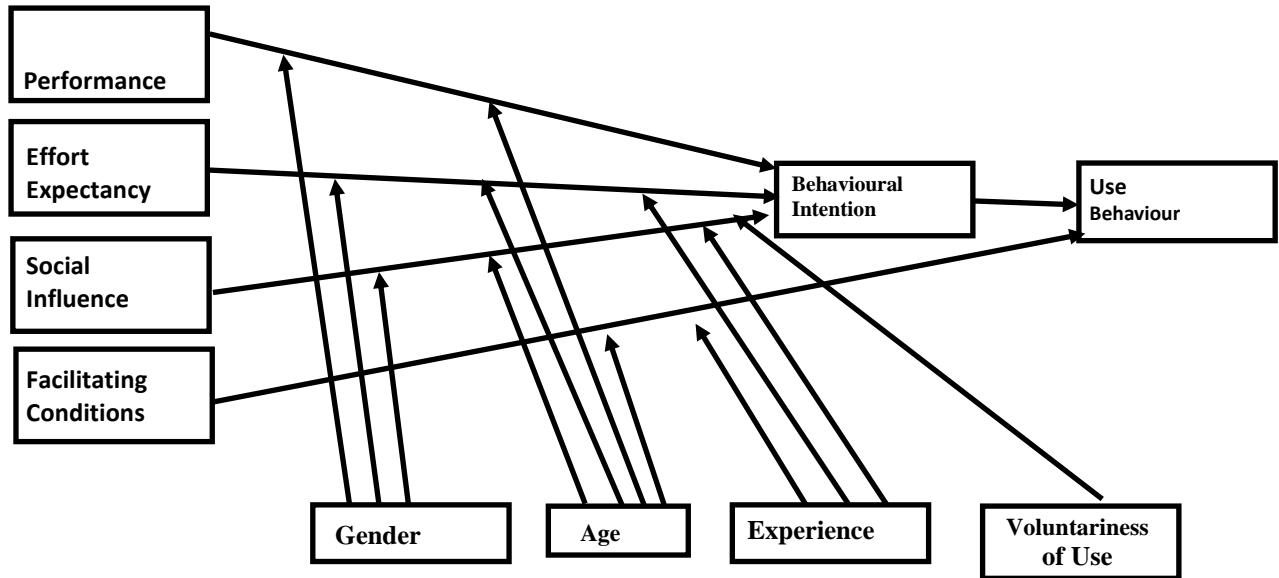
Figure 2.4: The Unified Theory of Acceptance and Use of Technology (UTAUT)

As illustrated in Figure 2.4 presents The Unified Theory of Acceptance and Use of Technology (UTAUT) and its key components, illustrating its role in understanding user behavior and attitudes toward technology acceptance. As researchers continue to explore its applications and potential, UTAUT remains a valuable framework for studying technology adoption.

The Unified Theory of Acceptance and Use of Technology (UTAUT), proposed by Venkatesh, Davis, and Davis (2003), provides a comprehensive and unified view of user technology acceptance and usage. It simplifies the key constructs as follows:

1) Performance Expectancy: This refers to the level at which an individual user perceives how helpful the new technology will be in improving their work performance. It aligns with the concept of perceived usefulness in TAM.

2) Effort Expectancy: This measures the user's perception of how easy or difficult the system is to use.

3) Social Influence: Users' acceptance and use of a system are influenced by significant others in their environment, such as colleagues or important individuals. This construct includes elements of subjective norms from TAM.

4) Facilitating Conditions: This construct involves users' positive perceptions of conditions that support effective use of the system, including organizational readiness and adequate infrastructure.

While UTAUT provides a robust theoretical model for understanding technology acceptance, it does have some limitations. One notable limitation is the absence of task-technology fit (TTF) constructs. Users often want to know if a technology aligns well with the requirements of their tasks. To address this limitation, Sullivan (2012) added the TTF construct to UTAUT, leading to the creation of a new model that combines both TTF and UTAUT elements.

The strengths of UTAUT lie in its explicit explanation of user behavior, its integration of concepts from various previous models, and its empirical validation using data from different industries. It continues to be tested and validated in diverse areas, providing valuable insights into technology acceptance and usage. Despite its strengths, UTAUT has some limitations, such as the absence of task-technology fit (TTF) constructs. TTF considers whether the technology meets the specific requirements of users' tasks. Sullivan (2012) addressed this limitation by adding the TTF construct to UTAUT, leading to the creation of a new model that combines TTF and UTAUT.

2.5 Consumer behavior management theories

Consumer behaviour is a subset of general human behaviour, and to understand the behaviour of consumers requires an appreciable level of knowledge of the meaning of human behaviour in general (Walters, 1974:7). Human behaviour comprises all that constitutes human thought and feelings that motivate an individual's sensations, leading to the making of decisions daily (Chiiru, 2017). Per the reasoning of Chiru (2017:2), there is a direct connection between human behaviour and consumer behaviour. Consumer behaviour is the study of how humans behave, while consumer behaviour has to do with how humans behave as consumers of an idea, service, or tangible product (Chiru, 2017:2). Consumer behaviour, according to Chiru (2017:2), is the study of individuals, groups, or organizations, including the processes used to select, use, and dispose of products,

service experiences, or ideas to satisfy human needs. Improving the marketing strategies of organisations requires some knowledge of consumer behaviour to help understand how the consumer thinks and feels concerning the different brands of products and services. The study of consumer behaviour will help marketers understand how the consumer is influenced by factors such as culture, media, and family, and how the marketer can adapt and improve their marketing strategies and campaigns (Assael, 1995: 3).

The study's goal was to market e-resources for optimal use by students in Ghanaian TUs. To achieve an understanding of the direction of the study, it was relevant to adapt theories and models that demonstrate customer relationship management to reflect the transactional relationship that ought to occur between library professionals and students during the process of marketing e-resources to students. To provide a clearer understanding of consumer behaviour, three theories or models are discussed to provide a perspective on the influence of needs and motivation on consumer behaviour. The consumer behaviour management theories under consideration in this study are the social marketing theory and the 7 Ps model of marketing mix.

2.5.1 Social marketing theory

Kotler and Zaltman became the first researchers to offer a definition of the concept of social marketing. In their effort, Kotler and Zaltman (1971) opined that the concept of social marketing represents that process that sees the marketer design, implement, and control calculated activities aimed at influencing people's behaviour into accepting some social ideas, such as product planning, pricing, communicating distribution, and conducting marketing research. But in expanding the scope of the definition, Kotler (1975) included some more details about the strategies involved in social marketing. For Andreasan (1997), social marketing is the application of technologies in the marketing communication process to analyze, plan, execute, and evaluate programmes designed in a way to influence the behaviour of the target audience such that personal welfare and that of other members of society are improved. Like commercial marketing, social

marketing also aims to influence consumer acceptance and patronage behaviour of a product, service, or idea.

Social marketing theory is thus a mother theory that represents a collection of theories that focus on how socially valuable information should be promoted using marketing communication campaigns. There is some information that might be of mutual benefit to society, but it lacks the awareness and education of citizens as to how to access and benefit from it. Devoid of commercial and profit-motivated messages that are churned out during conventional marketing campaigns to the target audience, the main principle of social marketing is to identify and serve the target audience based on their social and information needs. Information is thus collected, processed, organized, and distributed to the target population using various marketing communication channels and campaigns. In social marketing, making the information accessible at the lowest possible cost to the user is the focus.

The theory seeks to develop an understanding of how psychological and societal factors interact to influence the behaviour of the targeted audience when using mass media for effective information campaigns. The theory seeks to identify psychological and social barriers that infringe on the smooth flow of information via the mass media and propose strategies and ideas on ways to overcome such barriers. These strategies range from conventional to contemporary marketing and promotional ideas. However, there are some fundamental elements of social marketing theory that a library must employ to market its information products, services, ideas, and so on to influence social behaviour and attitudes in the academic community toward mutual social benefit or welfare.

1) **Create audience awareness.**

If an organisation such as the library wishes to promote new and unfamiliar resources and services, introduce new ideas to users, especially students, or influence user behaviour towards a certain formation need, the information professionals in the organisation first need to engage in an awareness-creation programme. As one may notice, user awareness

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creation could be attained using such available channels as the mass media and new media such as the internet and its available digital and online channels. Notably, an easy way to create awareness includes saturated television campaigns. The limitation, however, is the cost of such a platform. As a prime advantage, using newer media has the benefit of reaching out to a wider range of audiences. Running promotional campaigns via the new media (the internet), other than traditional mass media, also has its advantages, including giving the library the added advantage of reaching out to a large portion of the youth population, such as students.

2) Right audience Targeted.

When an information professional seeks to disseminate pieces of information, the target audience whose information needs are being provided must be appropriately identified and defined with the message, and efficient means of reaching them must be duly considered. The right targeting of the audience will lead to budget cuts and ensure higher audience penetration. For instance, if the message is targeted at a young audience, spreading information via the internet will be prudent since they are more exposed to the digital space. However, because most elderly people are not comfortable using computers, they may not seek information via the internet. Therefore, a more effective way of reaching such a bracket of the older audience will be using radio and television to get the message across to the target audience.

3) Reinforcing the message

Because the target audience, such as students, will receive messages and easily forget them, there is a need for the marketer to reinforce the message through repeated resending of the same message to the audience on every available and affordable channel. This will ensure that the message is spread across various channels to reach the target audience. To reinforce the message of promoting the use of information resources, the library may also adopt

various mass media platforms, including bringing students together to hold group discussions, organising debates for students on the local campus radio station, mounting and erecting banners on campus at vantage locations, moving from a hall of residence to another and room to room, etc., to reinforce the message. When the message is repeatedly echoed to students, they will eventually accept it and become agents for spreading the message they have received to others.

4) **Images and Impressions Creation**

To create relevant images and impressions, the marketer must understand how to use image advertising and impression creation strategies in situations where the audience being targeted by a promotional campaign is uninterested in the message, the person, product, or service being promoted. In such marketing strategies, an image of the new product or service that is easy to recognise and understand is shown to the audience. This will help the marketer create a favourable environment for promoting the new product. For example, watching participants of an old school reunion programme reminisce about the usage of the school's library while exhibiting some reading skills from their college days might just be one of the strategies that could be used to attach happy emotions to library resources.

5) **Stimulate Interest**

To pique the users' interest and entice them to seek information, librarians must create innovative and creative messages that capture their attention and increase their interest. The message or information in this regard should be easily accessible to the user population. The information professional can consider using unexpected actions and dramatic events as some of the strategies to easily capture the attention of the users of information resources.

6) **Induce the Desired Result**

Inducing the desired result in customers means that once information has reached the intended audience, efforts should be made to ensure that the desired decision is reached. A

campaign to encourage students to embrace electronic resource access and use should result in students using the resources. A new online journal or database being introduced should result in students and other information seekers using these online resources.

2.5.2 The 7 Ps marketing mix model

The idea of the 7 Ps Marketing Mix Model was an extension of what was initially conceived and put together as the 4 Ps Marketing Mix by Edmund Jerome McCarthy in 1960 (McCarthy, 1960). Bitner and Broom (1981) recognise that McCarthy's (1960) previously hypothesised 4Ps marketing mix represents product, place, price, and promotion as its core elements. The marketing mixes that Nesrin, Altin, and Pirnar (2022:278) present represent a combination of several controllable variables in marketing that are used to achieve the firm's objectives in the market. While MacCarthy's (1960) 4Ps model represents product, place, price, and promotion as its core elements, Bitner and Broom (1981) felt the need to extend the core elements of the marketing mix to include three extra Ps to form what is now referred to as the 7Ps.

Since the conception of the 4 Ps, various writers have criticised them as having shortfalls. several researchers (Kassab, 2023:5; Smith, 2018; Saini, 2022), it has been variously critiqued as not being complete since it does not consider some customer needs. The 4PS has been critiqued on the grounds that it did not consider customer needs, and non-profit institutions, like their commercial counterparts, also seek to satisfy their clientele. Kassab (2023:5) in A Comprehensive Analysis of 4Ps, in which the study examines Emerging Trends in Marketing Strategy: On this basis, the model has been deemed incomplete and, therefore, needs adjustment.

Services, as Zeithaml, Bitner, and Gremler (2013:3) and Kotler and Zaltman (1971) describe them, are those deeds, procedures, acts, and offerings an establishment or firm provides to its targeted audience. The performance of duties to customers or any other persons in need of such duties is service, which Zeithaml et al. (2013) described as intangible and typically occurs during

interactions between the customers and the employees of a firm meant to provide solutions to the customer's needs and wants.

The expansion saw the popular McCarthy's (1960) 4 Ps extended by three additional Ps (i.e., physical evidence, people, and process). Providing electronic resources to users is considered a provision of service since e-resources are intangible commodities. Both Lahtinen, Dietrich, and Rundle-Thiele (2020:357) and Zulkifli (2022) have demonstrated that all the 7Ps are relevant to all types of marketing, including service marketing. Furthermore, the Reddy, Ghouse, and Kumar (2023) study finds the 7Ps (i.e., product, price, place, promotion, people, process, and physical evidence) marketing mix model an instrumental framework for studies in the service sector. Given this, the 7Ps have over the years been applied as a useful framework to guide several studies (Lahtinen et al., 2020:354; Patil & Pradhan, 2014), having marketing connotations within the library and information science disciplines.

The variables of the 7 Ps Marketing Mix Model are depicted in Figure 2.5 below.

Figure 2.5:7Ps Marketing Mix
Source: Devereux (2014)

2.5.2.1 The marketing mix variables

The marketing mix variables are the factors that marketing managers can control to create and maintain products and services that best satisfy customers in the target market. Application of the 7Ps marketing mix to the promotion of library services and resources is shown in Table 2.2.

Table 2.2: Application of the 7Ps marketing mix to the promotion of library services and resources

Components of the 7Ps Marketing Mix Model		Strategies aimed to improve the marketing of e-resources by academic libraries.
1	**Product (E-Resources and Services)**	This component focuses on the development and curation of high-quality e-resources that align with students' academic requirements and interests. Additionally, it involves enhancing the library's services to ensure seamless access to e-resources, technical support, and personalized assistance (Patil & Pradhan).
2	**Price (Perceived Value)**	The framework emphasizes communicating the value of e-resources to students, highlighting how these resources contribute to their academic success, research endeavors, and overall learning experience. Students must perceive e-resources as valuable investments in their educational journey (Lahtinen et al., 2020:354; Patil & Pradhan, 2014).
3	**Place (Accessibility and Availability)**	Ensuring easy access to e-resources is essential in the framework. This involves optimizing the library's digital infrastructure, providing remote access options, and integrating e-resources into the learning management system to facilitate seamless utilization (Kim and Park, 2006:4).
4	**Promotion (Awareness and Engagement)**	Promotional activities will focus on creating awareness about the diverse range of e-resources available, along with their benefits. Interactive campaigns, workshops, and social media engagement will be used to foster interest and active engagement among students (Ghouse & Kumar, 2023).
5	**People (Library Staff and Student Ambassadors)**	Library staff and student ambassadors will play a pivotal role in promoting e-resources and providing personalized guidance to students. Training programs will be implemented to equip library staff and ambassadors with effective communication and support skills (Patil & Pradhan, 2014).
6	**Process (User Journey)**	The user journey will be streamlined to ensure a smooth and efficient experience when accessing e-resources. This involves improving the user interface, optimizing search functionalities, and reducing barriers that might hinder students from using e-resources effectively (Devereux, 2014).
7	**Physical Evidence (Learning Spaces)**	Physical learning spaces will be integrated with e-resource marketing efforts to provide a holistic learning environment. Displaying e-resource information, testimonials, and success stories will reinforce the importance of utilising these resources (Zeithaml et al., 2013).

Sources: Field work, 2022.

Adopting marketing techniques among libraries globally has, no doubt, become very critical in recent times because of the need for libraries to improve user patronage and increase utilisation of

their resources to justify their budgetary allocations. The 7 Ps Marketing Mix model was chosen to guide the current study since it is an influential model that brings out several relevant aspects of marketing that could be attributable to the library environment. The models seem to bring out most of the important aspects of daily library operations in providing information resources to users. Paying attention to the "product variable" means that library professionals are made aware that the information resources within their libraries are products that they need to market to attract users. There is also the need to raise the consciousness of library staff to understand that there is a need to use the "promotion variable" to influence current and potential users to accept and patronise the service on offer. Making promotional strategies known to library professionals means that they will employ the best communication channels to communicate with their clientele. Also, influencing users' decisions to patronise products and services requires a good appreciation of the role of the other variables (people, process, and physical evidence). Library professionals need to get trained in marketing skills. The processes that go on behind the scenes leading to the provision of information resources and services within the library need proper design and planning. The user environment also needs that professional touch to provide a desirable user experience to attract users to the library. Good knowledge of the 7Ps will no doubt help library staff beef up quality in service provision to attract and retain library users.

In summation, the theoretical review accentuates the critical role of acceptance of technology models, digital skills assessment, and an understanding of human behavior in shaping the trajectory of technology implementation in academic libraries. The intersection of these themes provides a comprehensive foundation for probing the nuanced dynamics that govern the assimilation of new technologies in academic library environments.

2.6 Summary of Chapter 2

The study's second chapter explores the theoretical foundations that direct the investigation. The theoretical foundations of the study are rooted in two categories of theories and models: innovation

adoption theories and models and human and consumer behaviour management theories and models. These theoretical underpinnings provide a clear and focused understanding of the user's acceptance and use of library resources in the electronic environment. Consequently, a conceptual framework emerges from the literature review and theoretical considerations, offering a novel approach to conceptualising user behaviour towards library resources in the digital realm. This chapter is crucial because it establishes the framework for navigating the theoretical terrain and analyses the intellectual currents established by previous researchers in a critical manner. With its thorough examination of the theoretical terrain, Chapter 2 provides an essential basis for the study. It adds to the greater corpus of knowledge in the topic in addition to creating the theoretical framework that guides the inquiry. The chapter provides a conceptual framework that underpins the study questions and hypotheses by summarising and examining earlier theories. By purposefully building a strong foundation, the study hopes to direct future research, advances knowledge of how to market socially valuable information resources—like the e-resources found in libraries—and increase students' acceptance of technology, which will facilitate the best possible use of e-resources in TU libraries. Chapter 3, which comes next, conducts a comprehensive review of the existing literature.

<div align="center">

CHAPTER 3:

LITERATURE REVIEW

</div>

3.1 Introduction

An essential component of research is a literature review, which gives researchers an overview of earlier studies conducted in the field (Ammirato et al., 2020:9575). Beyond mere familiarity, a literature review allows researchers to assess, consider, and incorporate other people's points of view into their own work (Gastel, 2012). An early literature review, according to Moyo (2017: 25), helps researchers by giving them a clear perspective, direction, and focal point for their thinking— especially when confronted with conflicting views. A literature review is essentially, an assessment process that helps to identify gaps in current knowledge and add fresh ideas (Ammirato et al., 2020:9575).

The researcher narrows the scope of the existing body of knowledge about marketing from a larger viewpoint to marketing strategies related to LIS and the use of e-resources by students in this chapter 3. This evaluation of the literature fills in knowledge gaps and lays the groundwork for the contributions this study will make to the field by combining the best findings from earlier studies.

Many studies have been conducted all over the world on the underutilization of e-resources by students and the necessity of using efficient marketing techniques in the educational setting. Several scholars have investigated these subjects, using a range of research techniques and approaches that are dictated by different goals and study environments. With a particular focus on students' restricted usage of e-resources and tactics for marketing these resources in academic environments, this chapter provides a thorough overview of previously published literature. The review gives readers a contextual knowledge in line with the goals of the study.

The following major issues serve as the framework for this study's literature review:

1) Causes of students' low usage of e-resources from academic libraries.

2) Conventional strategies of marketing library resources in academic libraries

3) contemporary and emerging approaches for marketing e-resources in libraries to students

4) Behavioural intentions of students to use e-resources from academic libraries.

5) competencies of library professionals towards marketing e-resources to students.

6) innovative measures to market e-resources to influence students' optimal usage.

By exploring these themes, the literature review aims to provide a comprehensive understanding of the current state of knowledge in the field and set the stage for the subsequent research chapters.

3.2 Causes of students' low usage of e-resources in academic libraries.

Several factors may have caused the phenomenon of low student utilisation of e-resources in academic institutions. Several studies have been conducted to identify factors that influence the extent to which students use e-resources in libraries (Osinulu, 2020; Ternenge & Kashimana, 2019).

Reports from some past studies (Dukper et al. 2018; Yebowaah 2017; Ankrah & Atuase, 2018) have described low usage of e-resources in Ghanaian tertiary institutions and have attributed the phenomenon to several causes, including low user awareness, inadequate ICT infrastructure, poor library automation systems, poor searching skills, unreliable internet connectivity, low publicity, inadequate training, and restrictions on access, among others and in some cases, lack of availability of the resources. Even though students were aware of the availability of the electronic databases at the at the Sam Jonah library at the university of cape coast, Ankrah and Atuase (2018:1) study found that utilisation of e-resources was considered low since most students preferred to access resources from Google and other open access resource from unverified websites. In a related study,

Yebowaah (2017) found that the university had heavily invested in online database subscriptions, a total of 67.5% of students did not use the e-resources despite being aware of their existence, and most resources were significantly underutilized.

Frempong-Kore and Ameyaw's (2023) study, which is similar, examines how faculty members at the Ghana Communication Technology University Library use electronic databases, or e-databases (GCTUL). Issues including trouble downloading files and inadequate internet access were noted in the study. The study suggested that library management take immediate action to solve the issues that patrons were facing considering these findings. The findings highlight how crucial it is to solve problems with database accessibility and internet connectivity to improve the entire user experience, making them useful for stakeholders and policymakers in academic libraries, both public and private.

In similar studies, numerous writers (Ternenge & Kashimana, 2019; Mani, Shahul & Thirumag, 2019; Osinulu, 2020; Mboni & Msonde, 2021) across Africa have equally reported on the issue of low usage and have primarilly attributed the causes to similar factors identified in Ghana. Some factors, according to the literature, that cause low usage of electronic resources are discussed further below.

Several of such studies found major obstacles in their examination of the factors that contribute to students' limited access and low usage of e-resources. An investigation of this kind was carried out by Joshua and King (2020:47), and it was centred on how the Ibrahim Babangida Library at Modibbo Adama University of Technology (MAUTech) in Yola was used. Considering that scholars and students are the main consumers of library resources, this study carefully looked at how they felt about using e-resources. Some of the research's main conclusions focused on problems including students' and professors' limited access to the Internet and the absence of awareness and training programmes. According to the findings, professors at MAUTech in Yola were able to do study and teach without much disruption from e-resources. This study emphasises

how critical it is to deal with Internet access, training, and awareness campaigns to improve the way that academics and students use e-resources. It also highlights the necessity of specialised approaches to get above the obstacles found and optimise the influence of electronic resources on scholarly research and instruction in educational establishments.

Furthermore, despite the cutting-edge techniques used in Western nations, Eze, Chinedu-Eze, and Bello's (2018:1) study emphasises the survival of traditional teaching and evaluation practises in Nigerian higher institutions. The results show that issues that have been found to affect successful adoption of e-resources include user attitudes, limited internet facilities, and poor training. To stay up with innovations, the study suggests that e-learning facilities be upgraded continuously and that staff members receive regular training. According to the study, doing this will help M-University make the most of its e-learning resources. The goal of Chandra and Anupan's (2021) study was to investigate college students' awareness of, and usage habits toward, electronic resource use. The study evaluated students' satisfaction levels and examined the difficulties they encountered when utilising internet resources.

The study's conclusions highlight the value of electronic resources in higher education and highlight how crucial they are becoming to efficient teaching and research. Even while college students are using e-resources more frequently, the survey raised concerns about authenticity. A possible problem with the reliability of the e-resources students come across is highlighted by the fact that many of them obtain e-resources using Google search engines. This indicates a need for educational interventions to enhance students' awareness of authentic and reliable e-resources. Additionally, the study underscores the evolving landscape of information access and the importance of addressing challenges associated with the use of electronic resources in educational settings.

In a separate study, Apuke and Iyendo (2018) explore how internet technology is used in modern classrooms for educational purposes, emphasising how it affects student learning and academic

research. This study looks on the specialised function of the internet in academic research and learning, in contrast to other studies that mostly examined the effects on academic performance and broader educational goals. According to the findings, students identified several barriers that kept their schools from making effective use of the internet. Among these challenges include the absence of an electronic library enabling easy access to scientific papers, the unsatisfactory internet and cybercafé facilities on campus, and the staff's and institutions' lack of readiness for the digital age. In the face of these difficulties, students demonstrated resilience and resourcefulness, frequently depending on self-organization to use the internet for their academic work. Many said that using their cellphones or other portable devices is how they access the internet the most.

Ifijeh and Yusuf's (2020) research found enduring obstacles that prevent libraries in Nigeria from carrying out information and communication technology (ICT) projects successfully. Key challenges like ambivalence toward libraries and librarians, a lack of funding, poor technical infrastructure, and librarians' low ICT abilities are highlighted by the literature that currently exists. It is believed that these problems must be fixed for libraries to successfully offer computer-based services. The results emphasise how urgently these issues must be resolved for academic libraries to be prepared for the paradigm shift in teaching approaches that is constantly occurring, particularly considering the COVID-19 pandemic.

On a related note, Girakaduwa (2019) also investigated the usage of electronic resources and services among library users and students. The study found that a considerable number of respondents lacked the necessary knowledge and skills to effectively use electronic resources and services. Sejane (2017) stated that the low rate of students' usage of e-resources was an indication that more effort in creating awareness was needed to influence and increase students' usage of e-resources, while Lavanya and Santharooban (2018) recommend the introduction of regular training programmes to teach students the basics of information literacy skills.

3.2.1 Students' low usage of e-resources in academic libraries

Electronic information resources (e-resources) constitute very important sources from which library professionals of the 21st century acquire information resources to stock their libraries for purposes of teaching, learning, and research activities. In recent times, e-resources have become major information sources for academic institutions, mainly because of the rising popularity of the internet and the flexibility that comes with the usage of digitally based and online information resources. Kwafoa, Barfi, and Agyapong's (2019:9) reported that the purpose for which students used the electronic resources was to complete their assignments, write project work, update lesson notes, conduct research, and update themselves on new information in their fields of study. Due to their obvious advantages for users, such as simple citation and navigation of academic works, information downloading, uploading, and updating, and quick access to relevant information, e-resources have significantly improved the research and learning process among researchers, students, and lecturers (Ternenge and Kashimana, 2019).Owing to the ease of use of e-resources, library users are gradually embracing the use of e-resources which now predominate both on-campus and distance learning students' research activity (Singh, 2020; Ternenge & Kashimana, 2019) as compared to conventional library resources. To support this investment and encourage strong academic outcomes, it is crucial for these libraries to ensure that faculty, students, and researchers are utilising e-resources to their fullest potential (Ruzegea and Msonde, 2021). However, despite the enormous sums of money spent on database subscriptions over the years, the actual use of e-resources in most university libraries is still patchy (Yebowaa & Plockey, 2018). As a result, university library administrators have serious concerns about the availability of resources and budgetary allocations for the purchase of these resources (Ruzegea and Msonde, 2021).

Several authors have noted that although e-resources are available at the respective libraries reviewed, students in Ghana have not made adequate use of them. These authors include Okyere-

Kwakye and Nor (2020), Kwafoa, Barfi, and Agyapong (2019), and Ankrah and Atuase (2018). Additional Ghanaian scholars who have written about the problem of students' underutilization of resources in academic libraries in Ghanaian universities include Amoo (2018), Dukpe et al. (2018), Yebowaa, and Plockey (2018).

The research conducted by Okyere-Kwakye and Nor (2020) delves into the intricate factors influencing students' intentions to utilise e-library resources for their studies. Despite the study's focused aim to investigate these determinants, a noteworthy revelation emerged: a significant proportion of college students exhibit reluctance to engage with e-library resources for their academic pursuits. In the Ghanaian academic landscape, the government has made substantial investments in subscribing to numerous university libraries, emphasising the importance of students' utilisation of e-library resources for learning. However, the study's findings highlight a prevalent hesitancy among university students to leverage these e-library resources for their studies. This reluctance stands as a nuanced challenge, considering the considerable resources allocated by the government to enhance students' access to digital learning materials. Unraveling the intricacies behind students' hesitancy becomes imperative for stakeholders, including educational institutions and policymakers, to devise effective strategies that promote the optimal use of e-library resources. The study serves as a crucial point of departure for addressing the underlying factors contributing to students' apprehension, thereby fostering a more conducive environment for embracing digital learning resources in the academic sphere.

At the University of Cape Coast (UCC) in Ghana, Kwafoa, Barfi, and Agyapong (2019) carried out a study that examined how first-year postgraduate students used electronic resources, paying particular attention to issues including awareness, usage, training, and access. One important finding from the research is that students are aware of electronic resources, but they don't use them as much to help with their academic work. Students' subpar information literacy abilities were one significant hurdle found. Even though awareness was there, the study shows that this ability deficit

prevented awareness from being put to good use. Students not participating in the library's information literacy skills training programmes to the fullest indicates a possible area for improvement in terms of improving the students' ability to make the most use of electronic resources. To highlight the adaptability and accessibility of electronic resources, the study also shed light on the variety of electronic devices used by postgraduate students, including laptops, iPads, desktop PCs, and mobile phones. Notably, most of these materials were used for research, project work, assignments, updating lesson plans, and keeping up with current developments in their respective fields of study. Considering these findings, the study suggests that a systematic curriculum be established that incorporates training with electronic resources into postgraduate students' normal lecture sessions. It is recommended that students be given specific time in their schedules for training and that this time be connected to grades or ratings for their academic achievement to close the current gap and enable them to use technological resources more efficiently for their academic endeavours.

In a related study Amoo (2018) investigated graduate students' usage of e-resources at the University of Ghana Business and Management School to ascertain students' level of awareness of e-resources and their frequency of use of e-resources. The findings revealed that while students were aware of electronic resources, they used them infrequently. The reasons assigned for the low usage of e-resources were a poor and unfriendly user environment that led to slow access speeds, inadequate searching skills of users, inadequately subscribed titles, and struggles in using the retrieval system to access relevant information. The study thus recommended a reasonable investment in training the user (i.e., both library staff and students) on the skills needed for effective information retrieval, which, in the view of Amoo (2018), will improve access, thereby leading to effective and efficient usage of the e-resources.

In a related study, Tetteh and Nyantakyi-Baah (2019:44) investigated the impact of academic libraries on Ghanaian students' academic accomplishments as well as their satisfaction with staff

behaviour, resources, and services. The survey found that Ghanaian academic libraries must have high-speed internet access, a team of professionals, and enough online resources. Additionally, libraries ought to try to promote their resources and services to stakeholders to establish their value.

Further, to assist in subscription and budget decisions, Tetteh (2018) investigated how electronic resources were used within the Consortium of Academic and Research Libraries in Ghana (CARLIGH). This has become essential due to the challenges institutions experience in covering subscription costs due to ongoing fee increases, tight budgets, and unstable currency values. Results showed that using CARLIGH-facilitated electronic resources was improved. But every year, the rate of improvement slowed. The results of this study will help librarians make decisions about ongoing subscriptions, budgetary justification, and promotion.

Furthermore, Ankrah and Atuasi's (2018) study findings also affirm students' lack of knowledge of e-resources and their usage of only a few of the available e-journals and databases. The narrow and minimal usage of the e-resources was attributed to students' limited searching skills and the inability of the University of Cape Coast (UCC) to provide a well-structured user skills training programme and a well-resourced library environment to facilitate maximum usage of the available e-resources.

To have a holistic view of students' use of e-resources in tertiary institutions of higher learning, the review of the literature looks beyond the borders of Ghana to include the findings of researchers whose outcomes are related to universities elsewhere within and beyond Africa.

Delaney and Bates (2018) study investigated the academic library needs of doctoral students at Ulster University (UU). The study identifies PhD students' information literacy training needs and explores current levels of library engagement, barriers to use, and gaps in existing services. First-year PhD students at Ulster University (UU) were surveyed, and interviews were undertaken with three students. Findings show that just over half of the respondents start their research from the library's e-journal interface or library databases, and these resources are also their main research

tools. Minimal use was made of social media or apps. Students' ability to correctly identify different source types within a reference did not match the confidence they expressed in their own abilities, and two-thirds were not aware of basic e-book capabilities. However, over 90% of the respondents strongly agreed that the university library service was essential for their research. The article concludes with several recommendations on improving library services for PhD students.

The research conducted by Olayode et al. (2023) delves into the computer attitudes prevalent among undergraduate students in Southwest Nigeria and explores the correlation with the utilisation of electronic information resources. The study reveals a positive computer attitude among the students. However, a noteworthy finding emerges as the study determines that computer attitude is not a significant predictor of electronic information resource use among undergraduates in Southwest Nigeria (β = -.033, P >.05). This suggests that, despite the positive overall attitude toward computers, this sentiment does not directly translate into increased utilisation of electronic information resources.The study's outcomes highlight the significance of focused interventions in the form of sufficient training and user education initiatives considering these findings. The objective is to familiarise students with the importance of electronic information resources offered by libraries and give them with the necessary tools to efficiently browse and utilise these resources.

In addition, the study (Olayode et al., 2023) suggests for increased awareness and user education programmes designed with undergraduates in mind. Academic libraries may play a critical role in creating a broader knowledge of the value and utility of electronic information resources among students by raising awareness and offering instructional programmes. Through the implementation of this strategic approach, undergraduate students in Southwest Nigeria will be able to make better educated and proficient use of electronic resources by closing the gap between their positive attitudes toward computers and their actual use of them.

In the study conducted by Olatoye, Nekhwevha, and Muchaonyerwa (2021), aimed at examining the impact of ICT literacy skills competency and experience on undergraduate students' use of

electronic resources in selected Eastern Cape universities in South Africa. The research's findings provide insight into an important area of students' use of internet resources. One important finding of the study is that the undergraduate respondents appear to underuse electronic resources on average. The low level of ICT proficiency and experience among the students is the reason for this underutilization. It follows that the respondent's ineffective use of e-resources is hampered by their low levels of ICT literacy. This conclusion is consistent with the general knowledge that the ability to effectively use electronic resources is influenced by one's level of ICT literacy. The study emphasises how students' capacity to fully utilise the electronic resources at their disposal for their academic endeavours is correlated with their level of ICT literacy. In essence, the results show how important it is to launch programmes targeted at improving undergraduate students' ICT literacy to close the achievement gap and provide them the tools they need to make the most of the electronic resources at their disposal. This realisation adds to the continuing conversation on how digital literacy affects students' access to and use of electronic material in the classroom.

3.2.2 Difficulties encountered in accessing e-resources.

Access to and utilisation of e-resources by students, academics, and researchers face various challenges, although the specific factors may vary from one university to another. Previous studies by scholars such as Siwach and Malik (2019), Mwantimwa and Elia (2017), Sohail and Ahmad (2017), Bala et al. (2018), Tella et al. (2018), and Aladeniyi (2017) have shed light on several impediments that hinder students' access to e-resources. These limitations encompass issues such as slow internet service, unfamiliar file formats, unreliable power supply, inadequate access to subscribed e-resources and databases, inaccessibility of e-resources from home, a limited number of available titles, restricted access to back issues, difficulties in retrieving relevant information amid a sea of irrelevant content, information overload, discomfort in online reading, instability of e-resources, limited access to computers, and insufficient support from library staff.

Additionally, other obstacles that have come to light include challenging interface designs, lack of IT skills, concerns about credibility and quality, insufficient knowledge of effective search techniques, inadequate understanding of ICT applications, unfamiliarity with searching e-resources, website blockages, insufficient search skills, network issues, limited computer proficiency, reliance on open access resources that may not always be authoritative, restricted time to access resources, overwhelming volumes of data and information, technical faults, doubts about authenticity, inadequate subject knowledge among librarians, high subscription costs, and unawareness of reputable e-resources (Iqbal, Tariq, & Ahmad, 2021). Moreover, some hindrances include the unavailability of back issues, time-consuming searches for relevant materials, difficulty reading text on computer screens, and limited instructional programmes to aid users in navigating e-resources effectively.

Furthermore, other previous studies (Sejane, 2017; Ternenge & Kashimana, 2019) have identified several other factors that contribute to these difficulties, including a lack of search skills, high internet access costs, power outages, and navigation issues. Inadequate searching techniques, which may result from insufficient training or unfamiliarity with academic databases, can also limit access to EIRs. Numerous obstacles that students face when using electronic information resources (EIRs) at academic libraries in developing nations have been documented by Hindwa, Chawinga, and Dube (2019). The usefulness of EIRs in African colleges can be greatly increased by resolving access restrictions, offering resources in local languages, and improving searching techniques through training.

Barfi, Boohene, and Afful-Arthur (n.d.) conducted a study that identified various challenges faced by postgraduate students when using e-resources at the University of Cape Coast, including limited internet access, poor information searching and retrieval skills, slow internet speeds, and technical issues or lack of subscriptions. To address these challenges, a multi-faceted approach is necessary, such as improving internet connectivity and access points, providing training on effective

information searching and retrieval skills, and ensuring that necessary e-resource subscriptions are available.

Hindwa, Chawinga, and Dube's (2019) study found that most students prefer using the internet as their primary source of information for academic tasks. However, they face obstacles such as inadequate online information literacy skills, subpar internet connectivity, and insufficient computer labs. The study also found that students typically begin their searches using search engines. Overall, this study highlights the importance of internet access and digital literacy skills in effectively using online resources for academic purposes.

Iqbal, Tariq, and Ahmad (2021) reported difficulties faced by students, including restricted access policies, licencing issues, and authentication problems that prevented many users from accessing digital resources. Additionally, lack of necessary skills and knowledge hindered the effective use of online library databases and digital resources. Furthermore, users faced challenges managing database layouts and organising online information, resulting in information overload and difficulties retrieving relevant information. Slow internet download speeds were also identified as a significant challenge, impacting users' ability to access and download digital resources. The findings of several studies (Singh, 2020; Mani, Hameed & Thirumagal, 2019; Ternenge & Kashimana, 2019) suggest that students' search skills may influence their information-seeking behaviour.

The Oseghale (2023:195) study recognized a lack of understanding of the availability of e-resources, inconsistent internet access, inadequate staff assistance, a lack of continuity in e-resource subscription, and a lack of local content in the e-resources as the main challenges faced by graduate students in the use of e-resources. According to the study, proactive measures should be done to raise internet usage, e-resource knowledge, training, support, subscription continuity, and local content so that everyone can take advantage of the opportunities of the information age.

The literature survey identified several challenges that hinder African university students' access to the internet for information, ultimately leading to a limited use of online resources. The following factors were identified as contributors to this conclusion:

1) Lack of browsing skills: Many students had limited browsing skills, which made it difficult for them to navigate online resources effectively.

2) Low internet bandwidth: Limited internet bandwidth was identified as a significant challenge, as it made accessing online resources slow and frustrating.

3) Insufficient ICT infrastructure: Many universities had insufficient ICT infrastructure, including a lack of computers, internet connectivity, and electronic databases.

4) Lack of internet access at home: Many students did not have internet access at home, making it difficult for them to access online resources outside of the university environment.

5) Absence of online assignments: The study found that the absence of online assignments was a barrier to the use of online resources, as it reduced students' motivation to use them.

6) Lack of motivation to use online information: Some students lacked motivation to use online information resources, which may be related to cultural attitudes toward education.

7) Lack of personal laptops: Most of the students did not have personal laptops, which limited their ability to access online resources outside of university facilities.

Addressing these factors is crucial to ensure that African students have equal access to educational resources and opportunities. This may involve improving ICT infrastructure in universities, providing training on browsing skills, increasing access to personal laptops, and integrating online assignments into the curriculum. For Fernadez (2018), librarians should contribute by making

accessibility a part of their vendor communication. Librarians need to convey the user needs to the design of the IS so that it delivers a better user experience; designing usable and interactive website features that provide for flexible, compatible, and assertive navigation, licencing arrangements, and the collection development policies of EIRs should reflect the needs of the user.

3.2.3 Availability of e-resources

Central to the mandate of every academic library is to collect, organize, and make relevant information resources available to its targeted users (Ternenge & Kashimana, 2019:3), and in many universities today, e-resources have become an essential part of the library collections supporting the teaching, learning, and research activities (Sejane, 2017). Students who desire to advance their intellectual growth depend greatly on e-resources for their research needs via their campus libraries because they serve as readily available information resources and provide accurate and timely information to the user (Ternenge and Kashimana, 2019:9).

Ternenge and Kashimana (2019) observe that the types of e-resources, coupled with the extent of their availability to the user or student, tend to influence the usability of the resources. It might be impossible to make e-resources accessible and usable by students without making sure the resources are available. Ternenge and Kashimana (2019) also revealed that e-resources were available; however, the extent of accessibility and utilisation of e-resources by students was lower.

Oseghale (2023:195) reckons that the availability of e-resources will provide the user access to enormous, authoritative, reliable, accurate, and timely information resources, which could lead to innovative teaching and learning and increase timeliness in research. Availability, therefore, needs to precede accessibility, while accessibility precedes usage.

Some electronic information resources that Ternenge and Kashimana (2019) found to be available in the Francis Sulemanu Idachaba Library of the University of Agriculture, Makurdi, Nigeria, were the online public access catalogue (OPAC), online databases (Ebscohost reference databases,

Science Direct Online), e-journals, e-newspapers, CD-ROM databases, e-magazines, e-books, e-research reports, and a virtual library online. Also, Dukpe, Sakibu, and Arthur's (2018) assessment of the extent of students' awareness and utilisation of e-resources at Tamale Technical University in Ghana found that the majority, of students (61%) were not aware of the availability of e-resources.

Ruzegea and Msonde (2021:104), disclosed that, despite evidence of the availability of electronic resources from the library, the frequency of use was still low. In a similar vein, Oseghale (2023:195) opined that availability of e-resources does not mean use. Several researchers (Ternenge & Kashimana, 2019; Ubogu, 2020) have urged librarians to address students' lack of knowledge about the availability of e-resources in libraries by ensuring that the resources are made available to users for ready access without or with less stress.

3.2.4 User awareness of e-resources

Awareness of e-resources is very important to patrons when it comes to accessibility and usage of resources. Patrons may be unable to access the library's information resources and services if they are unaware of their availability. Tetteh and Nyantakyi-Baah (2019:44) contend that the need for libraries to remain relevant in the current information environment, which they describe as dynamic and competitive, is about communicating well with current and potential users about the benefits of using the library. Most users of libraries, particularly those in higher academic institutions, are finding fewer reasons to physically visit libraries nowadays because information seekers want easy access to information regardless of the distance to a library. Because libraries now operate in a competitive environment, the task of library and information professionals in making patrons aware of what they have to offer is critical (Tetteh & Nyantakyi-Baah, 2019:44)).

Meanwhile, reports from several authors (Baayel & Asante, 2020; Acheampong, Mingle, Kofi, & Bekoe, 2020; Ankamah & Gyesi, 2022) have agreed that user awareness can greatly influence the

accessibility and usability of e-resources. Building awareness is a fundamental requirement for improving library resource accessibility.

For instance, Baayel and Asante's (2020) study focused on exploring students' awareness and utilisation of electronic information resources at Koforidua Technical University. The findings pointed to a low level of awareness among students regarding the availability of academic electronic resources and databases. The study further found that students predominantly relied on search engines such as Google and Yahoo for information retrieval. Additionally, the study uncovered various constraints that adversely affected students' effective utilisation of e-resources. The results further demonstrated that the actual utilisation of electronic information resources by students was also low. In response to these findings, the study proposed several strategies to be implemented by stakeholders to address the challenges hindering students' optimal utilisation of electronic information resources. These proposed strategies aim to enhance awareness, improve access, and mitigate constraints, ultimately fostering a more effective and widespread utilisation of electronic resources among students.

The study by Bawa, Bawa, and Arthur (2018) evaluated how much Tamale Technical University students in Ghana's Northern Region knew about and used electronic library resources. According to the study, there is a very low degree of student awareness of electronic resources. Sixty-one percent of the students surveyed said they were not aware that the school has electronic library resources since they had never heard of them before. Because of this, many students continued to study using the conventional library system. Furthermore, only 16 percent of students knew that the school had electronic library resources available to them, and of those who did, only 37 percent said they used them once a week and 31 percent said they used them twice a week for academic purposes. The study concludes that students' limited use of technological resources was caused by their lack of awareness of them.

Yebowaah and Plockey's (2018) study examined the faculty's use of e-resources on the Wa campus of the University for Development Studies, Ghana. The findings of the study revealed a high level

(65%) of user awareness of the availability of e-resources. The study, however, reported a 65.7% low levels of resource utilisation. The study also reported that this inhibited maximum usage of the resources. Among the challenges confronting the abilities of the libraries to attract high usage of e-resources were insufficient library infrastructure, inadequate IT infrastructure coupled with poor internet connectivity, and untrained library staff, which were the major ones. The study recommended improving user awareness through training workshops for users and staff.

Meanwhile, other studies (Acheampong, Mingle, Kofi, and Bekoe, 2020; Ankamah & Gyesi, 2022) found a high level of user awareness in Ghana. Acheampong et al. (2020) study investigated the use of electronic resources and information by research scientists in Ghana, focusing on awareness and level of use of electronic resources, perceived reliance, benefits, and impact of the use of electronic resources on the research activities. The result revealed that the majority, of the scientists (92%) used electronic resources. The most used types of resources were electronic databases, electronic research reports, and electronic journals. The purpose of the use was mostly for research work. Some of the impediments to accessing the electronic resources were poor ICT infrastructure and a lack of skills in accessing the resources. Generally, the use of electronic resources has improved the research activities of research scientists. It is recommended that continuous training (formal and informal) and the provision of adequate ICT infrastructure improve access to electronic resources.

Likewise In their 2022 study, Ankamah and Gyesi conducted a comprehensive analysis of user awareness and perception regarding the utilisation of electronic resources within a health sciences library in Ghana. The research revealed high recognition of the various electronic resources offered by the library. Significantly, the study identified a positive correlation between users' computer literacy skills and their awareness of electronic resources, highlighting the pivotal role of digital proficiency in navigating these resources effectively. Despite these positive aspects, challenges emerged, notably the high cost of personal internet data and issues related to low internet

bandwidth during resource access. The study recommends the implementation of regular training sessions to enhance user familiarity with electronic resources, effective collaboration between libraries and lecturers for increased awareness, and addressing challenges related to internet access costs and bandwidth limitations.

The study conducted by Hamad, Farajat, and Hamarsha (2018) focuses on the awareness and adoption of mobile technologies (MT) in delivering services within academic libraries in Jordan, as perceived by library staff. The findings suggest a high level of awareness among library staff regarding the advantages of incorporating MT in academic libraries. However, despite this awareness, the research highlights that the full potential of MT has not been realized in these environments due to various factors.The study identifies incompatible information technology infrastructure and a lack of training as significant barriers preventing the optimal utilization of MT in academic libraries in Jordan. The researchers propose that addressing these challenges through increased investment in MT and enhanced technology training for library staff could lead to improved performance and service quality. The envisioned outcome includes more meaningful interactions with users and an overall enhanced user experience. Therefore, the study emphasizes the importance of strategic investments and efforts to leverage MT effectively for the benefit of academic library services in Jordan.

Isibika and Kavishe (2018) also investigated the utilisation of e-resources subscribed by the main library of Mzumbe University (MU). Academic staff, postgraduate students, and third-year undergraduate students constituted the respondents in mixed-method research adopting both cross-sectional and case study research designs. The results revealed the underutilization of subscribed e-resources in the library. Respondents' assessments of their level of awareness of the library's subscribed e-resources were described as moderate. The major impediments that brought about the underutilization of e-resources were unstable network connectivity, a lack of searching skills, and the non-availability of conducive IT infrastructure to transmit the resource to the users. Among the recommendations was for the MU Library to conduct intensive user training, particularly in the

skills required for information searching, to increase utilisation of subscribed e-resources. The study also recommended that the library engage in marketing its subscribed e-resources to improve user awareness of available e-resources.

The issue of low student awareness of e-resources in their campus libraries is probably a result of inadequate marketing and promotional campaigns to boost the awareness of both current and potential patrons about the availability of certain information resources at their institutions' libraries. Awareness creation necessitates the implementation of marketing and promotional measures to convey the message to patrons; however, instead of focusing on traditional marketing and promotion campaigns, some researchers (Olorunfemi, Ipadeola, 2018; Okyere-Kwakye & Nor, 2020; Olatoye, Nekhwevha & Muchaonyerwa, 2021) have suggested the use of Web 2.0 tools to increase awareness of available library resources and promote the use of e-resources. There is also the need to target a specific user group to design and implement a content-specific awareness creation campaign so that information users are well informed on information resources suitable for their information requirements (Ofori, Markwei & Quagraine, 2020).

3.2.5 Accessibility to e-resources

Given the apparent relevance of e-resources to the academic pursuits of students in universities, electronic services librarians facilitate access to a wide range of resources and material, from publisher-provided electronic journals and directories to locally generated websites, documents, and instructional videos. In higher education, providing accessible infrastructure is critical to ensuring fair access and opportunities for students, faculty, and staff.

To the librarian, the goal of accessibility is to provide an information system that facilitates access to resources by people of all abilities. Access to information resources can make a huge difference for patrons, and knowing what is available and the obstacle limiting access is critical to serving all clientele. A few examples of how libraries can stimulate access to online content are to create website contents, online public access catalogues (OPACs), research guides, tutorial videos, and

podcasts, to name only a few examples of how libraries can create online material (Rahoo, et al., 2018).

The availability of electronic information resources (EIRs) and e-services within the academic community of institutions of higher learning is tremendously on the rise (Oseghale, 2023; Osinulu, 2021). This has led to many academic libraries all over the world now adopting ICT solutions to enable the provision of up-to-date information resources, with some replacing their traditional collections with e-resources, which have been considered more accessible by users. Users' access to EIRs, particularly students in university settings, has the potential to improve the quality of research and teaching, given that academic excellence is largely based on effective research (Diyaolu, Salamm, & Kenbi, 2019). It is such special features as concurrent access and usage of EIRs that endear students as well as other library users to them (Idiegbeyan-Ode, Ifijeh, Aregbesola, Owolabi, & Toluwani, 2019). Indeed, the world observably appears to witness a rising interest in research concerning accessibility to EIRs, and this is attributed to the rising expectations of users of the potential effect of e-resources on information-seeking behaviours in the global arena (Idiegbeyan-ode, Ifijeh, 2019).

Some scholars (Diyaolu et al., 2019; Idiegbeyan-ode, Ifijeh, 2019; Moyo, 2017), in recent years, have conducted studies on students' accessibility to e-resources. Several of them (Diyaolu et al., 2019; JOlSELT, 2020; Idiegbeyan-Ode et al., 2019) have conducted studies focusing on emerging issues concerning the access and use of EIRs and facilities in the research process from a global perspective. Meanwhile, there seem to be numerous challenges regarding the accessibility of e-resources among tertiary students in Ghanaian universities. Kwafoa, Barfi, and Agyapong (2019) found that low access to and usage of e-resources at the University of Cape Coast (UCC) by post-graduate students was a result of poor information literacy skills.

3.2.6 Information literacy (IL) skills in the provision of e-resources

The shift from print sources to electronic information resources has posed a new challenge to library users in terms of finding and eventually using scholarly literature. Access and productive use of e-resources require that users possess skills that enable them to identify needed information, locate it, and evaluate it. This has called for the need to intensify information literacy (IL) skill efforts and programmes to get library users up to speed with contemporary technology and the skills required for apt access to information. Information literacy is not an unknown area in the realm of library and information science. It has become even more relevant in the wake of the current information landscape to get library users to acquire needed IL skills. IL, according to Israel and Nsibirwa (2018:1), and Fraillon et al., (2020), is one's ability to recognise the need for information, locate, search for, retrieve, and apply such information while adhering to its ethical usage. The current era of information explosion, coupled with global technological advancement, has rendered people who are disadvantaged in information literacy skills unable to access information resources using appropriate IT tools even if they are available (Henninger, 2021).

Several researchers (JOLSELT, 2020; Oseghale, 2023:195), have reported on the corresponding relationship between the use of e-resources and the level of the users' information literacy skills. For instance, Graduate students at the University of Ibadan exhibited a high degree of digital literacy abilities, despite having limited experience with using online resources according to Oseghale's (2023) study. The study found several difficulties faced by students when utilising e-resources including sporadic internet connection, insufficient staff support, a discontinuous e-resources subscription, and a deficiency of local content in the e-resources. To ensure that everyone can benefit from the use of e-resources and to prevent those who can most benefit from them from becoming even more marginalised, this study recommends taking proactive steps to increase awareness of e-resources through regular internet access, training and support, continuity of e-resource subscriptions, and increased local content. Osinulu (2021) contends that the basis for the underutilisation of information resources is the lack of information literacy skills; therefore,

equipping students with information literacy competencies is to empower them to identify, locate, and use information resources. Omosebi and Omosebi, (2020) have also argued that the prevailing digital divide between the developed and developing worlds has also brought about disparities in the accessibility to digital information resources, as they identify that access is no longer about availability and ownership but rather an issue of technological disparity between the developed and developing worlds. It is, therefore, significant to close such a gap through adequate investment in information literacy training and the acquisition of ICT facilities and e-resources.

Amuda, Abdul, Kehinde and Onanuga (2020) recommend information literacy (IL) delivery strategies as part of the measures to improve the accessibility and usage of online scholarly literature among users in developing countries. In the view of Amuda et al., (2020), both academics and researchers coming from developing countries have over the years grappled with the challenge of accessing scientific literature emanating from both locally and beyond. This situation has gained various attributions, but chiefly among the causative factors are the constraints relating to the institutional inability to subscribe to quality published literature due to the costs. Also, as there have been several initiatives owing to the advancements in ICTs to ease the challenges of availability, accessibility, and usage of scholarly e-resources, there remain some obstacles hampering the ready accessibility and usage of online scholarly literature within most academic institutions in Africa. Owing to the several challenges revealed as hindering students' accessibility and usage of e-resources, Abdullahi (2021) recommends IL skills training for students of academic institutions in developing countries.

The JOLSELT (2020) study investigated the accessibility and use of e-resources among undergraduate students at Lagos State University. The findings of the study revealed that undergraduate students used electronic information resources (EIR) for educational purposes. E-journals, for example, were the most used e-resources. The positive student patronage of EIR was attributable to the university's progressive efforts in the students' IL training regime. Oseghale's

(2023:195) findings showed that users' proficiency in digital information literacy will only result in effective use of e-resources if they have a high level of knowledge about their availability, unrestricted access to the internet on a regular basis, adequate training, and support for using e-resources, consistency in database subscriptions, and an increase in local content in the databases housing e-resources. The study has demonstrated that it is essential to establish a system that guarantees precise long-term access and the provision of adequate local contents to the subscribed digital sources, as well as to provide scholars and students with digital sources that meet the same standards of quality as printed sources.

3.2.7 Digital literacy (DL) skills in the provision of e-resources

According to Omoefe and Echedom (2021:49), digital literacy pertains to an individual's capacity to find, assess, employ, and generate knowledge through digital technologies in relation to accessibility and the use of e-resources from libraries. It entails a set of abilities and knowledge that allow users to find, comprehend, and make use of electronic resources found in online repositories or libraries.

High-quality research and development outcomes for undergraduate students are greatly influenced by the efficient use of electronic database resources provided by a university library. This is important because, in contrast to the laborious and time-consuming paper-based research method, which restricts researchers to one book at a time, the superior content quality and easily accessible research queries through electronic terminals (computers, tablets, and mobile devices) make this possible. Students who possess digital literacy skills and use an electronic library database can access millions of academic papers and articles from various academic bodies and research institutions across the globe, including Omoefe and Echedom (2021:48).

Therefore, it is imperative to recognise that getting these resource-intensive electronic databases is only as important as achieving digital literacy and technological proficiency (Adeniran & Onuoha,

2018:164). This acknowledgement highlights the significance of ensuring that students not only have access to cutting-edge IT devices but also have the abilities and knowledge necessary to use them efficiently.

Digital literacy is a critical ability for successfully accessing and utilising electronic library resources, according to numerous researchers (Oseghale, 2023; Osinulu, 2021; Omosebi & Omosebi, 2020). The usage of electronic resources by graduate students studying humanities at the Kenneth Dike Library, University of Ibadan, Nigeria, and the necessity for digital information literacy abilities were investigated in the Oseghale (2023) study. According to Osinulu's (2021) report, library professionals working in state and federal universities in Ogun State, Nigeria, were required to possess digital literacy competencies to facilitate self and user access to the available resources. Furthermore, Omosebi and Omosebi's (2020) study discovered that information literacy is a prerequisite for using e-library resources for undergraduate students in southwest Nigeria. The study conducted by Israel and Nsibirwa (2018) highlighted the importance of information literacy abilities when utilising electronic information resources. Henninger's (2021:3) research emphasised the necessity of information literacy, its significance, and the ramifications of undervaluing it in the contemporary period. The importance of getting ready for life in the digital age is emphasised by Fraillon et al. (2020:297) in the international report of the IEA International Computer and Information Literacy Study 2018.

3.2.8 Provision of ICT infrastructure and internet access

The availability of the necessary ICT infrastructure and the provision of reliable internet connectivity are prerequisites for accessing e-resources. Electronic resources are not available to students in a vacuum (Amuda et al., 2020:3). Most e-resource databases are accessible through online databases; therefore, for students and other researchers to make use of these online information resources, it might be necessary to have access to a cutting-edge ICT infrastructure.

The university's libraries must give students with access to cutting-edge ICT technology within their allocated budget.

Challenges relating to the inadequate provision of ICT infrastructure coupled with unstable internet supply and computer networking in academic institutions have variously been mentioned as a major factor that is negatively influencing accessibility to e-resources in developing countries, including Ghana (Anafo, Akpah & Ofori, 2020; Osinulu, 2021; Omosebi & Omosebi, 2020; Oseghale, 2023:195). For instance, Oseghale (2023), in a study involving African universities, found that the student computer ratio was not adequate to support the provision of access to e-resources to students.

A study by Anafo, Akpah, and Ofori (2020:75) focuses on the availability and condition of ICT resources used at the University of Mines and Technology (UMaT) and how they are applied to the administration of campus library services. found that patrons' access to these electronic resources was hampered by the library's limited access points and poor ICT infrastructure.
In a study to investigate the state of IT facilities and faculty satisfaction with university-subscribed e-resources in Bangladesh, Habiba and Ahmed (2020:118) found that university libraries in Bangladesh had adequate IT facilities. According to the study the majority, of the library heads reported that they faced issues like insufficient funding and a shortage of trained staff (Habiba and Ahmed, 2020:112). With improved ICT infrastructure and more access to new online materials and services, universities in Bangladesh can greatly benefit from this study.

3.3 Prevalence of marketing electronic resources in academic libraries

The concept of marketing in the field of library and information science (LIS) is not new. It can be traced back to the 1870s and has been greatly influenced by the works of earlier experts. According to Bhatt and Gupta (2018), the philosophical assumptions of early experts in LIS, such as the Ranganathan Five Laws of Library Science, reflect contemporary marketing approaches.

Ranganathan's renowned Five Laws of Library Science, first published in 1931, have been widely discussed in the context of marketing by numerous authors. As a result of this discussion, these laws can be seen as closely aligned with marketing theory, wherein the reader (equivalent to the customer) assumes a central role as the king and focal point of the library. Consequently, the entire organisation, including its resources, services, facilities, rules, regulations, and procedures, is oriented towards being customer-focused (Jones and Harvey, 2019:4). However, the turning point in the discourse on the scope of marketing within LIS was the emergence of Kotler and Levy's (1969) writings, which advocated for the broadening of the marketing concept beyond commercial enterprises to include not-for-profit ventures. Since then, there has been a shift in the discourse of marketing to encompass not only commercial entities but also not-for-profits and services such as library and information services (LIS).

The study undertaken by Bhatt and Gupta (2018) sought to investigate the foundational elements of marketing management, philosophy, and techniques in relation to library and information science products and services. The study opined that human expertise, service attitude, and information resources are all closely related to the customer in the marketing of any good or service. A library's service strategy and guiding principles must be clearly connected to its patron base.

Marketing plays a crucial role in bridging the gap between library materials and their users. This is achieved by implementing a range of promotional tactics, including study groups, book presentations, book exhibitions, initiatives that are product- and service-focused, and the use of social media. Marketers must collect, display, and save essential data to provide the correct reader with relevant information at the right time in a format and manner of their choosing. Customers' precious time is saved by this procedure.

To maximise user satisfaction, the content contained in libraries should be user-centered and presented in an easily retrievable format. As a result, marketing strategies and technologies are

essential to recognising and foreseeing user needs as well as efficiently communicating this information to end users (Bhatt & Gupta, 2018).

In addition, a study by Jones and Harvey (2019) looked at how libraries use social media accounts to promote their services and interact with potential patrons, especially younger audience members. According to the study's findings (Jones & Harvey, 2019:3), libraries in the industry have difficulty attracting attention to their social media initiatives. This paradox highlights the challenges associated with bringing user-centric marketing approaches into line with social media interaction dynamics, which at times highlight the importance of library staff in decision-making processes.

Furthermore, among the several scholars (Bhardwaj & Jain, 2016; Ndungu & Gikandi, 2018) who have emphasised the importance of integrating marketing principles and practises into library information provision services, it has emerged that many librarians and information professionals around the world are now embracing marketing as an essential concept that is vital to the success of their work (Jones & Harvey, 2019:3). However, it has been noted that libraries and information professionals in developed countries have less embraced contemporary marketing practises compared to those in developing countries (Ndungu & Gikandi, 2018).

In their study titled "Exploring Strategies for Marketing Library Products and Services in University Libraries in Ghana," Agyei and Ngulube (2022) discovered that none of the libraries analysed had departments specifically dedicated to marketing library services. Furthermore, these libraries did not allocate budgets for their marketing plans but instead relied on informal marketing strategies. The study recommends the creation of dedicated marketing units in libraries that are adequately resourced to manage relationships and deliver value to patrons. The study suggests, therefore, that libraries should establish marketing departments with allocated budgets to effectively drive their marketing plans. This will help them manage relationships with patrons and provide valuable services. By implementing formal marketing strategies, libraries can raise awareness of their services and engage more effectively with their patrons.

Furthermore, Ofori, Markwei, and Quagraine's (2020:15) study attempts to investigate how marketing strategies are used in Ghanaian university libraries and how they are used to advertise their services to users. The research by Ofori et al. (2020:15) emphasises the importance of using a variety of tactics, such as the usage of social media technologies, to sell library goods and services. Some of the issues that were found to be impeding the effectiveness of marketing in the libraries included a lack of funding, staff members' ignorance of marketing strategies, and the absence of a marketing policy to direct marketing in the libraries. Even though this study was conducted in a small number of academic libraries, its conclusions suggest that, because the features are generally the same, they can be applied to most academic libraries. Based on the study's findings, the following recommendations were made to enhance marketing campaigns at the chosen university libraries: the formulation of marketing strategies, the augmentation of social media marketing, the planning of marketing seminars and workshops, the diversification of library financing sources, and user research.

According to Edewor et al. (2016), some African universities are starting to incorporate progressive marketing tactics into their deliberate strategies to engage with their users, following the example of universities in developed countries. The research findings revealed that most of the libraries had adopted traditional marketing approaches, such as bulletins, newsletters, orientation memos, flyers, and websites, to advertise their resources in a manner like their counterparts in developed countries. However, these libraries did not give much consideration to social media tools as part of their marketing strategies (Edewor et al., 2016). Okon and Umoh (2014) recommended that African universities should explore various marketing strategies, such as the 7 Ps Marketing Mix, segmentation, internet-based approaches, and exhibitions, to market their library resources. They further emphasised the need for libraries, as well as other information centers, to mobilise both their material and human resources for their marketing endeavors.

In Abdelrazig's (2018) study at the University of Gezira library in Sudan, marketing practises were limited, despite the provision of information resources and services by the library. The study identified several challenges that hindered the marketing of library and information services, including poor communication between librarians and users, management's lack of understanding of marketing in libraries, inadequate access to information technology, and limited media access to promote library services. The study recommended the adoption of a marketing plan, the use of contemporary IT tools to provide information resources that reflect current user needs, the provision of necessary facilities for marketing library services, and the implementation of training programmes for librarians in marketing library services.

Incorporating marketing concepts in libraries offers numerous benefits, including optimising the use of limited capital and human resources, improving the library's image, enhancing service quality, and ultimately satisfying users (Gurav, 2023; Garoufallou et al., 2013; Gupta, 2015; Gupta, 2013; Patil & Pradhan, 2014; Xu & Du, 2018). With a formal marketing plan and dedicated resources, libraries can ensure that users receive enhanced services, their needs are acknowledged, and they obtain the expected value from the services. Despite the advantages of marketing, many academic libraries in Ghana still lack formal marketing plans and rely on informal strategies (Agyei & Ngulube, 2022). However, there has been a recent surge in interest and studies related to marketing library resources in Ghana (Asante et al., 2020; Dzandza & Akussah, 2018; Martin-Yeboah et al., 2018; Ofori et al., 2020). To gain a deeper understanding of the importance of marketing e-resources in technical university libraries in Ghana, this study aims to determine whether the libraries have marketing plans as part of the strategies they employ to promote their products and services. By doing so, the study seeks to shed light on how marketing practises can be effectively utilised to benefit both libraries and their users.

3.4 Contemporary and emerging approaches for marketing e-resources

Academic libraries are currently confronted with a variety of challenges, including the use of emerging information technology, continuing budget cuts, and changing research and teaching demands. Academic libraries have had to change and adapt to the internet world and technological changes to keep their systems and programmes running efficiently and effectively. The extensive switch of information carriers from mainly print-based to electronic information resources (EIRs) has made e-resources gain prominence at all levels, which requires that students avail themselves of the opportunity by exploring these resources to access relevant and up-to-date information for academic and research purposes (Ezema & Chizoba, 2018). But even as more and more electronic information resources (EIRs) are being churned out, acquired, and subscribed to by libraries, their usage, as Ruzegea and Msonde (2021:104) observed, is below satisfaction in Africa. Meanwhile, there is a growing demand for librarians to show evidence of the usage of subscribed EIRs, which is a cause for concern with limited or no budgetary allocation available to them, library professionals are forced to vigorously adopt contemporary marketing approaches as the vehicle to raise user awareness and influence optimal use of EIRs (Ansah, Oppong & Kwame, 2023).

Given the foregoing, library and information professionals must rise to the challenge of influencing maximum user patronage of EIRs in libraries by implementing forward-thinking marketing interventions. Given the low usage of EIRs in African university libraries, several authors (Rahoo et al., 2018) have advanced the need for librarians to incorporate modern and emerging marketing techniques and strategies to guide the marketing of their EIRs.

A review of the literature revealed various strategic tools for marketing ELRs to the customer in libraries. It was obvious that relying on the usual conventional marketing techniques which have over the years been employed to market printed information materials in libraries may not work to achieve the best results for EIRs (Waral, 2020:2). For example, libraries have deployed various marketing tools (i.e., bulletins, flyers and brochures, posters, newsletters) to communicate with the

user (Pessa, 2019), however, with the arrival of EIRs, the conventional marketing approaches may not adequately achieve the needed results.

Several authors (Edewor et al., 2016; Ndungu, 2018; Ndungu & Gikandi, 2018) emphasise the importance of librarians in the twenty-first century considering the emergence of new media, particularly social media networking tools, as appropriate avenues for marketing EIRs. In libraries, ICT-based marketing approaches are used creatively to increase use. Academic libraries, particularly those in higher education institutions, may take a similar approach to maximise the use of library resources to the satisfaction of users. In academic libraries, creative marketing techniques such as social media, blogs, and other promotional materials are widely used. Efforts to familiarise library staff with various marketing techniques aid in the most efficient use of resources. Beyond conventional marketing models, librarians in their drive to achieve maximum usage of the EIRs they provide should adopt modern technologies and techniques to market library resources, focusing on relationship marketing as well as word-of-mouth marketing. Attention should be paid to emerging information and communication technologies (ICTs), which have opened a new wave of interaction between or among social groupings (Edewor et al., 2016; Thanuskodi, 2015). The most powerful and appealing strategies for promoting library resources are both conventional marketing and digital marketing (Waral 2020).

As libraries face challenges such as rising costs and budget cuts, Web 2.0 technologies provide an opportunity for libraries to overcome barriers in communication, promote value-added services, and maintain their position as information providers in a competitive environment. Libraries can leverage Web 2.0 technologies to provide exceptional electronic services to users. The traditional concept of book-oriented librarianship has evolved into a user-centered approach as information and communication technologies (ICTs) continue to advance rapidly. To remain competitive and maintain their role as information providers, libraries recognise the importance of marketing their

products and services to improve user satisfaction and promote service use (Edewor et al., 2016; Waral, 2020).

Many academic libraries have adopted Web 2.0 technologies to promote their services and survive in a competitive environment (Rahoo, Baladi, Arshad, Nagar & Rustamani, 2018; Waral, 2020). Web 2.0 tools, such as blogs and wikis, can be integrated into libraries to market their products and services. Blogs provide a powerful two-way communication tool for library users to share their thoughts, ideas, and comments. Blog entries are displayed in reverse chronological order, categorized, and searchable with links to other sites of interest. Users can publish posts through a web interface, and any reader can comment on a post. Wikis, on the other hand, are collaborative webpages that can be easily edited by anyone. They are useful for internal communication among library personnel, creating knowledge bases, and teaching information literacy skills to users. They can also be used for staff and student training on information literacy and for creating subject guides and gateways. In the study conducted by Rahoo et al., (2018), they discovered that various web 2.0 tools, including Facebook, Twitter, Wikis, RSS, LinkedIn, blogging, YouTube, and email groups, are considered suitable and widely used for marketing and promoting various library services and resources in university libraries.

Similarly, in the research conducted by Baba, Adamu, and Agba (2019), they explored the application of web 2.0 technologies for marketing library products and services. The study identified tagging, podcasting, social networking, instant messaging, RSS, wikis, and blogs as effective tools for marketing library information products and services. Furthermore, Rahoo et al., (2018) and Waral (2020) studies acknowledged the growing body of literature on the use of web 2.0 tools in libraries, such as blogs, wikis, social networking websites, RSS, podcasting, and others. These tools are gaining significant traction in academic institutions for various promotional and marketing activities in the library sector.

Web 2.0 refers to a set of technologies and web-based applications that allow for user-generated content, collaboration, and interaction. These technologies include social media platforms, blogs, wikis, and other web-based tools that allow for greater user participation and engagement. In the context of library e-resources, Web 2.0 can help in the marketing of these resources to students in several ways (Rahoo et al., 2018). Social media platforms like Facebook, Twitter, and Instagram provide a means of communicating with students and promoting e-resources in a more interactive and engaging way. Libraries can use these platforms to share information about new resources, upcoming events, and tips for using e-resources effectively. Other Web 2.0 technologies to consider are blogs, wikis, podcasting, instant messaging technologies, blogging, and simple syndication (RSS), among others, are worth considering as avenues for launching marketing campaigns to assist libraries in marketing their EIRs to their users. Others are social bookmarking, remote logins, mobile tagging via QR codes, and so on.

Libraries are thus utilising these tools to reach as many users as possible for the purposes of disseminating information and propagating their services to users, as well as providing information literacy instruction and other educational purposes (Ndungu & Gikandi, 2018). Agyei and Ngulube (2020) discovered that the libraries in their study lacked market plans for their EIRS and thus failed to adhere to strategic marketing communication plans. Nagra (2017:115) study underscored the need for developing strategic marketing plan for academic library to optimize the use of e-resources in libraries. Agyei and Ngulube (2022:1) found that academic libraries in Ghana relied too little on strategic, innovative tools and strategies for marketing and promoting their electronic resources. As a result, these strategies needed to be improved. For this and many other reasons, Uzuegbua, Chukwub, and Ibegwam's (2012) study reveals that creating URL links on desktop pages would effectively sensitise and increase students' utilisation of the various electronic databases subscribed to by individual Nigerian academic institutions. The experiment's results show that URL links are a strategy to effectively introduce subscribed electronic databases to students and researchers.

In another angle, several authors (Aslam,2018; Muneja, 2023; Mubofu, 2019.) have written about the potential benefits of using social media technology to advance customer relationship building by connecting the library to its users. Social media plays an enviable role in strengthening relationships between institutions and the public, and the library and its patrons are no exception. Because of the growing interest in social media among users, particularly youth, libraries are gradually considering social media as a tool for establishing and deepening ties with their user community as well as publicising their collections. Social media has been discovered to be a useful supplement to more traditional forms of marketing techniques used in businesses and institutions, such as libraries.

Waral (2020) provides a few examples of creative marketing campaign tools for academic libraries. They are the library websites, providing remote access facilities to e-resource databases such as EzProxy, e-newsletters, YouTube, blogs, email alerts, Facebook, Tumblr, Pinterest, Twitter, a knowledge portal, an RSS feed, and tutorials on various database usages, among others. A good avenue for marketing library resources and services is the library webpage or the institutional website. Various studies (Scholastica & Njoku, 2018; Horsfall, 2020; Atuase, & Maluleka, 2022), have proposed that libraries should leverage these websites, enabling them to reach a wide audience of students who are already familiar with and frequently use them. A study by Scholastica and Njoku (2018), have emphasised the importance of a strong online presence through library websites. Libraries can promote e-resources on their websites, which is a cost-effective marketing method, especially for those with limited budgets. A dedicated e-resources page on the library's or institution's website that is easy to navigate, visually appealing, and provides clear descriptions of each resource can help. Libraries can also promote e-resources prominently on their homepage and showcase real-life examples of students who have benefited from them (Scholastica & Njoku, 2018).

Ndungu (2018: 448), reported on the need for strategic marketing planning as part of the strategies the libraries cannot be overlooked. Strategic planning approach to marketing e-resources will enable library professionals to understand their customers and tailor their services and products to respond to their needs. The need for goal setting and client segmentation as an added marketing strategy is also worthy of mention as part of efforts to look at strategic approaches to marketing EIRs by libraries.

3.5 Behavioral intention to use e-resources from academic libraries.

The availability of electronic resources has transformed the way students learn, providing them with access to a wider range of information than ever before. As a result, academic libraries worldwide invest significantly in subscribing to e-resources to enhance their users' learning experiences (Ndungu, 2016). However, the adoption and usage of e-resources by students in higher education institutions in developing countries remain a major concern for academic libraries and information centres (Kumar, 2016; Okyere-Kwakye and Nor, 2020; Ankrah and Atuase, 2018). This concern is particularly pressing in low-income countries like Ghana, where the cost of procuring and maintaining e-resources is high for academic institutions, yet the cost and optimal use of these resources remain a significant challenge (Okyere-Kwakye and Nor, 2020; Ankrah and Atuase, 2018). Despite being aware of the existence of e-resources, students in Ghanaian technical universities do not engage frequently enough in using them for their studies (Okyere-Kwakye and Nor, 2020). Instead, they rely on less credible internet-based sources or social media platforms (Ankrah and Atuase, 2018) to access information for their studies. This highlights the need to understand the factors that influence students' usage or non-usage of e-resources, especially within the technical university setting in Ghana (Okyere-Kwakye and Nor, 2020; Ankrah and Atuase, 2018). As Vijayalakshmi, Rani, and Sornam (2017) contend, the appropriate use of e-resources by students must be assessed as they become more common in higher education institutions. In this sense, evaluating how effectively students are using e-resources is crucial as they proliferate in

higher education institutions. Therefore, it's crucial to comprehend how users want to use technological resources (Katablwa, 2017).

The review of literature shows that limited studies in the Ghanaian perspective have examined the factors influencing students' access to and usage of e-resources in Ghanaian universities. The factors influencing students' intents to use e-library resources for their studies at two technical universities in Ghana were the focus of Okyere-Kwakye and Nor's (2020) study. Accessibility, attitude, perceived usability, perceived utility, and relevance to studies all had a substantial positive impact on students' attitudes toward utilising the e-library, according to the study's structural equation modelling (SmartPLS) analysis of the data. Self-efficacy, subjective norms, and attitude are also major positive influences on students' intentions to use the online library.

Also, the outcomes of the Ankrah and Atuase (2018) and Isibika & Kavishe (2018) studies have determined that the optimal utilisation of information resources by users depends on the availability, awareness, and skills of the intended users. Several notable studies (Mboni & Msonde, 2021; Khan, Masrek, Mahmood, and Qutab, 2017; Arif, Ameen, and Rafiq, 2018) have examined the factors influencing university students' behavioural intentions to utilise technology to gain knowledge are included in this overview. For instance, in Mboni and Msonde's (2021) study, employed one-way ANOVA and regression analysis to determine the predicted factors that influence e-resource usage. The findings demonstrate that effective e-resource utilisation is influenced by education level, information literacy (IL) competency, and personal experience. As a result, the study recommended enhancing IL training and integrating IL capabilities into postgraduate curricula to assist important students in becoming proficient with using e-resources.

An associated study by Khan, Masrek, Mahmood, and Qutab (2017) used the modified Unified Theory of Acceptance and Use of Technology (UTAUT) model to examine the variables influencing university librarians' adoption of digital reference services (DRS) in Pakistan. The findings showed that information and communication technology (ICT) capabilities, usefulness,

and convenience of use were the most important predictors of DRS adoption. Age, gender, and library type were shown to have an insignificant moderating effect on the association between predictors and outcome variables.

Additionally, Arif, Ameen, and Rafiq's (2018) study used the UTAUT model as a theoretical framework to examine factors influencing student use of Allama Iqbal Open University's (AIOU) web-based services. Results of the study showed that performance expectations, effort expectations, and social influence are strong predictors of students' behavioural intentions to utilise web-based services, although both factors are necessary for students to use the services. Age, gender, and experience as moderating variables had little effect on how the Web services were used. At the Hassan Usman Katsina Polytechnic in Katsina State, Nigeria, Manzo's (2021) study also looked at students' behavioural intentions to use electronic information resources. Structural equation modelling (SEM) was used in the study to examine the UTAUT variables. The results of the SEM's analysis show that students' intentions to use e-resources were significantly influenced by their expectations for effort and performance. In relation to behavioural intention, the constructs of social influence and facilitating circumstances were shown to be irrelevant. Age, gender, computer experience, and discipline were found to have a limited impact on students' behavioural intentions to use e-resources. Furthermore, Cheah, Yeo, and Lim (2018) looked at the factors that may influence university students' behavioural intentions to use e-books in a different study. The study's findings show that convenience and media richness have a significant impact on university students' willingness to use e-books. Foluke's (2019) study looked at the variables that affected students' adoption of e-books in Nigeria and discovered that there was low usage of e-books in academic databases. Foluke's (2019) study further found that performance expectations, effort expectations, social influence, and facilitating conditions were the variables that affected students' adoption of e-resources, and gender difference acted as a moderator.

In their research, Patel and Darbar (2017) discovered that the elements that influenced students' use of e-resources were current and up-to-date information, easy access, and quick retrieval of information. Akpojotor's (2016) study found that user perception determines if the information resources are to be used, while Vijayalakshmi, Rani, and Sornam's (2017) study opined that usage of e-resources determines the level of computer knowledge and skills. According to Malhotra's (1996) study, behavioural intention to use is a type of strength that gauges a person's desire to carry out a particular behaviour. Some academics have claimed that a person's behavioural intentions are a measure of their desire to adopt new information technology (Tsai, 2012; Saloman and Salman, 2013; Davis, 1989). Four independent variables, including convenience, perceived usefulness, environmental consciousness, and media richness, were introduced to the framework in the study by Cheah, Yeo, and Lim (2018). However, the research found that just two factors—convenience and media richness—have a significant impact on university students' inclinations to use e-books. At the Hassan Usman Katsina Polytechnic in Katsina State, Nigeria, Manzo (2021) investigated students' behavioural intentions to use electronic information resources. Using structural equation modelling (SEM), the study evaluated the UTAUT variables. According to the study, students' intentions to use e-resources were significantly influenced by their expectations for effort and performance. For behavioural intention, the idea of social influence and conducive circumstances turned out to be irrelevant. It was also discovered that students' behavioural intentions to use e-resources are somewhat influenced by age, gender, computer experience, and discipline. To encourage students to use e-resources, the study advised the institution's administration to work with the library and teaching staff.

In a similar vein, Piniga and Cleopa Phir's (2017) study looked at students' attitudes about e-resources in Zimbabwean public university libraries. The study's findings suggest that social influence, price value, and habit are the most significant elements influencing one's intention to use electronic resources. The intention to use e-resources was also found to be significantly influenced by hedonic incentives and performance anticipation. Awwad and Al-Majali (2015)

conducted a study to explore the factors influencing user behavior towards electronic library services in public Jordanian universities. They found that the intention to use electronic library services depends on performance expectancy, effort expectancy, and social influence. Furthermore, students' actual use behavior is influenced by facilitating conditions and their intention to use these services.

In another study by Masrek and James (2016), the researchers examined factors predicting students' satisfaction with digital libraries in the context of academic web digital libraries (DL). Their findings showed that information quality, system quality, service quality, perceived usefulness, perceived ease of use, and cognitive absorption significantly contribute to students' satisfaction with the digital library.

On a different note, the Alotumi (2022) study employed a modified version of the extended unified theory of acceptance and use of technology (UTAUT2) to investigate factors influencing graduate students' behavioral intention to utilize the Google Class (GC) platform. The study's results, analyzed using PLS-SEM, indicated that habit played a critical role in determining students' behavioral intention towards the GC platform, and it was influenced by facilitating conditions and hedonic motivation. Additionally, the study revealed that a supportive environment was a significant factor impacting graduate students' behavioral intentions. However, the study did not find direct effects of performance expectations, effort expectations, social influence, enabling circumstances, or hedonistic incentives on students' behavioral intention.

3.6 Competencies of library professionals in marketing e-resource.

In the wake of the speedy growth of EIRs in academic libraries and given the rapid pace at which technology used to manage and disseminate these resources changes year after year, it is imperative to give premium to the competencies required of library professionals to function within the electronic resource environment. There is a need for a renewed focus on enhancing the skills,

competencies, and attitude-based competencies of library professionals to enable them to function appropriately within the electronic information environment (Sutton & Collinge, 2018:72). Different studies (Olorunfemi & Ipadeola, 2018; Mohammed, 2019) have examined the competencies and skills requirements of library professionals to market EIRs to patrons in the digital environment.

In Ghana, Mohammed (2019) investigated the marketing of library and information resources and services in academic institutions. The study emphasised the need for marketing interventions in academic libraries to promote user awareness and patronage of information resources. The findings revealed inadequate ongoing marketing interventions and a lack of required competencies on the part of the library staff, coupled with a lack of funds and facilities to undertake marketing activities. The study recommended that marketing policies and plans be put in place, as well as training for library staff and the provision of needed funds and facilities for marketing activities.

According to Sutton and Collinge (2018:72), competency refers to the individual characteristics that influence an individual's performance and behavior in the workplace. In the context of library marketing, Sutton and Collinge highlighted the significant impact of staff competency on various aspects of marketing. These competencies include transparency and dynamism in library administration, fostering positive and closer relations with users, encouraging innovation in library and information services, promoting organizational development, delivering quality-based library and information services, fostering effective teamwork, boosting self-confidence among library professionals, maintaining a flexible and adaptable attitude, and building strong interpersonal relations.

In a similar study by Olorunfemi and Ipadeola (2018), it is argued that librarians must possess a diverse set of competencies to effectively market library and information services. Key competencies highlighted in this study include good communication and interpersonal skills to engage with users effectively, knowledge of information technology to navigate digital resources

and platforms, and the ability to evaluate and promote library services to meet users' needs and expectations in an ever-changing information landscape. These competencies are crucial for librarians to succeed in the dynamic field of marketing library services.

According to Sutton and Collinge (2018:72), library professionals must not hesitate to acquire innovative skills; otherwise, they risk becoming irrelevant in their fields and face tough competition for employment from professionals in other disciplines like engineers, IT specialists, and scientists. To thrive in rapidly changing Electronic Information Resources (EIRS) environments, library professionals must adapt swiftly, embracing diverse skills, new thinking, and broader perspectives. In addition to educational qualifications, modern library professionals require a set of soft skills and competence to deliver the right information to the right users at the right time (Sutton & Collinge, 2018).

For effective marketing of library services, librarians must possess vital skills, including effective communication, customer service techniques, and the ability to conduct market research. Staying updated with the latest developments in the field is crucial, and ongoing training and active participation in professional associations and events are essential in achieving this goal (Olorunfemi & Ipadeola, 2018).

Library administrators play a role in ensuring staff's readiness for effective marketing. They should provide appropriate induction programmes to equip staff with customer service techniques, and continuous training should be provided to keep them up to date. Patil and Pradhan (2014:254) emphasise that librarians should possess excellent public relations skills and the ability to articulate ideas clearly and effectively. Furthermore, librarians should be competent in conducting market research to understand users' information needs. Joining professional associations and actively participating in conferences and workshops is highly encouraged, as it helps librarians stay informed about the latest trends and best practises in the field.

Sutton and Collinge (2018) emphasised that library personnel require specific professional knowledge and skills to market and attract users to the library effectively. These include:

1) Perception of user needs and ability to obtain feedback from users: Library personnel should have a deep understanding of the needs of library users and be able to obtain feedback from them to improve library services.

2) Knowledge of various marketing strategies for promoting information skills: Library personnel should be knowledgeable about different marketing strategies that can be used to promote information skills to potential users.

3) Technical knowledge: Library personnel should have technical knowledge and be able to use various electronic resources, databases, and the internet to provide better services to library users.

Also of much importance to the library professional are information literacy skills. Henninger's (2021:3) research emphasised the necessity of information literacy, its significance, and the ramifications of undervaluing it in the contemporary period. The importance of getting ready for life in the digital age is emphasised by Fraillon et al. (2020:297) in the international report of the IEA International Computer and Information Literacy Study 2018. The study conducted by Israel and Nsibirwa (2018) equally highlighted the importance of information literacy abilities when utilising electronic information resources.

In a similar vein, digital literacy is a critical ability for successfully accessing and utilising electronic library resources, according to numerous researchers (Oseghale, 2023; Osinulu, 2021; Omosebi & Omosebi, 2020). The usage of electronic resources by graduate students studying humanities at the Kenneth Dike Library, University of Ibadan, Nigeria, and the necessity for digital literacy abilities were investigated in the Oseghale (2023) study. According to Osinulu's (2021) report, library professionals working in state and federal universities in Ogun State, Nigeria, were required to possess digital literacy competencies to facilitate self and user access to the available

resources. Furthermore, Omosebi and Omosebi's (2020) study discovered that information literacy is a prerequisite for using e-library resources for undergraduate students in southwest Nigeria.

The use of ICT in organisations is critical for maximising learning opportunities, reducing poverty, and promoting self-sufficiency. By leveraging ICT, librarians can enhance their operations, improve their decision-making capabilities, and offer training and development opportunities to their users (Ayoku & Okafor, 2018). Abubakar and Olayode et al.'s (2023) study emphasises the importance of information and communication technology (ICT) for the library. They recognise ICT as a valuable tool for matching existing learning needs with learning resources, and they stress that ICT should be used to maximise people's learning opportunities for improving their living conditions, reducing poverty, and stimulating self-sufficiency. Considering the eminent competencies required of library professionals to influence optimal usage of subscribed EIRs, their digital literacy skills, as identified by Horsfall's (2020) study, are particularly important. Delaney and Bates's (2018) study contend that librarians must be knowledgeable about critical technologies and can compare different versions of software to figure out which will best meet their patrons' needs. This is essential because the technology landscape is constantly evolving, and new versions of software and hardware are released frequently.

Okeji et al. (2019:311) discovered that more than half of the librarians polled rated their digital literacy skills as moderate in a study aimed at investigating the digital competencies of library professionals in Nigeria. Oseghale (2023) also emphasised that the major digital literacy skills required of information professionals were skills in the usage of the internet and knowledge of social networking via the use of social media apps on mobile and smart devices. Personal competencies included effective listening, oral presentation, interpersonal relationships, communication with people, and instruction handling, whereas technology skills focused on computer use and information access and use. The general skills cover online searching techniques,

customer care, and relationship skills (online reference services and reference interviews). These competencies will promote awareness and the use of e-resources.

Having these professional knowledge and skills can help library personnel develop effective marketing strategies and attract more users to the library. By understanding the needs of library users, obtaining feedback from them, and being knowledgeable about marketing strategies and technical skills, library personnel can promote the library's services effectively and improve user satisfaction.

3.7 Innovative strategies for marketing e-resources to students

Given the tremendous benefits of marketing to libraries, many university libraries are now using marketing concepts (AlAwadhi & Al-Daihani, Citation 2019; Ofori et al., 2020). In their research, Dzandza and Akussah (2018) found that most library employees in Ghanaian higher institutions knew little about how to market and promote their services. In this regard, the authors suggested, among other things, that marketing sessions be included in professional development programmes for librarians. Kodua-Ntim and Fombad (2020) advised librarians to use marketing and advocacy methods to promote their institutional repositories as they worked to build plans for the adoption of open-access institutional repositories in universities in Ghana.

Also, in the Asante et al. (2020) study, the authors discovered a substantial positive association between the marketing of library services in Ghana and marketing principles such as personal selling, sales promotion, public relations, and advertising. The authors went on to argue that marketing should be covered in training and other professional development programmes for librarians. In a similar vein, Martin-Yeboah et al. (2018) made reasons in support of libraries having marketing librarians and a strong marketing team to spearhead the marketing initiatives of the respective libraries.

Despite the strong links between marketing their resources and the success of their mandate of information provision, it was found that none of the selected libraries in Ghana in Agyei and Nglube's (2022:143) study, which aimed to understand the methods for marketing library services in Ghana, had a department dedicated solely to marketing library services, nor did they have a budget set up specifically for that purpose. It was further discovered that none of the libraries studied had a budget set up specifically for the purpose of marketing, and libraries had consistently only implemented an unofficial marketing plan.

The study recommended the creation and subsequent resourcing of marketing units in libraries. Agyei and Nglube (2022:144) argued that although library and information science researchers in Ghana have recently shown a keen interest in the application of marketing concepts in library practise, it is unclear which marketing strategy these researchers support and which marketing strategy these academic libraries in Ghana employ. As a result, the current study explores cutting-edge tactics that improve the marketing of electronic resources at Ghanaian technical universities.

It is important, however, to highlight that various writers have emphasised the necessity for creative solutions in the provision of information resources in academic libraries (Aslam, 2018; JOLSELT, 2020:29; Joo, Choi, & Baek, 2018:940). This is especially important now because the current generation of users is allegedly becoming less aware of library resources (Mohammed & Ibrahim, 2021; Mohammed & Habib, 2019); thus, librarians should professionally and technically develop innovative initiatives for marketing their resources and services. Sutton and Collinge's (2018) study contend that the academic library should prioritise cutting-edge technologies and a user-friendly interface that meets patron expectations.

In the University of Hong Kong, Cheng, Lam, and Chiu's (2020) research, for instance, examined the growing use of social media sites like Facebook as instruments for marketing strategies in academic libraries. Social media is a tool that libraries use to connect with their patrons and actively engage them with collections, programmes, and services. The purpose of the study was to

determine how well the University of Hong Kong Libraries (HKUL) use social media, especially Facebook, as a marketing tool. The study evaluated the opinions of both faculty and students. This study covers the prevailing condition of HKUL's Facebook page, elements that drive user interest and engagement, and suggestions for better approaches to address the changing demands of library patrons. As noted in the findings, libraries use social media to establish a rapport with patrons and encourage active engagement with collections, services, and events. Other university libraries looking to improve the way they use social media platforms for engagement may find value in the findings of this study.

From the literature, it is evident that some of the key issues discussed in contemporary academic library administration literature place emphasis on the integration of new technologies, the adaptability of library staff to evolving trends, the importance of community engagement, and, notably, the extent to which libraries effectively market their services (Nicholas et al., 2018:108; Nicholas, 2018). These factors are recognised as critical elements that can significantly impact the effectiveness of academic libraries in fulfilling their roles and making meaningful contributions to the broader educational environment (Nicholas, 2018).

3.7.1 Collection development policy (CDP) for e-collections

A Collection Development Policy (CDP) is a written document that outlines the goals and evaluative criteria used to make informed decisions about adding materials to a library's collection. In the context of the electronic environment, the collection and development policy for electronic resources involves selecting appropriate tools and processes, establishing principles for managing electronic resources, and allocating the budget for the acquisition of e-resources (Baruah and Chanda, 2022:1). In essence, the CDP serves as a strategic guide that helps librarians make well-informed choices about which electronic resources to include in the collection, ensuring that the library aligns with its mission and serves the needs of its users effectively in the digital age.

Okogwu and Ekere's (2018) study found that 80.2% of the university libraries under consideration had not implemented formal collection development policies for their electronic library collections. The authors advised libraries to create and implement written electronic resource CDPs that would act as a manual, references, and a point of continuity for librarians working on e-resource acquisition. Additionally, it is important to regularly analyse electronic resources while considering pertinent aspects to identify those that are being used to their fullest potential.

Studies on the collection development policy for electronic resources in university libraries (Srivastava, Parabhoi, and Sonkar, 2016; Okogwu and Ekere, 2018; Baruah and Chanda, 2022; Natarajan, 2018; Okogwu and Ekere, 2018) have advocated for the content of the policy to clearly describe the collection development goals, selection criteria, budget and resource allocation, licensing and access, collection evaluation and assessment, collaboration and consortiums, user education and support, policy review, and policy dissemination. The policy may need periodic review to fit the requirements and specifics of the university library to be effective. Additionally, it should be frequently reviewed and updated to consider user demands, curricular changes, and technological improvements.

3.7.2 Planning and strategic ways of marketing planning

Academic libraries currently face various challenges, and one of the critical areas needing improvement is their marketing efforts. To thrive in the ever-evolving landscape and meet emerging trends, academic libraries must adopt robust marketing strategies and continuously promote their services in the twenty-first century. Crafting a comprehensive marketing strategy is essential to identifying and highlighting core resources and facilities that deserve attention (Ndungu & Gikandi, 2018). As emphasised by Nicholas et al. (2018) and Ofori et al. (2020), a strong marketing plan plays a pivotal role in strategic planning. It is worth noting that marketing planning is a subset of a broader concept known as strategic planning, as described by Nagra (2017:115). Fraser-Arnott (2023:1) identified that the most prevalent marketing themes that

emerged from the COVID-19 pandemic are: social media, marketing strategies and planning, library education and orientations, marketing tactics, and attitudes of libraries.

Developing a library marketing plan (Nagra, 2019:115) or a policy (Ofori et al., 2020:15) is the outcome of strategic planning, enabling the library to assess the specific needs of its key user groups, such as students, faculty members, and staff. This plan should include specific goals and strategies aimed at informing the university community about the abundance of library resources and services and empowering community members to access a wide range of valuable resources and support. By implementing effective marketing plans, academic libraries can rise to the challenges they face and thrive in the dynamic educational landscape of today (Ndungu & Gikandi, 2018).

The reports of several studies (Ofori et al., 2020; Aslam, 2018; Kennedy, 2014) have explored how library professionals can formulate their own marketing plans, which could serve as the foundation for launching successful marketing campaigns and position library staff for marketing electronic resources to students. It is critical to develop a marketing strategy for academic libraries, especially given the current situation where users are becoming increasingly unaware of the content and value of the library's resources and services and thus do not want to visit the library building because they want to access the library's resources from outside the building (Aslam, 2018).

Ofori et al. (202015) and Merande et al.'s study (2021:10) underscored the need for libraries to develop policies for the collection and management of electronic resources. The policy should be dynamic to accommodate any future changes in the monitoring and evaluation of e-resources, and the role played by the library's ICT should be highlighted. The policy should establish guidelines for the selection and use of e-resources, addressing user needs while reflecting the library's values and beliefs about information provision. Merande et al.'s 2018 study recommended the teaching of the basic search skills required of the user and education on various access policies as well.

Regular library training sessions can significantly enhance awareness and utilisation of available electronic resources. To achieve this, the library team can employ a range of training methods, including one-on-one sessions, virtual training, scheduled workshops, and accommodating training requests. Involving faculty, staff, and students from various courses ensures a broader reach and a better understanding of the resources, thereby empowering users to make the most of the electronic materials and services provided by the library. By consistently offering diverse training opportunities, the library can foster a well-informed and technologically adept community of users, contributing to the overall success and effectiveness of the library's electronic resource offerings.

3.7.2.1 Strategic marketing planning for e-resources

The lack of strategic marketing planning and a lack of marketing policy to guide the marketing practises of TU libraries were among the key findings of the study. The research revealed that library staff did not take marketing seriously as an aspect of their job performance. To address this, the study recognised the need for developing a strategic marketing plan for e-resources to guide the library's campaigns for marketing these resources and services. These findings are consistent with previous research, including Agyei and Ngulube's (2022) study, which found that Ghanaian academic libraries lacked formal policies or structures to market their products and services.

Additionally, Ndungu and Gigandi's (2018) research indicated that while Kenyan academic librarians were conducting some marketing activities, they were not taking a strategic marketing approach. Bhardwaj and Jain (2016) also discovered that libraries lacked a marketing culture, although librarians recognised the value of marketing to their patrons. Stoupenos and Woods (2023:13) and Gurav (2023) recommended the establishment of a formal, user-centric marketing plan for libraries, with regular allocation of funds to support marketing efforts, to ensure optimal utilisation of library resources and services. The study's findings reinforce the need for written marketing plans to guide the library's campaigns for marketing e-resources and services in TU libraries. This is in line with Jesubright and Saravanan's (2019) recommendation that a significant marketing effort is required for e-resources in today's ever-changing technology environment.

Using a model based on the author's experience, Nagra's (2017) study analysed the literature on the goal and justifications for creating a marketing strategy and provided guidance on how to create a strategic marketing plan to maximise the library's return on investment (ROI). According to Johoran and Somaratna (2021), a marketing strategy for library resources involves the methods and pathways to achieve the established goals and objectives. To effectively market e-resources to students, academic libraries have a range of tactics at their disposal. In view of this, the study revealed strategies for marketing e-resources to students.

Nagra's (2017) study also explored ways to develop a strategic marketing plan to maximise the return on investment and enhance the discovery, utilisation, and access to electronic resources in all formats. Having a marketing policy and plan for e-resources can provide numerous benefits, including the achievement of goals. Developing a written plan can assist librarians in systematically implementing strategies and related components with clear goals, objectives, and evaluation methods. The plan can be consulted and referred to by team members, promoting consistency and collaboration. The plan should be regularly updated to accommodate changes in technology, new subscriptions, and emerging academic programs.

Researchers, including Nagra (2019), Nagra (2017), Wu (2021), Ofori et al. (2020:15), Horsfall (2020), Atuase, and Maluke (2022), recommend a marketing plan to accumulate institutional memory and promote focus on goals and objectives. A marketing plan inspires commitment, better coordination, and communication among team members, creating a unified approach to achieving set goals with significant performance standards.

A marketing plan for e-resources in a library can either be a separate plan or a section of the library's overall marketing plan. A simplified model, originally developed by Grede (2005) for business marketing and modified by Nagra (2017) in the context of libraries, can be customised for use by any library. Navara (cited in Nagra, 2017) identified several fundamental components

of a strategic marketing plan for e-resources, including an outline, an executive summary, a situational analysis, objectives, strategies, tactics, a budget, staff, assessment, and future steps.

The essential components of a strategic marketing plan for e-resources in academic libraries are outlined in Figure 1, adapted from Nagra's (2017:118) work. Each component is elaborated in detail in the following sections, and the model illustrates a progression from the outline to future steps.

1) **Outline:** The outline section of a strategic marketing plan for academic library e-resources serves as an index and table of contents for the plan. It outlines the main headings and sections of the marketing plan, providing an overview of its contents.

2) **Executive summary:** The executive summary of a strategic marketing plan for academic library e-resources is a concise summary of the plan, outlining its purpose, goals, and strategies. It should include background information on the library's e-resources, its current situation, and any challenges or opportunities it faces. The executive summary should also provide an overview of the entire plan and its sections, including the situational analysis, objectives, strategies, tactics, budget, staff, assessment, and future steps. It is essentially a snapshot of the complete plan.

3) **Situational analysis:** The Situational analysis section forms the foundation of the strategic marketing plan for academic library e-resources. To describe the current situation, one of the methods recommended by Grede (2005) is SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, although it may not represent the complete situation. Grede (2005) suggests gathering information based on three factors: "US," "THEM," and "ENVIRONMENTAL SCAN," depending on the country where the library operates. In the case of the academic library e-resources marketing plan, "US" represents the library, while "THEM" refers to the stakeholders. An environmental scan may involve assessing the institutional setting's background and

current state, community college library enrollments, library collaborations, e-resource collection, the college's technology infrastructure, and the library's contributions to academic success.

4) **Objectives:** The objectives section of the marketing plan outlines the library's desired outcomes and how to achieve them. The objectives should be specific, measurable, achievable, relevant, and time-bound (SMART). The objectives could include launching new e-resources in specific disciplines, increasing usage statistics for e-resources, promoting unique features of an e-resource, and so on. The objectives should have a clear timeline for implementation and evaluation to ensure they are quantifiable and measurable (Jesubright & Saravanan, 2019).

5) **Strategies:** Strategies are the means of achieving the defined objectives in a marketing plan. There are various routes available within libraries and academic units to accomplish these objectives strategically (Ndungu,and Gikandi,2018). For instance, the following could form the strategies: presenting a clear image of quality service to students through interactions with library team members, participating in Freshman Initiative programs, offering College Ready/College Prep Workshops, enhancing the library's presence on college TV and radio shows, conducting library instructional classes, participating in student orientations and admission open houses, and collaborating with various student clubs (Stoupenos & Woods, 2023).

6) **Tactics:** Tactics are the specific actions that are taken to achieve the objectives set in the marketing plan. According to Jesubright and Saravanan (2019), tactics can be implemented using traditional media, digital media, and social media, all of which have the potential to connect with a cohesive user group, such as students or faculty who use the library. For example, libraries can use social media to promote their services and facilitate student-to-student interactions. There are both cost-free and cost-based tactics available for marketing library e-resources, and the library's budget will determine

which tactics it can afford to use. Investing time, energy, and resources in creative ways can lead to excellent results.

7) **Budget:** The budget section of a strategic marketing plan for academic library e-resources should include the cost of the resources that the library is purchasing, and the expenses associated with implementing the plan. When planning the budget, it is important to consider the cost of employing new staff, if necessary, and to include it in the annual budget for e-resources. Wu (2021) reported that her library was able to receive new staff lines because of their marketing plan. If the library is not successful in obtaining all the requested funds, it is advisable to work towards requesting them again in the next cycle. Once the funds are allocated, a continuous flow of funds for subsequent years can be expected, barring any budget cuts.

8) **Staff:** To achieve pre-defined goals, a marketing plan serves as a unified approach and a written document for the library team to consult. It ensures that everyone on the team is working towards the same objectives. However, as marketing plans require a collective effort to reach stakeholders, Kennedy (2014) recommends forming a marketing team in the library to work on the plan, as it is not feasible for one individual to do all the work. Additionally, it is important to provide training and cultivate relationships with academic departments and other units of the institution to promote and market e-resources.

9) **Assessment:** To ensure the success of a marketing plan, it is crucial to evaluate and assess its effectiveness. One approach to assessment is to conduct surveys on the library website to gather both qualitative and quantitative feedback on e-resources. Additionally, usage data from the library website and vendor-supplied data can provide insight into the success of the marketing plan in meeting its objectives. The objectives themselves should be measurable and well-defined from the outset to facilitate effective assessment. Ultimately, the feedback gathered through assessment should be used to

inform future marketing efforts and refine the marketing plan as needed (Ndungu,and Gikandi,2018).

10) **Future steps**: It's important to continuously review and revise the marketing plan based on feedback and results. This ensures that the library is always adapting to the needs of its users and staying relevant in the ever-changing landscape of academic resources.

A strategic marketing plan for the academic library's e-resources is written to guide the library in its efforts to increase user knowledge of the resources and to highlight their features so that students could maximise their academic performance. This will increase the likelihood that users will be aware of e-resources and will highlight e-resource characteristics so students may maximise their usage to enhance their academic performance. The key elements of a marketing strategy for university libraries' electronic resources are depicted in Figure 3.1 (Inspired by Grede 2005; Nagra, 2017)
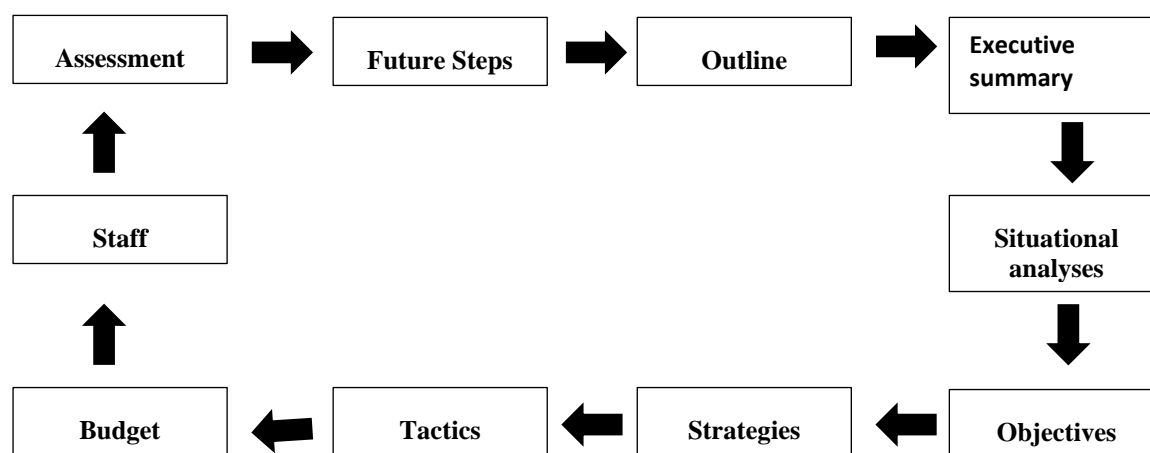
Figure 3.1: Basic Elements of Strategic Marketing Plan for e-resources (Nagra, 2017; Grede, 2005).

The importance of a strong marketing plan for e-resources in academic libraries cannot be overstated. A well-crafted marketing plan provides numerous benefits for all stakeholders involved, including the library and the wider institution. By establishing clear goals and objectives, a marketing plan helps to build institutional memory and ensure that everyone is working towards the same objectives. It fosters a sense of commitment, better communication, and coordination

both within and outside the library, leading to significant performance improvements. Furthermore, the implementation and assessment of a marketing plan helps to increase awareness of e-resources among stakeholders, leading to increased usage and value for money justification to management. By measuring success rates against pre-defined objectives, libraries can make informed decisions about future steps for improving their marketing efforts, resulting in even greater success. Overall, a well-designed and implemented marketing plan is essential for academic libraries looking to promote their e-resources effectively and efficiently. By continually evolving and aligning with the changing needs of patrons, the academic environment, and the nature of e-resources, libraries can ensure that their marketing efforts remain relevant and impactful in the long run.

3.7.3 Marketing e-resources via contemporary and emerging Web 2.0 tools.

With the advent of contemporary information and communication technologies, particularly Web 2.0, society has witnessed an overwhelming proliferation of information. The findings of several researchers (Ofori et al., 2020; Johoran & Somaratna, 2021; Aslam, 2018; AlAwadhi & Al-Daihani, 20192:28) emphasised the need for libraries to adopt cutting-edge and innovative web 2.0 and social media technologies for the marketing and promotion of their information resources to attract optimal patronage from current and prospective users. These technologies have revolutionised the delivery and marketing methods of information sources and services (Bhardwaj and Jain, 2012:121).

Several studies, including Almeida and Dyszlewski (2021), Rahoo et al. (2018), and Baba (2019), have highlighted the positive impact of integrating Web 2.0 tools such as blogs, wikis, and social media networking sites on library marketing efforts. These tools have facilitated two-way communication with users, created knowledge bases, and offered subject guides. Social media platforms like Facebook and Twitter have become popular choices for promoting library services, while instant messaging, RSS, and podcasting have also been effectively utilised. Findings from previous research by Cheng et al. (2020), Chanetsa and Ngulube (2016), and Boateng and Quan

(2014) equally emphasise the importance of Web 2.0 technologies in promoting library services and resources.

Cheng et al.'s (2020) investigation goal was to actively engage user communities with library collections, services, and activities. Social media platforms such as Facebook have gained widespread popularity as valuable tools for various organizations, including libraries, in their marketing practices. The findings indicated that libraries nowadays leverage social media with the intention of cultivating relationships with their users. Through these platforms, libraries aspire to create a dynamic and interactive space that fosters connection and communication between the library and its patrons (Cheng et al., 2020).

Furthermore, Horsfall's (2020:13) study delves into the effective marketing of libraries and information services in the digital age, with a primary focus on librarians marketing themselves and their services. The study emphasises the application of information and communication technology (ICT) through web 2.0 tools, including WhatsApp, email, Facebook, YouTube, Twitter, LinkedIn, and telephone, among others. The objective is to leverage these platforms to connect with clientele and meet their information needs, both on-site and remotely, thereby fostering sustainable development.

According to the Hamad, Farajat, and Hamarsha (2018) study, leveraging social media can prove to be a highly effective and efficient strategy for promoting your brand and showcasing the services and collections of your law library. Whether you choose to engage with the law school community through platforms like Facebook, Twitter, or Instagram, the key lies in delivering original content that resonates with your audience (Hamad et al., 2018).

Almeida and Dyszlewski (2021) state that there are numerous useful technologies at the disposal of librarians to help them promote the excellence of library resources and services. With the widespread availability of smartphone capabilities, capturing high-quality photos and videos is

easily achievable, thanks to filters and video editing apps (Almeida & Dyszlewski, 2021). Nowadays, several libraries use blogs as a great way to have in-depth conversations about a variety of subjects, and you may share these entries on your social media accounts. Videos are an appealing tool for a creative exhibition of your staff and library, and you can easily produce and edit them right on your smartphone. Several low-cost or free video editing software programmes, such as Windows Video Editor, Apple iMovie, and YouTube Studio Editor, can facilitate the process. One can upload videos on YouTube and create links that are easy for users to click on. These are all ways to enhance visibility by incorporating such photos and videos into the library's social media strategy. Also, ensure that the visual content aligns with and enhances the library's brand image. Almeida and Dyszlewski (2021) suggested that the library can make effective use of hashtags to connect your posts with broader conversations or support your audience with relevant hash tags.

Furthermore, several academics have examined how Web 2.0 technologies are used, such as Ofori et al. (2020:15), Horsfall (2020), and Atuase & Maluke (2022:11). The results of their study highlight the importance of academic libraries creating a presence on social media networks, with Facebook and Twitter being the most popular platforms. Furthermore, it was recommended that academic libraries consider the adoption rates of other Web 2.0 technologies, including wikis, blogs, RSS, IM/Chat, podcasts and podcasting, social bookmarking and tagging, and podcasts.

Likewise, Aslam (2018) noted that library patrons were increasingly using search engines to access information rather than visiting library buildings, which has led to a decline in awareness of the value of library resources. To address this, librarians need to design professional library websites that are optimised for marketing purposes. This requires collaboration between system librarians, marketing teams, and web designers to create a library website that is not only easy to use but also visually appealing and engaging. Further, other studies (Kennedy, 2014; Merande et al., 2021) indicated the need for libraries to create webpages dedicated to the promotion of e-resources. Issues regarding e-resources should be prominently displayed on such e-resource promotion webpages as

well as institutional and library websites (Aslam, 2018:8). By having dedicated webpages and web links for electronic resource access, TU libraries can effectively market their e-resources to students, increase their usage, and create awareness among library patrons about the resources available to them. This, in turn, will lead to higher engagement and usage of electronic resources, which are essential for the success of academic institutions.

Various effective strategies for increasing awareness and usage of e-resources in libraries have been explored in the literature. Stoupenos and Woods (2023) suggest the use of digital screens in high-traffic areas, creating URL links on library computers' desktops, and sending targeted SMS messages. Additionally, the adoption of Really Simple Syndication (RSS) feeds provides regularly updated content to users, further enhancing awareness and utilisation of e-resources. Yi's (2016) study emphasises the contemporary approach of reaching students directly on their mobile devices through targeted SMS messages, offering a unique and personalised method of marketing e-resources. Rysavy, Michalak, and Daly (2021) examined library marketing during the COVID-19 pandemic, utilising email, and text messages to inform the college community about the library's eBook collections and promote online resources, tools, and virtual programs.

Jones and Harvey's (2019) findings underscore the efficacy of digital display technologies in projecting library resources such as e-books, online journals, and databases. Incorporating URL links on the login interface of library computers addresses student underutilization of subscribed electronic databases. By enhancing accessibility and providing training on resource usage, students are more likely to engage with these databases.

The importance of dedicated webpages and web links for electronic resource access is highlighted by the study's findings. Utilizing the institution's website and library webpage as starting points, directories, links, or URLs to e-resources and instructional videos can be created to guide students on accessing these valuable resources (Merande et al., 2021). This comprehensive approach ensures a multifaceted strategy to effectively market e-resources to students.

3.7.4 Marketing e-resources via websites

Several studies (Fraser-Arnott, 2020; Eze et al., 2018; Bhardwaj & Jain, 2012:121) assert that a library's website is essential for disseminating the institution's goals and objectives. It acts as a useful tool or platform for announcing the library's annual plans, new initiatives, and additions. Creating a website enables users to receive resources they have paid for in a methodical manner. The study conducted by Ifijeh and Yusuf (2020) revealed that responsive library website design and adoption, blended librarianship model adoption, and social network use are among the best practises that should be implemented to ensure that libraries in Nigeria remain relevant in the face of the impending shift in teaching methodologies following the COVID-19 pandemic.

Madu and Onuoha (2022) and Waral (2020) both stressed how crucial it is for libraries to have a website. In addition to planning orientation sessions, promoting materials, and keeping in touch with individuals, a website can be a useful tool for informing users and promoting library goods and services. In a study conducted by Rahoo et al. (2018), the use of the website and webpages of the library for marketing and promotion of library services in higher education institutes was seen as very viable. The study found that academic library websites and webpages play a significant role in promoting library services for research and teaching. However, libraries have not fully utilised the potential of contributing to scholarly communication through institutional repositories and open access measures. Taking such initiatives is essential for libraries to remain relevant and visible among their users. By leveraging their websites effectively, libraries can better serve their users and enhance their overall marketing and promotional activities.

However, studies conducted by Yi (2016) and Mubofu (2019:1) found that many libraries are not fully utilising their websites for marketing library resources and services. The majority, of websites lack features like online literacy, online help, and copyright documents. Additionally, very few libraries conduct online surveys or use their websites for networking.

Madu and Onuoha's (2022) findings indicate that library websites in Nigerian universities perform well in terms of marketing features related to visibility, information dissemination, consultation services, and the provision of online resources. However, the study reveals a less satisfactory performance in the areas of networking and online services. The study concludes that while Nigerian university library websites exhibit moderate marketing features, there is a pressing need for improvement, particularly in leveraging networking opportunities and enhancing online services. To ensure the optimal utilisation of these websites for marketing purposes, the study recommends several measures. One key recommendation is the employment of IT experts with a background in librarianship to handle the development and management of university library websites. This strategic move is intended to facilitate the integration of all relevant marketing features and ensure continuous improvement over time.

In a related study, Muneja's (2023) study focused on evaluating the utilisation of web-based tools for marketing e-resources in Tanzanian university libraries. The findings revealed that the majority, of libraries in the study had information about their library resources linked to their institutional websites. The findings further revealed that while the majority, of university libraries displayed a list of e-resources on their websites, a critical observation was made regarding the relevance and currency of the displayed content. The study noted that a significant portion of the displayed e-resources were not up-to-date and, in some cases, irrelevant. The study, in a nutshell, illuminated the current landscape of web-based tools used for marketing e-resources in Tanzanian libraries, emphasising the prevalence of social media, challenges in content relevance and currency on websites, and variations in providing guidelines for utilising e-resources among different types of universities.

3.7.5 Relationship marketing (RM)

According to Bhardwaj and Stain (2016:120), relationship marketing (RM) is a strategic approach focused on building and nurturing strong connections with library users. It emphasises fostering

relationships not only among library users but also between users and library staff. By adopting RM strategies, libraries can effectively retain existing users and cultivate loyalty among staff members. Utilizing information and communication technology (ICT), RM enables libraries to establish easy and efficient communication channels with both current and potential users in society (Bhardwaj and Stain, 2016:120).

A study conducted by David and Sagun (2012) at the Rizal Library of the Ateneo de Manila University suggests that libraries should implement relationship marketing strategies with students and faculty. These strategies aim to increase the visibility of library resources and services while fostering open lines of communication. Similarly, Bhatt and Gupta (2018) recommend the adoption of RM approaches by library professionals, especially when marketing digital collections. By prioritising relationship building and communication, libraries can enhance their effectiveness in reaching and engaging with their user communities.

To adopt the RM approach, libraries may have to avail themselves of the guidance of the 7Ps Marketing Mix for better guidance in establishing and managing relationships with students regarding the marketing of e-resources. It is evident from reading the writings of McCarthy (1960), Zeithaml et al. (2013), Kotler et al. (2018), Aslam (2018), Agyei and Ngulube (2022), Patil & Pradhan (2014), that the 7Ps Marketing Mix Model has consistently been used as a reliable model to direct the marketing initiatives of library resources and services in recent years. Librarians can use the 7Ps Marketing Mix as a guide by keeping the following in mind when they intend to market their resources to their users:

1) Product: The librarians should ensure that the e-resources are of high quality, relevant, and meet the needs of the students. They should also ensure that the e-resources are up-to-date and easily accessible.

2) Price: Librarians should ensure that the e-resources are priced affordably for the students. They should also offer value-added services, such as free trials and discounts to encourage more students to use the e-resources.

3) Place: Librarians should ensure that the e-resources are easily accessible to the students. This can be achieved by providing access to the e-resources on different platforms, such as the library website and social media platforms.

4) Promotion: Librarians should develop an effective promotion strategy to create awareness of the e-resources among the students. This can be achieved through various means, such as social media, flyers, and posters.

5) Physical Evidence: Librarians should ensure that the physical environment where the e-resources are accessed is conducive and welcoming to students. This can be achieved by providing comfortable seating arrangements, good lighting, and a quiet study environment.

6) User Satisfaction: Librarians should prioritize user satisfaction by collecting feedback from the students and addressing any concerns or issues that may arise. This will help to improve the quality of the e-resources and ensure that they meet the needs of the students.

7) Service Quality: Librarians should ensure that the e-resources are of high quality and that they are delivered efficiently and effectively. They should also provide excellent customer service to the students, such as prompt responses to queries and technical support.

Okon and Umoh (2014) proposed that libraries in the twenty-first century use the "7 Ps Marketing Mix" as a strategic framework to guide the process of marketing not only EIRs, but all information and library resources. Agyei and Ngulube's (2022) study identified seven significant themes, including product, price, place, promotion, physical evidence, user satisfaction, and service quality,

that should guide the marketing campaign initiatives of the library. Four of these themes were earlier validated by Kotler et al. (2018) and are consistent with five of the 7 Ps Marketing Mix Model variants used in the study. According to Kotler et al. (2018), a product is a tangible or intangible good that can satisfy customer needs. Libraries aim to provide the resources that users need and encourage customer loyalty. Librarians consult with faculty and students to determine the resources needed for the academic year. According to Kotler et al. (2018), the product is a physical or tangible good that can be sold, or a complex set of benefits that can be used to satisfy users' demands.

3.7.6 Mobile phone marketing

Users now find mobile phone marketing to be quite attractive, and mobile-based services are being used extensively (Pinigas, Cleopas & Phiri, 2018). Additionally, libraries have made use of this technology to provide services like library alerts, which allow for immediate responses and direct user engagement (Rivo & Umer, 2022). Tyagi (2019) emphasised the financial benefits of marketing library services and resources through mobile phones. Particularly, SMS-based systems have shown to be adaptable and reasonably priced means of meeting users' information needs.

According to the findings of Rivo and Žumer (2022), students perceive mobile devices as beneficial for accessing scholarly e-resources, but they also recognise certain restrictions. Students don't think mobile devices are appropriate for reading in-depth material, even though they are thought to be useful for instant access to e-resources. The study recommends that libraries develop a strategy for the development of engaging mobile services and their efficient marketing in view of the poor access library digital resources. This strategy seeks to improve how mobile users utilise library resources and addresses the apparent inadequacies that students have pointed out.

The results of Pinigas, Cleopas, and Phiri (2018) highlight the fact that the majority, of users in the investigated area (94.2%) had access to mobile phones as their primary e-resource instrument. The study demonstrates how little e-resources are used in the research sector. Therefore, the authors

propose that coordinated efforts by the federal and state governments are required to establish favourable technological conditions and offer opportunities for training.

In a related study by Nagi and Parmar (2021:487), it is emphasised that remote access offers easy access to a range of materials that the library subscribes to, simplifying chores for both patrons and library employees. The paper describes the steps needed to install MyLOFT and compares other remote access methods. The study highlights the benefits of real-time research synchronisation in mobile and online applications, allowing users to access materials whenever and wherever it is most convenient for them. Exclusive data consumption statistics are included since it is recognised that they aid in decision-making, especially since libraries spend a lot of money acquiring resources. Making the most of these reports guarantees that libraries get the most out of their investments.

Furthermore, Tyagi's (2019:124) research, which aimed to identify and forecast the major factors influencing students' choices regarding their use of electronic resources via mobile devices, found that system quality is the main factor that predicts whether mobile e-resources will be accepted. This is followed by perceived utility, information quality, service quality, and simplicity of use. The study's conclusions provide academic administrators and mobile service providers with insightful information that can be used to build strategies that encourage more students to use mobile e-resources.

3.7.7. Collaboration and partnerships with faculty

The finding of the study revealed the need for academic libraries to form collaborations and partnerships with the faculties. This can help libraries to leverage the networks and resources of their partners to promote their e-resources and services to a wider audience. The study found that academic libraries should form partnerships with the academic departments, research centers, to promote e-resources and services. Such Collaboration can help the library share its expertise and resources, as well as to pool their resources and efforts together to create innovative marketing

campaigns. Such partnerships can also lead to joint marketing initiatives and joint training programs, which can help to improve the awareness and use of e-resources among students. The findings of this study are consistent with previous studies (Merande et al., 2021; Anslem, 2018) which highlighted the need for academic libraries to collaborate with other institutions and organizations to improve the promotion and use of e-resources. These collaborations and partnerships should be formalized through memoranda of understanding (MOUs) or other formal agreements to ensure that all parties involved are committed to the joint marketing initiatives.

3.7.8 Outreach and exhibition programmes

It is important that the library devise innovative ways and a user-friendly system that library patrons expect when marketing their services and resources. When the university organises special events on and off campus, the university library must show interest in and participate in promotional events; if other departments use portable display booths at promotional events, the library should also use a portable display booth (Almeida & Dyszlewski, 2021). It is critical that libraries increase their efforts to promote library resources. When an institution organises a promotional event, librarians must be aware of it and show an interest in it. Anslem's (2018:13) analysis discovered that the librarians at the library declined the invitation to a university event since they had no interest in going. Anslem's (2018:13) point was that it is important librarians are aware of and show their interest whenever any department within the institution organises a promotional event. This suggests that the library should follow other departments' lead and deploy portable display booths for university events both on and off campus. This underlines how important it is for librarians to show that they are interested in going to marketing events to be invited to participate. Use the institution's website or library webpage as a starting point for marketing library resources, such as establishing and posting directories to e-resources, linking to e-resources, creating, and posting instructional videos on how to access e-resources from the library, and so forth.

Another strategy libraries could use to sell their resources to students is exhibition (Aslam, 2018). Exhibitions provide excellent opportunities for librarians to collaborate with members of the university community, particularly faculty, students, and researchers, while also entertaining, educating, informing, and promoting the libraries' e-resources and facilities. Furthermore, libraries should develop outreach programmes that allow them to take advantage of events such as seminars, symposia, sporting activities lectures, debate competitions, local campus radio broadcasts, hall week celebrations, and students' representatives' (SRC) week celebrations to mount exhibitions to promote the use of e-resources. The literature review highlights the importance of marketing e-resources in academic libraries to influence optimal student usage.

The next section looks at the conceptual framework to provide a foundation for the study and help ensure that the research is well-grounded within the field of this research.

3.8 Conceptual framework

Kumar (2011:54) emphasizes that the conceptual framework is derived from the theoretical framework and serves as the foundation for a research problem. It encompasses the definitions of key terms and concepts utilized in the study, outlines the research questions to be addressed, and incorporates the underlying assumptions (Hall 2010:19).

In the context of this study, the conceptual framework is built upon the theoretical foundation provided by the Technology Acceptance Models (TAM1), TAM2, TAM3, and the Unified Theory of Acceptance and Use of Technology (UTAUT). The concepts described in the study are also drawn from human and consumer behaviour management theories and models, which include the social marketing theory and the 7Ps marketing mix model. These theoretical models guide the understanding of user acceptance and usage of technology and the marketing and promotion of the utilisation of such technology-based resources, particularly in the context of e-resource utilisation in university libraries.

3.8.1 Conceptual setting of the study

Central to this study are basic concepts that need explanation and understanding of their conceptual usage, even though they will attract further elaboration in subsequent chapters within the study. These are marketing, marketing applications within the library environment, electronic information resources, and marketing e-resources.

3.8.1.1 Marketing

The American Marketing Association (2017) describes marketing as a concept that represents those sets of activities and processes institutions use to create, communicate, deliver, and exchange offerings that have value for customers, clients, partners, and society at large. Also, Kotler and Armstrong (2012:5) explained the marketing concept as "the process by which companies create value for customers and build strong customer relationships to capture value from customers in return." The Kotler Marketing Group (2015) details that marketing is considered a science and art of exploring, creating, and delivering value to satisfy the unmet needs and desires of a target audience. It goes further to describe, measure, and quantify the size of the identified market and its profit potential. Marketing further pinpoints which segment the organisation can serve best and designs and promotes the appropriate products and services. Marketing includes such activities as understanding client needs, determining market niches, identifying products and services, building client relationships, and creating a "marketing mix" (American Library Association (ALA), 2019; American Marketing Association (AMA), 2017). The variations in definition confirm Abdelrazig (2018) position that marketing comes with a wide variety of definitions, all of which try to converge on the understanding that it is a customer-oriented strategic management process that combines both theory and practical methods and techniques for the realisation of its goals.

Marketing is, however, said to have been mistaken many times by many to mean "selling" or "advertising" due to the numerous advertisements and television commercials often placed by various organisations to reach their target customers (Farayibi, 2017). It remains a belief that

marketing has over the years largely been related to and used fruitfully within the profit-making segments of the economy to promote demands for goods and services, with a lesser amount of focus on nonprofit-making institutions such as academic libraries (AlAwadhi, and Al-Daihani, 2019:228).

3.8.1.2 Marketing applications within the library environment

An International Federation of Library Associations and Institutions (IFLA) study by Gupta et al. (2006) observes that marketing is not a new concept in the library and information science field, as it is as old as contemporary librarianship itself. But unfortunately, many librarians do not seem to recognise marketing as a tool they could adopt. Several writers (Asante, Martey, & Wakye, 2020:17; Aslam, 2018) contend that many librarians, unfortunately, associate marketing activities with only profit-making and commercial organisations and not academic libraries, whose purposes of operations they believe are not motivated by profit generation. This is the case because a lot of the actors within the library and information science profession do not seem to have fully appreciated the pivotal role and place of marketing in library and information services (LIS). Such librarians as Chaubey and Lal (2016) argue they were not taught what marketing entails in LIS at the library schools and, therefore, have failed to realise the importance of marketing in relation to the normal functioning of academic libraries. Chandratre, and Chandratre (2015:162) study and that of Chaubey and Lal (2016), however, reckon that the marketing of library resources and services is now being recognised and embraced as an essential agenda in all kinds of libraries by library and information science (LIS) professionals the world over. Marketing is becoming more important to LIS professionals for a variety of reasons, including shrinking budgets and increased competition from related information service providers (Bhardwaj & Jain, 2016:120).

In contrast to the traditional marketing approach, which focuses on the organisation and its specific product, the idea of marketing information resources in libraries as well as other information centres is client-focused and aimed at meeting the information needs of patrons (Bhardwaj & Jain,

2016:119). Within the purview of LIS, marketing denotes a unified approach to offering library resources and services that involves adjusting environmental influences, includes analysis of organisational goals, identifying information needs, designing suitable services targeted at current and potential users, and adopting an appropriate communication strategy to convey the message of the value of the service that exceeds the user's cost of attaining the service. Marketing in LIS is a concerted effort to assess users' information needs and design services that make resources available and accessible to meet those needs. The librarians in this regard ought to design a targeted communication plan to create user awareness and persuade current and potential users of the value and relevance of the available resources to the library user. Libraries provide service and thus have customers; anything done to promote the library's services by engaging readers within the user community can be described as marketing (Chandratre, and Chandratre, 2015:165).

Libraries in the current era of global networking face monumental competition from the internet and other commercial sources (e.g., Google, Yahoo, etc.), that provide information. Various researchers (Chegwe & Anaehobi, 2015; DeLancey, & Ostergaard, 2016:182; Edem & Egbe, 2016:60) have observed that many academic librarians began expressing concerns and sharing their frustrations with the emergence of a new competitor and thus wondered if these information marketplace competitors constitute a threat or an opportunity for academic librarians. Librarians wonder if the competition will draw away the library's user base or whether they can harness it to provide access to more and better digital collections. This creates an imperative action, requiring libraries to market themselves and their resources more aggressively than was previously thought necessary. Yi (2016) sees effective marketing and promotion as a managerial tool to assist libraries in facing challenges now and in the future.

Owing to the increasing awareness and interest in the subject of marketing within the domain of library and information management, professional bodies on the international stage have over the years made sterling contributions towards public awareness creation and advocacy campaigns

aimed at promoting the value of marketing to all libraries across the world. For instance, Garcia-Febo's (2022) study, titled "Leaving no one behind: Marketing Sustainable Libraries," delves into the initiative of the ALA UN 2030 Sustainable Development Goals (SDGs) Task Force. This undertaking aims to empower libraries by supporting communities to achieve the SDGs by formulating a comprehensive, multi-year strategic plan for the American Library Association. A pivotal outcome of this effort is the creation of marketing resources tailored for libraries, illustrating their role in propelling community development.

The study advocates for implementing recommendations such as leveraging ALA's marketing resources, developing instructive guides for both librarians and patrons, and positioning libraries as influential entities on both the national and global stages. These strategies are envisioned to foster transformative change, positioning libraries as essential contributors to societal progress.These insights offer valuable considerations for academic libraries seeking to enhance their marketing strategies and better cater to the needs of library users Library and information professionals have a bigger obligation to communicate the value of the resources and expertise their institutional libraries have to offer targeted users, both within their campuses and in society at large (ACRL, 2019). To help libraries develop their marketing campaigns, the ACRL, for instance, has provided on its website some marketing resources, namely: an advocacy toolkit; the power of persuasion; libraries transform toolkit; an academic PR discussion list; and a library marketing interest and outreach group (ACRL, 2019).

Stevenson-Parrish's study (2020:220) underscores the imperative for libraries to adopt effective marketing strategies in the current landscape of heightened strategic marketing and communication efforts. As organisations become more strategic, libraries must follow suit to successfully cultivate and retain brand loyalty among target audiences. The study emphasises that the days when libraries were the sole sources of information are long gone, and in the face of increased competition for market share, libraries need to implement robust marketing strategies. "Marketing Plans in Action:

A Step-by-Step Guide for Libraries, Archives, and Cultural Organizations" provides invaluable guidance to librarians and support staff, offering insights into creating a culture where marketing the library is not only necessary but also highly esteemed by colleagues. The book proves beneficial to both newcomers to the marketing field within the library profession and seasoned marketing professionals venturing into their first library-related role. The ten introductory chapters serve as a comprehensive resource on how to successfully market libraries in today's dynamic environment.

Joshua and Michael's (2020) study delves into effective marketing techniques geared toward promoting library services and resources in academic libraries. The findings derived from the analysed data shed light on the primary need for marketing library services, emphasising the goal of aligning these efforts with the library's objectives in identifying and meeting the information needs of users. The study reveals that various library services, such as reference services, indexing and abstracting services, and the provision of Internet access, are actively marketed. Additionally, a range of resources, including books, journals, and newspapers, are provided and promoted to users. The study identifies electronic access to information as the most widely used marketing technique, followed closely by exhibitions and the display of newly acquired materials.

3.8.1.3 Electronic information resources (e-resources)

Electronic information resources, or simply "e-resources," are information stored in electronic format within a computer system or computer-related facilities such as CD-ROMs, flash drives, digital libraries, or the Internet (Waral, 2020:5). E-resources are digital publications that provide remote access via computer networks or are directly accessible via such information carriers as discs, cassettes, cartridges, and flash, which are designed to be connected to computer devices (Bajpai et al. 2016). Most e-resources are web-based, usually more current than printed materials, accessible to multiple users at the same time, and support access from remote and underserved areas with no time, physical boundaries, or space constraints (Jotwani, 2014).

E-resources nowadays play important roles in facilitating teaching, learning, and research activities in academic institutions. Academic libraries, regardless of the size of their collections, now facilitate access to these resources for their clientele (Omosekejimi et al., 2015). E-resources are vital because they complement the already-available printed resources and enable the libraries in academic institutions to fulfil their missions and objectives. E-resources facilitate the provision of and access to information that otherwise may have been inaccessible to some library users due to their geographic location or financial constraints. Using available searching techniques, e-resources are searched, located, and accessed. Interlinked with several other publications and databases, they are downloaded and saved in different formats for future use. Also, for convenient use, they are accessible everywhere at the comfort of the user at any time and on any day. One of the most significant benefits of academic libraries providing users with access to e-resources in developing countries where funding is limited is that libraries can join consortiums to leverage their collective strengths to acquire many resources at affordable prices. Information seekers with internet access in libraries could access free e-resources under the Open Access Initiative. The second option is commercial access, where individuals or institutions subscribe and pay to guarantee access to e-resources from academic databases. There is, therefore, no doubt that e-resources are now an integral part of the collections in academic libraries (Ndungu, 2016).

To provide timely and accurate information to users, universities, through their libraries, are now spending enormous quantities of money to subscribe to academic databases to get access to e-resources that complement printed resources and meet the information needs of patrons as well as the teaching, learning, and research needs of their academic communities. To get value for money, these mostly subscribed resources must be optimally utilised to contribute to the academic achievements of not only students, but faculty and the entire university community. Despite the value of e-resources, studies have shown that usage in Ghanaian universities is not up to the expected level (Yebowaah and Plockey, 2017). Several writers (Acheampong et al., 2019; Dukper et al., 2018; Yebowaah and Plockey, 2017; Lamptey, 2016) have all reported on the low usage of

e-resources in Ghanaian universities. It is suspected that the low utilisation of e-resources is due to insufficient marketing of the resource to target users in recent years, library professionals are said to have come under pressure to justify investments made in e-resources by showing evidence of use. Therefore, many library professionals have appreciated the importance of aggressive promotional activities to create user awareness of e-resources. Promoting the usage of e-resources, however, comes with costs, and in many libraries, the funds allocated for marketing and promotion have been overlooked. Many librarians have, therefore, created promotional activities at a minimal cost to the libraries (Ndungu, 2016).

3.8.1.4 Marketing of e-resources

According to Waral (2020:1), the move from print to electronic formats has made the challenge of effective marketing of e-resources very relevant. Although many electronic resources are being acquired by libraries, Rysavy, Michalak, and Daly (2021:358) study indicated that the use of e-resources is less than satisfactory in many libraries. The extent of use of library resources, especially e-resources, is also said to be what determines their level of relevance, while a lack of awareness is also attributed as one of the main reasons for low usage. Whether physical or virtual, an academic library's services or resources are relevant only to the extent that they are used by their projected audience (Rysavy, Michalak, and Daly, 2021:360). It, therefore, depends on how well-informed the user community is about specific resources offered by the library.

One of the major causes of e-resource underutilization has been suggested as inadequate or a lack of effective marketing strategies. Marketing e-resources has been identified as posing unique challenges for librarians because libraries do not have control over search interfaces that could be complicated or confusing to users (Ofori et al., 2020:15; Atuase & Maluke, 2022:11). They have delved into the usage patterns of Web 2.0 technologies. Their findings underscore the significance of academic libraries establishing a presence on social media networking sites, with Facebook and Twitter emerging as the most widely adopted platforms. Additionally, the adoption rates for other

Web 2.0 technologies such as blogs, RSS, IM/Chat, podcasts and podcasting, social bookmarking and tagging, as well as wikis, were also suggested as relevant considerations for academic libraries. Even though academic librarians are said to be carrying out marketing activities to some extent, most of them were observed not applying strategic marketing approaches (Ndungu and Gikandi, 2018). Agyei and Ngulube (2022) state that although libraries understand the market need, they generally fail to develop a plan to meet it. Libraries spend huge amounts on e-resources, and as Ndungu and Gikandi (2018) identify, such huge investments ought to be justified through evidence of usage. It is therefore imperative that libraries, like other thriving organisations, justify acquisition and subscription to e-resources with evidence of high user accessibility and usage. This may be achieved through communication with the target audience about the value and importance of e-resources through the strategic marketing of their products and services (Ruzegea & Msonde, 2021:104).

Several researchers (Ruzegea & Msonde, 2021:104; Rahoo, 2018:5), however, found that libraries in recent times have realised the need for marketing their resources and, hence, are innovatively undertaking some marketing initiatives. There is a need for an organised and strategic process to guide the marketing of library services. It is said that the library profession is in constant flux as resources continue to move from traditional and physical formats to online counterparts and as librarians should mediate access to resources rather than provide ownership (Olorunfemi & Ipadeola, 2018:1).

3.8.1.5 User awareness creation

Awareness greatly influences the usage of e-resources in any library. The goal of working to create awareness in your user community is to give most users the opportunity to be conscious of what information resources are available for access. It also stimulates the interest of the users, who will be motivated to want to utilise the information resources that they have hitherto been unaware of. For Chanda (2021), library resources and services that hitherto were not well patronised could

witness a great increase in usage if the user community is made aware of their availability. In a study on awareness and usage of e-resources, Bellary, and Surve (2019) recommended the need for awareness creation among users concerning the availability of e-journals to improve usage at the Isfahan University of Medical Sciences in Iran. A well-informed user community will usually translate into a corresponding increase in access to and utilisation of library resources.

3.8.1.6 User competence/skills training

For students to satisfactorily utilise e-resources, they need to possess the needed technical competencies, such as basic information and communication technology (ICT) and information literacy (IL) skills. The major competencies needed to access and use electronic library resources are computing, digital, technical, and information literacy competencies (Israel & Nsibirwa, 2018). Odunewu and Aluko-Arowolo (2018) have reported a lack of computer skills and inadequate information literacy skills as the major competencies' challenges hindering use of e-resources. Joshua and King (2020) reckon that the low awareness of electronic library resources was mainly due to the students' lack of computer and internet literacy skills.

3.8.1.7 Accessibility/user environment

Information seekers look forward to information centres that facilitate their access to information resources that answer their information needs. According to Abdulrahman and Onuoha (2019), there needs to be more focus on access to information than ownership of information in the 21st century. Moyo (2017) considers access to information as something beyond the mere act of getting information presented to an information seeker confronted with an information need. Library professionals should present information content to their users in such a format via a medium while using a refined language that is easily understood by the information seeker to grant the needed satisfaction (Moyo, 2017). Several factors, however, affect access to ELRs. Abdulrahman and Onuoha (2019) observed several Challenges associated with accessing and utilising library electronic information resources by economics education students in Southeast Nigeria These

factors include availability at the point of need, awareness of the target audience, the technical infrastructure, user skills, training, and a support system for both staff and users of the information retrieval system. Accessibility may be hindered by other factors, such as the user environment, geographical locations, political factors such as censorship, a lack of adequate technologies, poor information literacy skills, and computer literacy skills (Abdulrahman & Onuoha, 2019).

3.8.1.8 User behaviour

Students' use of e-resources contributes to improved and higher-quality academic performance. But before students can use EIRs, they ought to be educated on how to interact with the technology or innovation (IS) that facilitates access to the resources. The user's willingness to adopt the system or innovation in accessing the e-resources will be key to the success and optimal patronage of the information resources. Davis (1989) finds that acceptance and adoption of technology are influenced by the users' behaviour. Indeed, some social and psychological factors influence people's acceptance and usage of technology. Abels, Liebscher, and Denman (1996), Wang, Wu, & Wang (2009), and Chieh-Peng and Anol (2008) studies, for example, have conducted research whose outcomes have indicated that user technology acceptance is influenced by user behaviour. Also, a user's acceptance and use of a system are influenced by his or her significant others. Other conditions facilitate the degree to which the user believes that conditions are adequate for effective use of the system, including organisational readiness and infrastructure adequacy.

3.8.1.9 System (IS) performance.

The views held by target users concerning the performance of a new system may also determine user acceptance and adoption of that system. Venkatesh et al. (2003) outline how the user performance of the information system influences user acceptance and adoption of new technology. For instance, if the level at which a user expects a system to perform is considered very helpful, then the user acceptance ratings of that new technology would be very high, and vice versa. The effort the user is expected to exert in using the new technology is also another factor

that determines the user's adoption of the new system. If the target users perceive that the system is easy to use, then the system is very likely to be accepted, but if the users' view of the efficacy of the system is low, then it will negatively affect the users' decision regarding the system's acceptance.

Research questions are formulated based on the relationships proposed in the conceptual framework. The assumptions underlying the framework are that positive perceptions of performance expectancy, effort expectancy, social influence, and facilitating conditions will lead to higher behavioural intentions and, in turn, result in increased actual use of e-resources. Relating the conceptual framework to the study allows the researcher to identify and indicate the various aspects and variables that influence students' usage of electronic resources. There are identified variables (i.e., dependent variables) that work together to deliver effective usage, patronage, and utilization. Optimal utilisation of e-resources, therefore, is influenced by the availability of the e-resources, user awareness, the accessibility and convulsiveness of the user environment, and the competencies and skills of the user. Assuming all else is equal, embarking on a campaign to promote or market library resources may necessitate all these variables to achieve effective and efficient use of e-resources in libraries.

Figure 3.2 illustrates a conceptual framework for students' acceptance of and use of electronic resources from academic libraries (Baayel, 2020).
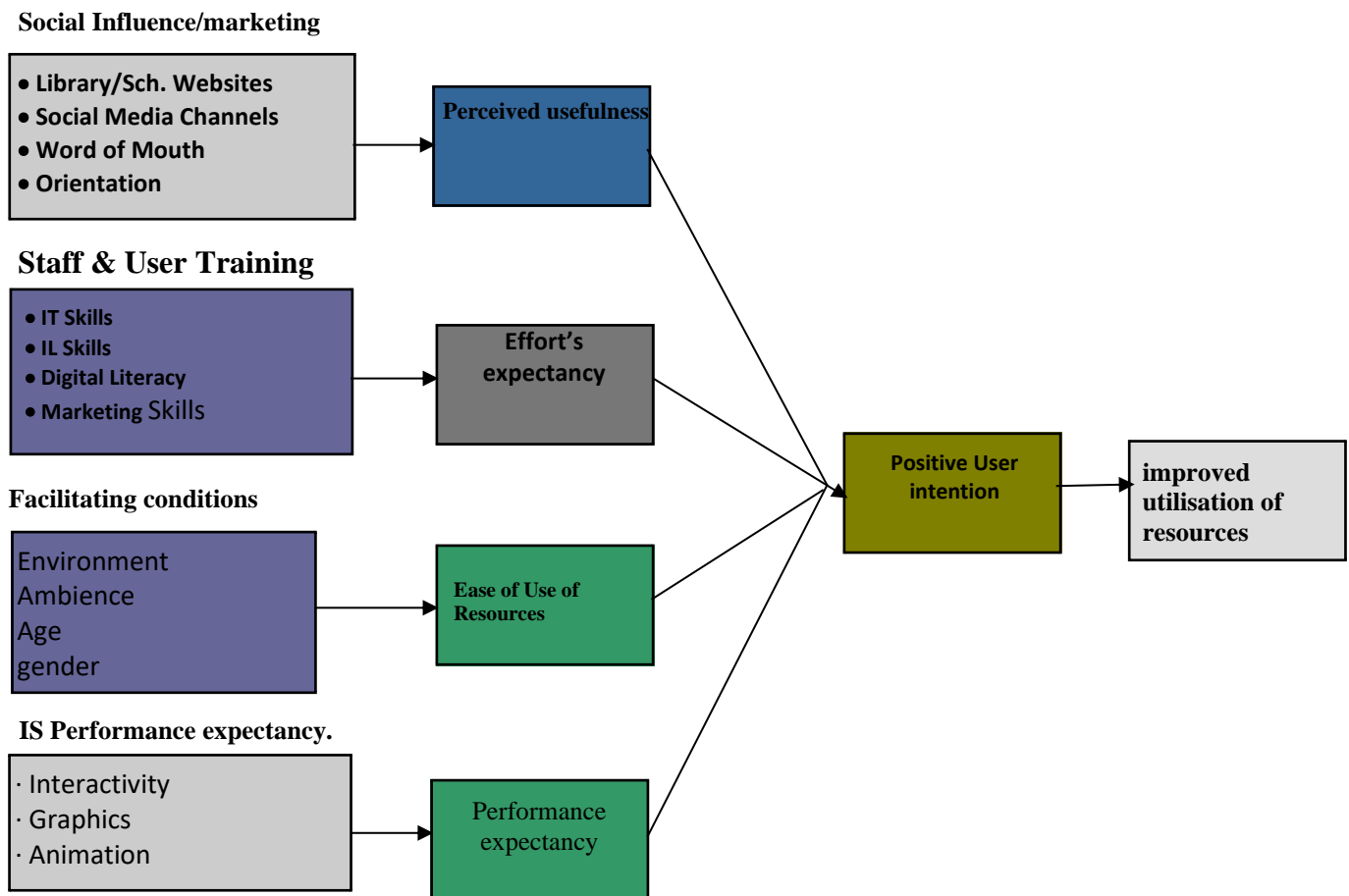
Figure 3.2: A conceptual framework for students' acceptance of and use of electronic resources from academic libraries (Baayel, 2020).

The key constructs of the conceptual framework are derived from the TAM, TAM2, TAM3, and UTAUT, and they include:

1) Performance Expectancy: This represents the user's perception of how beneficial and helpful the use of e-resources will be in improving their academic performance and research outcomes.

2) Effort Expectancy: This measures the user's perception of the ease of use and user-friendliness of the e-resources platforms and tools.

3) Social Influence: This factor reflects the impact of social norms and the influence of significant others, such as peers, faculty members, and librarians, on the user's decision to adopt and utilize e-resources.

4) Facilitating Conditions: This construct examines the perceived readiness of the university library's infrastructure, support services, and organizational environment to facilitate effective access and use of e-resources.

5) User Experience: This dimension considers the level of familiarity and previous exposure of users to e-resources, as well as their prior experience with technology in general.

6) Behavioral Intentions: This represents the user's intention and willingness to adopt and use e-resources for their academic and research needs.

7) Actual Use Behaviour: This measures the actual utilization of e-resources by users in the university libraries.

8) The conceptual framework also considers moderating factors such as age, gender, experience, and willingness to use technology. These factors can influence the relationships between the key constructs and user behavior.

Overall, the conceptual framework provides a roadmap for understanding the factors that influence the acceptance and utilisation of e-resources in the context of university libraries, as well as the relationships among these factors. It serves as a guide for conducting the empirical investigation and contributes to the overall validity and relevance of the research.

3.9 Summary of Chapter 3

Chapter 3 presented a comprehensive review of the literature, highlighting numerous studies conducted on marketing library services in general. However, the specific area of marketing electronic resources to students has received limited empirical attention. The literature review encompasses factors influencing low usage of e-resources, the current state of library marketing practices, emerging strategies for marketing e-resources, factors influencing user behavioural intentions towards e-resource usage, information professionals' competencies, and innovative e-resource marketing strategies. The review underscores the critical importance of marketing library

services in the contemporary information landscape. Chapter 3 also contains the conceptual framework, which serves as a roadmap for the researcher, providing a systematic and organised way to approach the study. It aids in developing research questions, designing the research methodology, and interpreting the results in the context of existing theories and knowledge. Technical universities in Ghana must develop well-crafted marketing plans to effectively promote electronic resources among their intended users and students. Emphasizing marketing efforts is vital to retaining existing users and attracting new ones, thus increasing e-resource utilization. Neglecting marketing could drive users towards paying for information from commercial vendors, potentially diminishing the relevance of libraries in this rapidly evolving digital age. The following chapter, Chapter 4, will focus on the methodology by identifying and outlining pertinent areas and components that are essential to carrying out the study successfully.

4.1 Introduction

This chapter discusses the study's philosophical perspectives, approach, design, population, sampling, data collection, and data analysis procedures, as well as what influenced the methodological choices regarding specific aspects of the study. The methodology chapter according to researchers ((Patten & Newhart, 2017:12), is that which discusses the principles, procedures, and practises that underpin the research. It is an illustration of a clear description of systematic scientific processes and procedures used to collect and analyse data to arrive at conclusions that answer research questions(Creswell & Hirose, 2019). Research methodology provides a detailed account of the research processes required for providing context and verifying the study's findings (Creswell & Creswell, 2017:12). The methodological map of this study is depicted in Figure 4.1.
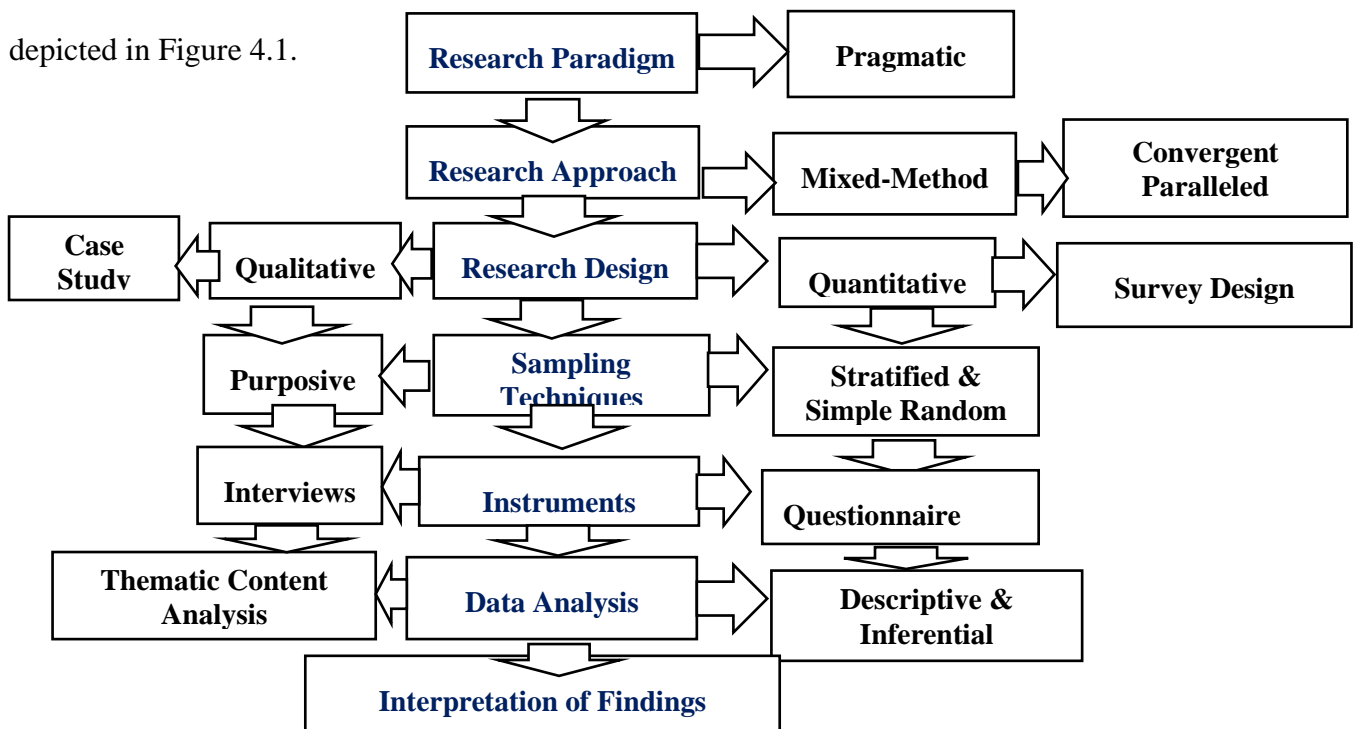
Figure 4.1: Overview of research methodology

4.2 Research paradigm (research philosophy, or world view)

People's views of the world and how knowledge is constructed are closely linked to what they perceive as reality. It is critical to understand how the researcher perceives reality during the

research process because an individual's perception of reality influences how knowledge of the world is gained and applied (Khatri, 2020). This means that an individual's perception of reality and how knowledge is gained often affect that person's way of conducting research. One key term concerning the way people view the world is "paradigm."

A paradigm is a concept that originated in the history of science (Bryman 2016:149). The concept paradigm is an adaptation from Kuhn (1962 and 1970) and has been used to represent the beliefs, values, ethics, etc., shared by a community of like-minded persons. A paradigm in social science research is the philosophical worldview about how knowledge is constructed and measured, what is ethical, and the nature of being. It shapes thoughts about what is studied, how research is conducted, and how findings are interpreted (Bryman 2016:159). A paradigm is a set of common beliefs and values shared by a community of like-minded researchers on how research problems are solved (Khatri, 2020). It is thus a very important aspect of research since the type of paradigm one subscribes to influences one's view of the world on a day-to-day basis and would very likely influence how he or she conducts research (Kaushik & Walsh, 2019:255). As a pre-requisite of perception itself, the paradigm a researcher will subscribe to depends on the way one has been taught to think and see things, and what one sees depends on one's previous visual or conceptual experience (Davies & Fisher, 2018: 25).

According to Davies and Fisher (2018:21), the term "paradigm" has four different meanings: an epistemological stance, a world view, a model, and shared beliefs among a community of researchers. Various researchers (Bryman 2016; Khatri, 2020; Kaushik & Walsh, 2019:255) have used the term "paradigm," and other researchers (Neuman, 2014; Ngulube, 2015; Creswell, 2017; Neuman, 2014) have used other related terms but referred to the same thing. Creswell (2017:7) referred to it as "worldview" or "beliefs," while Kaushik & Walsh, 2019) referred to it as assumptions, frameworks (Ngulube, 2015), Neuman's (2014) approaches, or research

methodologies (Neuman, 2009). For this study, these terms were used interchangeably to mean the same thing.

A paradigm is thus defined according to four distinct and important philosophical elements: axiology, ontology, methodology, and epistemology. The paradigm differences influence our knowledge and interpretation of reality, our values, and our research methodology (Kumatongo & Muzata,2021:16; Kamal, 2019). These philosophical elements (axiology, ontology, methodology, and epistemology) espouse the fundamental principles, norms, and values of the various paradigms (Patel, 2015; Kivunja & Kuyini, 2017), which researchers, basically, may fall under (Onwuegbuzie, Johnson & Chrestensen, 2019; Patel, 2015). Consequently, it is deemed significant to demonstrate knowledge of these elements. Several researchers (Saunders et al., 2009; Kivunja & Kuyini, 2017) have provided the following explanations for these elements:

a) **Ontology:** Ontology pertains to the nature of reality and what is considered meaningful. Within the realm of ontology, two contrasting positions emerge, depending on the specific paradigm being explored. One perspective advocate for a single objective truth, a reality that exists independent of individual perceptions and is governed by consistent laws. This perspective is often associated with the positivist approach. On the other hand, the alternative paradigm posits that everything is relative and that there is no singular objective or universal truth. Instead, multiple subjective truths coexist, shaped by individual perceptions and interpretations. Those adhering to this view are often termed "constructivists" or "interpretivists" (Mason & McBride, 2014: 51; Kivunja & Kuyini, 2017).

b) **Epistemology:** Epistemology delves into the process of acquiring knowledge and understanding how we come to know about the world. It is concerned with the methods and approaches used to gain knowledge. The way we perceive reality directly influences our knowledge acquisition process. If we view the world as having universal truths that

exist independently of individuals, then "objective" research, where the researcher remains neutral and distant from the subject being studied, is deemed appropriate for discovering these truths. In this context, unbiased knowledge is obtained through objective observation. However, if we believe that the world comprises multiple subjective realities beyond objective and universal truths, then the ideal approach to gaining knowledge is through interaction with the subjects of study. In such cases, the researcher engages with the participants, acknowledges their perspectives, and embraces the diversity of their experiences. This interaction-based approach facilitates a deeper understanding of the various subjective realities that exist.

In a nutshell, our epistemological stance shapes how we perceive knowledge acquisition and the research process as researchers. If we embrace a singular objective reality, we tend towards objective and detached research (Kivunja & Kuyini, 2017). Conversely, if we acknowledge the presence of multiple subjective realities, we lean towards interactive and engaged research methodologies (Saunders, Lewis, Thornhill, & Bristow, 2015).

c) **Methodology:** as an understanding of reality affects how knowledge of reality is gained, there is a need to acknowledge that the methodology of researching reality is also affected. The differences in ontology and epistemology mean that different research methods are employed, with quantitative researchers using deductive approaches, whereas, in contrast, qualitative researchers have tended to use inductive approaches (Mason & McBride, 2014:52).

d) **Axiology:** this is concerned with ethical issues that need consideration when planning a research proposal (Kivunja & Kuyini 2017). It is important to establish what is important to the researcher or what the researcher values in the research. This is because what is valuable to the researcher affects how research is conducted and what is valuable in the research findings. Axiology concerns one's judgement of values; it focuses on the assessment of the role of the researcher's values at every stage of the research process.

refs to the ethical issues that need to be considered during study planning (Kivunja & Kuyini 2017).

There are four widely accepted research paradigms or worldviews that influence social science research. These worldviews are positivist/post-positivism, constructivism, transformative, and pragmatism (Creswell, 2014:6). These are discussed below.

a) **The Postpositivist/Post-positivist:** these researchers advocate for the use of natural science methods in the study of social reality. Post-positivists believe that reality is constructed via a methodical process that is founded on processes of scientific experimentation, observation, and verification. They believe that factual knowledge is gained through a scientific process of observation and measurement (Kivunja & Kuyini 2017).

b) **Constructivism/Interpretivism:** the constructivists, who are also considered the interpretivists, believe that individuals seek the meaning of the world around them by developing subjective meanings of their personal experiences. Of important focus to a researcher in the constructivist world is the participant's experience and the views of the subject under study (Kivunja & Kuyini 2017). Researchers of a transformative philosophical worldview (Creswell, 2014) are interested in using research as a tool to confront issues of social oppression, where the focus is on advocacy for political and social change for the benefit of the marginalised in society.

c) **The Transformative Paradigm**: also called the critical paradigm, is a world view whose proponents are concerned with the plight of marginalised communities, with their analysis focusing on power differentials as the causative factor and their research findings intended to mitigate the disparities (Jackson et al., 2018). They believe that research inquiry should be concerned with confronting social oppression at all levels. Transformative researchers are critical theorists whose writers historically have drawn on the works of Marx, Adorno, Marcuse, Habermas, and Freire (Fraser, 2014).

d) **Pragmatism:** Pragmatists consider what works as reality rather than what is considered the absolute and objective truth. They hold the view that reality could be generated using various ways and processes, such as the subjective, objective, or both subjective and objective processes. Pragmatists are reluctant to accept the use of a single method of scientific inquiry and doubt whether the single method of research could achieve truth in the real world (Kivunja & Kuyini 2017).

Even though the literature (Fraser, 2014) recognises the existence of four research paradigms, the current study adopted the pragmatic paradigm or worldview as its underpinning research philosophy. To give more details on the philosophical underpinning of the current study, an elaboration of the discussion regarding Pragmatism in Social Science Research as the paradigm undergirding the current study is provided in the ensuing section.

In line with the reasoning of some researchers (Kuyini, 2017; Saunders et al., 2015; and Martens, 2015), the table below (Table 4.1) gives an illustration of how the various research paradigms relate to each of the four foundational elements of philosophical assumptions (ontology, epistemology, axiology, and methodology).

Table 4.1: A Summary of how the research paradigms relate to each of the four foundational elements of philosophical assumptions (i.e., ontology, epistemology, axiology, and methodology)

Ontology (Nature of reality or being)	Axiology (Role of values)	Epistemology (What constitutes acceptable knowledge)	Typical methods
1.Positivists/Postpositivist Paradigm			
real, external, independent, one true reality (universalism), granular (things), ordered	value-free research, where the researcher is detached, neutral, and independent of what is researched. The stance on objectivity is maintained.	scientific method of observable and measurable facts, law-like generalisations, numbers, causal explanation, and prediction as contributions	Typically, deductive, highly structured, large samples, measurement, and typically quantitative methods of analysis are used, but a range of data can be analyzed.
2. Constructivists/Interpretivists Paradigm			
Complex, rich, and socially constructed by culture and language Multiple interpretations, realities, experiences, and practises	Research is value-bound, with the researcher being part of what is researched. The researcher is subjective and reflexive, with interpretation being a key contribution.	The focus is on narratives, stories, perceptions, and interpretations. The outcome is a new understanding, worldview, and contributions.	Typically, inductive. Small samples, in-depth investigations, qualitative methods of analysis—a range of data can be interpreted.
3. Pragmatists Paradigm			
complex, rich, and external. Reality is practical, based on ideas, and a flux of processes, practices, and experiences.	Value-driven research Research is initiated and sustained by the doubts and beliefs of the researcher. Based on the researcher's reflexive	Knowledge is what is practical. The truth is knowledge-based, successful action. Thus, the focus is on the practical way of solving problems.	Research problems and research questions are solved using various methods (mixed or multiple), such as qualitative, quantitative, action, etc. The focus is on practical solutions and outcomes.
an ontology of historical realism that especially relates to oppression	Axiology that respects cultural norms	The researcher interacts with the participants; thus, it is transactional in epistemology.	dialogic in methodology

Source: Field work, 2021

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4.2.1 The pragmatists paradigm

This study adopts the pragmatic paradigm as its philosophical foundation. Pragmatism is a philosophical movement that emphasises the practical consequences and usefulness of propositions to determine their truth. According to pragmatists, truth is not an absolute concept but rather a proposition that proves to be effective and satisfactory in practical application (Davies & Fisher, 2018:21). The meaning of a proposition is found in its practical consequences and how it helps us arrive at a better understanding of reality. Pragmatism is built upon a non-singular realism, acknowledging that reality is multifaceted, constantly negotiated, and open to interpretation. It aligns with the epistemological position of rationalism, which values reasoning and problem-solving in gaining knowledge.

In pragmatism, the focus is on what works best to address specific research questions or problems rather than being entangled in debates about absolute truth or reality (Kaushik & Walsh, 2019:255; Fraser, 2014). This paradigm promotes the use of mixed research methods, allowing researchers to draw from various approaches to find the most effective solutions. Pragmatism is deconstructive in nature, as it sidesteps the traditional distinctions between realism and anti-realism often debated in positivism versus interpretivism discussions within the social sciences (Kaushik & Walsh, 2019:255 Davies & Fisher, 2018:21).

An essential aspect of pragmatism is its acknowledgment of the ever-changing nature of reality and how different worldviews emerge from lived experiences. It rejects the notion of a fixed, immutable reality and instead embraces the idea that reality is shaped by our actions and interpretations (Morgan, 2014). In essence, pragmatism offers a flexible and adaptive framework that values practicality and problem-solving, making it suitable for addressing real-world challenges and complexities in research.

Pragmatism, as expounded by Creswell and Hirose (2019) and Khatri (2020), forms the philosophical foundation of mixed-methods research. The mixed methods research paradigm, also

known as the "pragmatism paradigm," was developed following the positivism and interpretivism paradigms (Kumatongo & Muzata, 2021:16). Pragmatists embrace the idea that it is possible to work with both positivist and interpretivist perspectives (Kamal, 2019:1386). The term "pragmatism" was coined to convey a specific logical maxim that offers a method for concept analysis. This method involves envisioning the conceivable practical consequences of affirming or denying a concept, particularly concerning deliberate and self-controlled conduct (Creswell, & Hirose, 2019).

The pragmatic paradigm was chosen for this study because it combines various methods and ideas, offering a robust framework to address research questions and provide tentative answers. The researcher's motivation for adopting the pragmatic worldview stems from the belief that integrating quantitative and qualitative data, analyzing them together, and converging the results on the same research problem within the same study yield more robust and convincing findings than relying on a single form of data. This approach resonates with the understanding that using different approaches to gather diverse types of data enhances the comprehension of the research problem and yields clearer results than relying solely on qualitative or quantitative data, as supported by several studies (Marutha & Modiba, 2022:495; Harrison, Reilly & Creswell, 2020:473; Kumatongo & Muzata, 2021:16; Kamal, 2019:1386). Consequently, the mixed methods research approach is employed in this study.

4.3 Mixed method research (MMR) approach

Hirose and Creswell (2023:12)) posit that the research approach consists of a plan and a procedure for research that detail everything from the broad assumptions to a comprehensive method of data collection, analysis, and interpretation. Almalki (2016) identifies three broad approaches that include qualitative, quantitative, and mixed methods. So, depending on the context of the research, each of the three approaches is viewed from the angle of its own procedures, strengths, and weaknesses (Creswell 2017). For Blumenberg et al., 2019), the appropriate approach for research

that involves quantifiable measurement of variables of interest, where hypotheses can be formulated and tested with inferences drawn from samples of the population, is quantitative. On the other hand, Babbie (2016) contends that a research approach that demands a scientific process of observing and gathering non-numerical data, which tends to be a more holistic and natural approach to solving problems, is the qualitative approach.

A third approach, a mixed-method approach in the view of several researchers (Marutha & Modiba, 2022:495; Almalki, 2016; Creswell, 2014:7; Creswell & Hirose, 2019), tends to gather both quantitative and qualitative data in a single study for breadth and depth of understanding and corroboration of findings. The mixed methods research approach is a hybrid of the quantitative and qualitative research approaches (Creswell & Plano Clark 2018:44), which quickly gained popularity within the first decade of the twenty-first century after it first emerged in the late 1980s to the early 1990s (Ngulube 2020:426). The emergence of the MMR approach, which has become known as "the third methodological wave," was developed as a complement to the quantitative and qualitative research approaches. Therefore, its arrival stemmed from the realisation that all research approaches (qualitative and quantitative) have strengths and weaknesses, which ostensibly has led to a decline in the epistemological debates of the qualitative and quantitative "paradigm wars" (Ngulube, 2013:11; Marutha & Modiba, 2022:495). Moule (2018:79), therefore, defines MMR as "research that uses both quantitative and qualitative research methods in one study and integrates and synthesises elements from both quantitative and qualitative approaches in addressing a research query." The MMR approach, however, should not be regarded as a sign of disdain for quantitative or qualitative research methods, but rather as a realistic and complementary way of assisting in the investigation of a research issue from a more educated perspective.

Various writers (Ngulube 2020; Creswell & Hirose, 2019; Almalki, 2016; Creswell, 2014; Marutha & Modiba, 2022:495) are of the view that researchers, if they so wish, should have the freedom to adopt more than one approach within a single study. For instance, several researchers (Adjei, 2020;

Kodua, 2019; Moyo, 2017) in their doctoral theses within the information and library science field have adopted mixed method approaches where both quantitative and qualitative data were combined. This, they (Adjei, 2020; Kodua, 2019; and Moyo, 2017) argued, provided them with a more comprehensive understanding of the research problem than if a single approach were adopted. Also, Murbach (2019:42) believed the fusing of both quantitative and qualitative data gave the study very rich findings in terms of the enormous and high-quality data collected to tackle the research problem.

4.3.1 Suitability of MMR for this study

The pragmatist underpinning of this study is a major reason that made mixed-method research (MMR) a suitable approach for the study, where both the qualitative and quantitative approaches were combined at different phases within the research process (Hirose & Creswell, 2023:12; Marutha & Modiba, 2022:495; Davies & Fisher, 2018:22). The MMR is best suited for research studies that are particularly underpinned by pragmatic philosophical paradigms (Mabila, 2017:136; Davies & Fisher, 2018:22). Pragmatists believe that reality is constantly renegotiated, debated, and interpreted; therefore, the best method of constructing reality around a situation is one that solves the problem. This suggests that a variety of views and perspectives need to be aggregated before a solution can be found for the research problem. In this study, there are several different realities as perceived by students and library professionals, and while it is possible to aggregate the characteristics of e-resources usage, it would serve this study best if such massified responses from students who applied their experiences and thoughts to the research problem could be corroborated by the in-depth views of the professional library staff. Through their observation and interactions with students, the professional librarians are able not only to describe what is happening but also to see beyond aspects that are hidden from the students.

The research questions, likewise, and the issues under investigation influenced the adoption of the mixed-method research technique (Mabila, 2017:138). For instance, to determine the causes of

students' low usage of e-resources in the technical university libraries in Ghana, the researcher adopted the mixed-method research technique to gather quantitative data on student user experiences of e-resources, while on the same subject, in-depth discussions with senior library and information professionals were conducted to gather qualitative data. This provided the researcher with the opportunity to cross-verify the results from both quantitative and qualitative data sources, which allowed for consistency in the findings from the different research instruments used. As Davies and Fisher (2018:22) reasoned, combining quantitative and qualitative data collection methods is meant to uncover the complexity and intricacies of the social reality being studied. Therefore, for a comprehensive understanding of the issue being studied (i.e., marketing e-resources to TU students because of the issue of students' low patronage of e-resources), a survey of both students and senior library and information professionals was required. The survey sought to gather the experiences and opinions of students using a quantitative approach because of the large number of students in the targeted population. On the other hand, an in-depth interview of library and information professionals, coupled with an analysis of documentary materials using the qualitative approach, was required on the issues under investigation.

The MMR approach is used in this study to minimise the limitations of either the qualitative or quantitative approaches on the one hand while maximising the inherent benefits of both approaches on the other (Ngulube 2020:425). As Marutha (2020:404) points out, the adoption of one approach may have weaknesses and prejudices, making it necessary to supplement quantitative data with qualitative data, or vice versa, in this study to fill holes and provide better and more detailed answers to the research questions. Mixed methods analysis, according to Ngulube and Ngulube (2015:1), allows for a balanced investigation of a research problem because "there is no single omnipotent research process." For instance, the adoption of the MMR approach in this study allowed the researcher to triangulate data collection (Davies & Fisher, 2018:22; Marutha (2020:404). The researcher gathered data from different sources (registered student users of TU's libraries and library and information professionals from the same libraries in Ghana) concerning the same

phenomenon of marketing e-resources to TU students because of the issue of students' low patronage of e-resources in TU's libraries in Ghana.

A key strategy during the data triangulation was to identify each data source, such as registered student users of TUs libraries, library and information professionals, and documentary analysis, then include a considerable number of participants from each data constituent. Using both qualitative and quantitative approaches, semi-structured interviews were conducted with the library and information professionals, complemented by the documentary analysis, to gather the qualitative data, while the questionnaire was designed to gather quantitative data from registered student users on the same phenomenon. Triangulation made it possible to validate the data through cross-verification from both the quantitative and qualitative data sources, which allowed for the testing of the consistency of the findings obtained from the different research instruments (semi-structured interviews and questionnaires).

One researcher in LIS (Ngulube 2020) who justifies the adoption of mixed methods argues that it helps provide a detailed and richer understanding of information and information-related phenomena, demonstrating the limitations of a single approach. The need to investigate a problem from multiple perspectives to obtain more comprehensive and corroborated results, the need to explain quantitative results, the need to explore before developing an instrument, and the need to supplement an experimental study with a qualitative meta-analysis are some of the reasons that call for the adoption of the MMR approach (Creswell & Plano Clark, 2018:8).

The mixed approach ostensibly was used in this study for both quantitative and qualitative data to corroborate each other and triangulate findings at the same time. This approach was considered because the wide range of information collected needed to be harmonised with deductions made from both quantitative and qualitative data, and information gathered. For instance, the adoption of the quantitative method to examine the causes of students' low usage of e-resources in TU's

libraries from the viewpoint of students themselves, was supported with qualitative data from participants' (library professionals)' perspectives on the same subject.

One major feature of MMR is the occurrence of the mixing of quantitative and qualitative elements at many or all phases of the study and not just at a single stage (Marutha, 2020:421,427; Ngulube, 2020:425). Given this knowledge, the occurrence of mixing quantitative and qualitative elements at many stages of this study and not just at one was evident. Table 4.2 shows how both quantitative and qualitative strands were mixed at many stages in the current study.

Table 4.2: How quantitative and qualitative strands were mixed at different stages of the study.

Phase	Qualitative	Quantitative
1. Research questions	1. What causes low usage of the e-resources in the library by students? 2. What are the ways in which libraries market their resources to students? 3. What modern and emerging ways can libraries market their e-resources for better results? 4. What behavioural traits will influence students' intentions to patronise e-resources in libraries? 5. What personality traits and qualities of the library professionals will influence students' patronage of e-resources? 6. What innovative marketing measures are proposed to influence optimal students' usage of e-resources?	1. What causes students' low patronage of the e-resources in the library? 2. What are the ways in which libraries market their resources to students? 3. What modern and emerging ways can libraries market their e-resources for better results? 4. What behavioural traits will influence students' intentions to patronise e-resources in libraries? 5. What personality traits and qualities of the library professionals will influence students' patronage of e-resources? 6. What marketing measures are proposed to influence optimal students' usage of e-resources?
2. Research design	The study employed a concurrent triangulated mixed-methods research design where both quantitative and qualitative data were collected at roughly the same time between July 2021 and December 2021.	The study employed a concurrent triangulated mixed-methods research design where both quantitative and qualitative data were collected at roughly the same time between July 2021 and December 2021.
3. Sampling method employed	No sampling was employed as the census approach was employed to include all participants for qualitative data collection.	A stratified random sampling process was adopted to select a sample to respond to the questionnaire for quantitative data collection.
2) Data collection techniques	Semi-structured interview guides are designed to guide the interview process for qualitative data collection. Interviews were recorded on-site and transcribed according to thematic areas. The interview was concurrently complemented by the analysis of documentary materials.	While the interview process was ongoing, structured questionnaires were being concurrently administered to respondents using the Google Forms software to gather quantitative data.
5) Data Analysis	Thematic content analysis of data	SPSS software, Smart PLS version 4, Microsoft 365 Excel
Data interpretation	Inductive interpretation	Deductive interpretation
7. Reporting the findings	Explanations using subjective views and personal opinions	descriptive statistics using percentages, numbers, graphs, and tables, and

			variance-based structural equation modelling

Source: Field data, 2020

Once the research approach for the study had been determined, the researcher needed to select an appropriate research design to guide the logical progression of the study, as stipulated by Marutha and Modiba, 2022:505. The research design gave the study a plan to guide how data was collected, analysed, and interpreted (Ngulube, 2015:125). The next section is, therefore, a discussion of the research design for the study.

4.4 The concurrent triangulated mixed method design

The mixed methods research approach has given rise to several categories of research designs, although there is often overlap among them (Molina-Arizon and Fetters, 2016:37; Ngulube, 2015:127). Some popular typologies of mixed methods design include triangulation, embedded, explanatory, and exploratory designs (Ngulube, 2013), as well as convergent, exploratory sequential, and explanatory sequential designs (Molina-Arizon and Fetters, 2016:37). A research design serves as a framework or plan guiding the collection, analysis, and interpretation of data in a study (Ngulube, 2020:455). Patel (2015:10) asserts that the research design is predetermined based on the type of data to be collected and analyzed in response to the research questions. Bryman (2012:46) emphasizes that a research design should encompass various aspects of the study, such as a clear outline of the targeted sample, research methods used for data collection, research instruments, and the data analysis process. A well-crafted research design enables the researcher to demonstrate that the study will yield valid and credible conclusions logically derived from the generated evidence (Jupp, 2006:266).

The underlying rationale for a research design, as proposed by Mouton (2006:108), is to plan and structure the research project in a manner that maximizes the eventual validity of the research findings by minimizing or eliminating potential errors. In Mouton's perspective, validity refers to

the best approximation of the truth, which is the goal of any investigation (Mouton, 2006:108). This forms part of the motivation for the selected research design.

Considering the aim of the current study, the most suitable research design is the concurrent mixed method design. Concurrent mixed methods research involves the simultaneous collection of both quantitative and qualitative data, with neither type of data influencing the other (Bell, Warren, and Schmidt, 2022). This approach has the advantage of saving time, as both types of data can be collected at once. For instance, one could collect both Likert scale responses and open-ended qualitative feedback in a single survey about a potential new product. Concurrent designs are effective for triangulating data and demonstrating agreement between quantitative and qualitative findings. Triangulation helps to minimize the risk of chance associations and bias that can arise in studies that use only one method (Wilson, 2014). By using different types of data, researchers can also enhance the validity and generalizability of their findings. Concurrent mixed-methods designs are especially useful for evaluation research, where multiple data sources can be reviewed to arrive at a comprehensive conclusion. For example, Bell, Warren, and Schmidt (2022) used a concurrent mixed-methods design to evaluate the effectiveness of research methods training by analysing both grades and qualitative feedback on researcher preparedness. It is important, however, to carefully consider how the data will be collected and integrated into the analysis process to ensure clarity about its value and purpose. As a result, the concurrent mixed method research design, a mixed-method research design, was used for this study. In this method, both qualitative and quantitative data were simultaneously gathered and analysed, with the results compared. This design's research process could be represented as qualitative and quantitative (QUAL + QUAN; Marutha & Modiba, 2022). The research process adopted within the convergent parallel design is illustrated in Fig.4.2
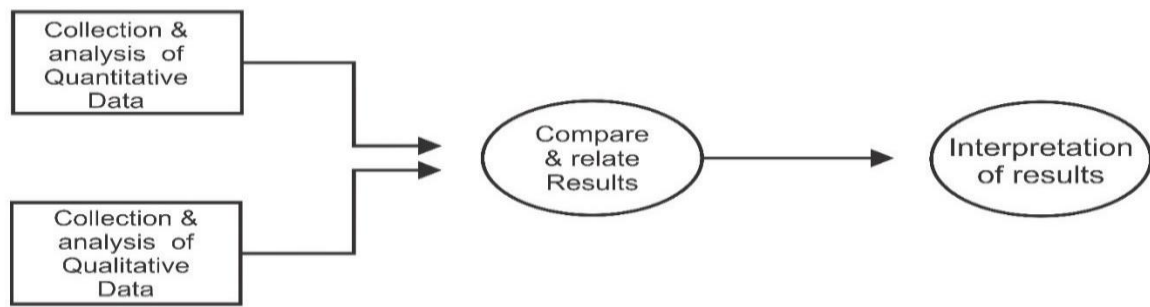
Figure 4.2: Concurrent triangulated mixed method research design diagram (Baayel, 2022)

By adopting the concurrent mixed method research design, the study involved simultaneous data collection on both quantitative and qualitative aspects in the same phase of the research process. The design treated both methods equally, analysing each component independently and subsequently interpreting the results together (Hirose & Creswell, 2023:12; Molina-Azorin & Fetters, 2022). The researcher pursued triangulation as the objective, seeking corroboration and validation by directly comparing the quantitative statistical results with the qualitative findings.

In this study, the concurrent mixed method design facilitated the triangulation of data, enabling the gathering and analysis of both qualitative and quantitative data simultaneously. The two data components were merged at the end to offer a comprehensive understanding of the research questions. The quantitative data was collected through a questionnaire administered via Google Forms, while the qualitative data was obtained through semi-structured interviews conducted face-to-face. The questionnaire responses were quantified using SPSS data analysis software, and structural equation modelling (SEM) was employed to test the proposed relationships. On the other hand, the qualitative data underwent thematic content analysis to draw meaningful insights.

The concurrent design in this study harnessed the strengths of both quantitative (QUAN) and qualitative (QUAL) approaches, creating a synergistic effect that complemented each other's findings. Additionally, it allowed for compensating for the weaknesses of each approach, covering up their respective limitations. By obtaining and analysing two datasets concurrently, the study was able to gain a more comprehensive understanding of the research topic. The next section of

the study focuses on the study's population and will delve into further details regarding the participants involved in the research.

4.5 Population

The population is an important factor to consider when conducting a survey. The population is the category or composite to which the researcher intends to generalise the findings of the research analysis. The population of a research study is the total number of cases that can be included as research subjects (Vivek & Nanthagopan, 2021). In the context of this study, the population refers to the group of individuals drawn from the general population (i.e., libraries, students, and library and information professionals) and who are studied because of their knowledge of some information relevant to answering the research questions (Plonsky, 2017:43). As a result, the population of this study must be well-defined in terms of content, unit, extent, and time (Vivek & Nanthagopan,2021).

The population for this study was divided into three categories: libraries, registered students' users of the libraries, and senior library and information science professionals/academic librarians of TUs in Ghana.

a) The libraries on target were academic libraries in TUs. Figure 4.3 is a drawing of the entire Ghana map with the distribution of the locations of the 10 TU libraries in Ghana.
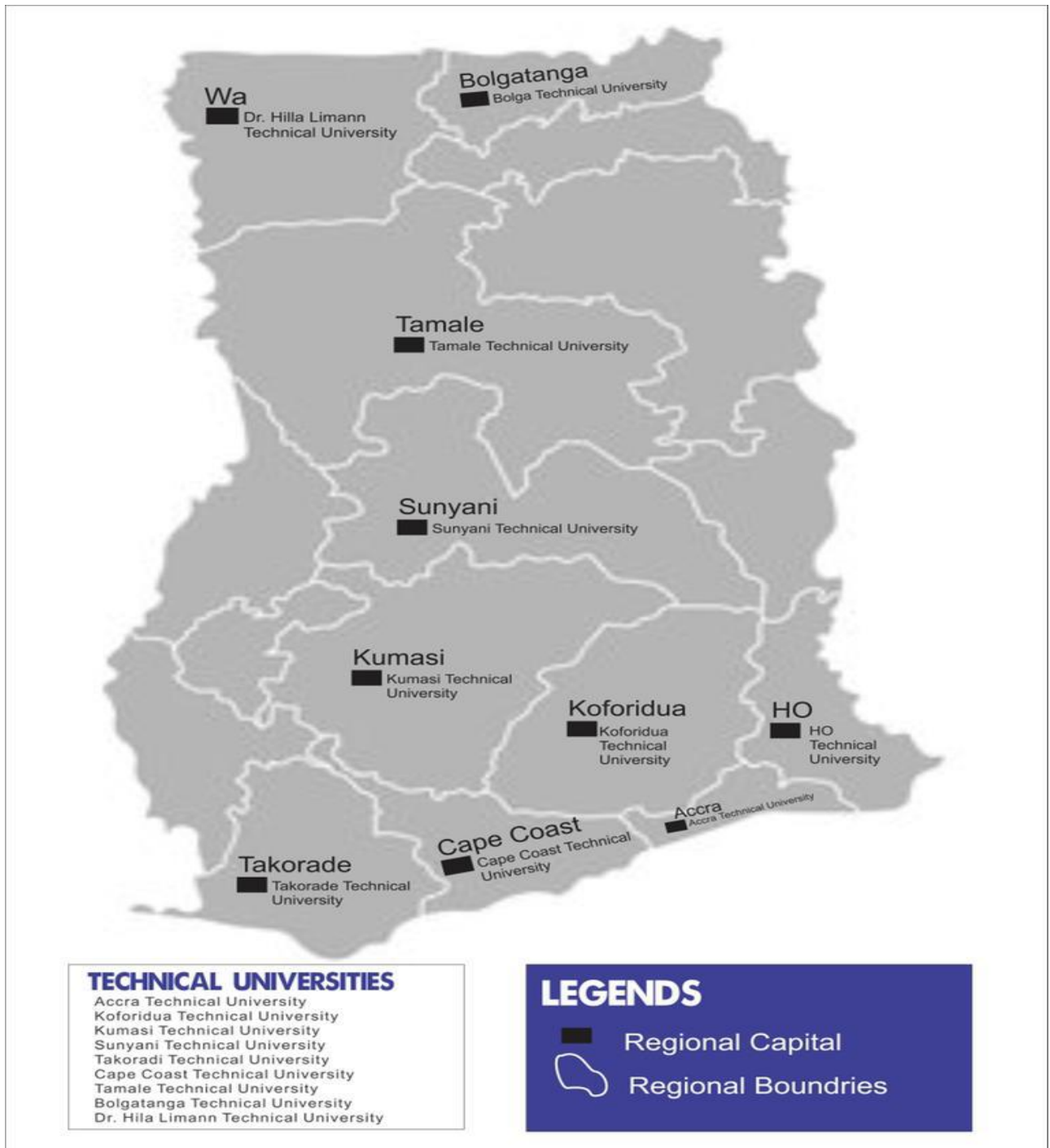
Figure 4.3: Distribution of the locations of the 10 TUs in Ghana (Source; author's field Data, 2021)

This study targeted all ten technical universities' (TU) libraries spread across Ghana to obtain a holistic assessment of the situation of low student usage of e-resources in the TU environment. Including all 10 TU libraries in the study allowed for an exhaustive collection of data for a holistic assessment of the research problem and to accomplish the research objectives as they pertain to the TUs in Ghana.

Five of the 10 university library systems had main libraries as well as satellite or branch libraries, while the remaining five had single library systems. The study focused on only the main libraries as participants. Because the main library of each TU functioned as the central point around which the entire library administration of the university revolved, including the registration of library users, As the focal points of the university library systems, the main libraries gathered and kept up-to-date records of registered library users, among whom registered student users' information was extracted. This allowed the researcher access to registered student users via their contact details (personal cell phone numbers and email addresses) at each campus library for data collection. Another reason for selecting the main libraries to participate in the study was the availability of library and information professionals within the main libraries for data collection. As the central administrative points of each campus library system, the main libraries provided leadership by directing and coordinating the administrative and operational activities of the entire university library system. The offices of the head librarians as well as other senior library professionals were, therefore, mostly found within the main libraries.

b) As part of the study's population, there were registered student users of the libraries, whose records were collected and stored in databases by the libraries. These registered students were part of the general user population. Other users of the libraries were the faculty, administrative staff, technical staff, and the entire membership of the university communities, as well as other researchers from the public. Students, who were registered as the libraries' users, were targeted because they were the subjects of the research problem (i.e., low student utilisation of e-resources in Ghanaian TUs). Only the registered students and not the general studentship were, thus, targeted because the researcher identified them as immediate users or direct beneficiaries who were well-positioned to give a proper assessment of their experience as users of available e-resources in the TU libraries. Also, the composition of the registered students reflected the general student population, making registered students' easier points for gathering relevant information about students' low utilisation of e-resources and the ways to optimise students' usage of them.

Contacting these registered student users of the libraries for data collection was considered quite easy by the researcher. Table 4.3 presents the population of TUs, and their main libraries and the number of student users registered by each library.

Table 4.3: Distribution of registered student users' population

TUs in GH	TUs Libraries	No. of Registered Students' Users	Valid %
Tamale Technical University (TaTU)	TaTU Library	**2,532**	**8.6**
Sunyani Technical University (STU	STU Library	**2,986**	**10.2**
Kumasi Technical University (KsTU)	KsTU Library	**5208**	**17.7**
Ho Technical University (HTU)	HTU Library	**2,200**	**7.5**
Koforidua Technical University (KTU)	KTU Library	**3,224**	**12.1**
Cape Coast Technical University (CCTU)	CCTU Library	**2,806**	**9.6**
Accra Technical University (ATU)	ATU Library	**5,088**	**10.5**
Takoradi Technical University (TTU)	TTU Library	**3,824**	**13.0**
Dr Hilla Limann Tech. University (DHLTU)	DHLTU Library	**1,500**	**5.1**
Bolgatanga Technical University (BTU)	BTU Library	**1,680**	**5.7**
		Total=29,364	**Total= 100**

Source: Field Data, 2020

As shown above, Table 3.1 gives the distribution of targeted registered student users from each of the targeted libraries. The sum of all registered students' users of all 10 main libraries was 29,364.

c) The third category of the study's population was senior library and information science professionals (academic librarians). The focus was on senior library professionals within the Ghanaian TU setting. This was because the senior library professionals bore and occupied academic positions and statuses analogous to faculty positions; therefore, their opinions and proposals on the issues under discussion in the study would bear a similar impact and influence as those of the faculty in pushing for policy change and policy formulation concerning students' patronage of e-resources within the TU settings. The senior library professionals' ranks ranged from assistant librarian, senior assistant librarian, deputy librarian, and head librarian. They were targeted as participants in the study because, through their positions, they handled issues of

students' information needs over the years and constantly interacted with students, which positioned them to better appreciate students' information needs and information-seeking behaviour. As both academics and professionals who constantly interacted with students, the library professionals were expected to know and understand students' seeking behaviours and habits and their resource needs. This made the library professionals better placed to provide relevant data, information, and ideas concerning the marketing of e-resources to their students. Table 4.4 presents the distribution of the population for qualitative data collection with the corresponding percentages of senior library and information science professionals (academic librarians) working in each of the libraries.

Table 4.4: Distribution of library professionals' population

TUs Libraries	No of Library Professionals	Population%
TaTU Library	3	8.8
STU Library	2	5.9
KsTU Library	5	14.7
HTU Library	3	8.8
KTU Library	5	14.7
CCTU Library	2	5.9
ATU Library	5	14.7
TTU Library	4	11.8
DHLTU Library	1	2.9
BTU Library	4	11.8
	Total= 34	**100**

Source: Field Data, 2020)

Table 4.4 is a distribution of the population of senior library and information science professionals from across the 10 libraries. The total number of senior library and information science professionals was **34**.

In a nutshell, the study population fell into three categories. The first category of the study's population was the 10 participating TU libraries. The second category of the study population targeted 29,364 registered student users of TU libraries for the quantitative phase of the study,

while the third category of the population targeted 34 senior library and information science professionals as the participants of the qualitative phase of the study.

To allow the researcher to ask participants more questions to generate richer data to accomplish the research objectives, there was a need to sample the study populations. As a result, there was a need for sampling. Sampling techniques and procedures were thus adopted to choose the actual participants and respondents of the study. The sampling was important because it helped select samples that were generalizable to the population of interest while ensuring high external validity. The sampling also made it possible for the researcher to avoid the difficulties involved in enrolling the entire population. Involving all members as respondents or participants for data collection for the study was going to be difficult, if not impossible (Rahman et al., 2022; Taherdoost, 2016). The researcher, therefore, needed to sample the population to proportionally represent each category (i.e., registered student users of the libraries and senior library and information science professionals). Looking at the targeted population, the first category of the study's population, consisting of 10 libraries, did not use any sampling technique because the entire population of libraries was included as participating institutions in the study. The second category of the targeted population (29,364), which consisted of registered student users of TUs libraries, were the respondents for the quantitative phase of the study, while the third category of the targeted population was 34 senior library and information science professionals who work in the libraries of the TUs libraries for the qualitative phase of the study. The next section deals with the processes that determined the sampling methods and procedures.

4.5.1 Sampling plan/design

Sampling, as described by Etikan and Babtope (2019:1006), and Rahman et al., (2022), is the process of selecting a group of representatives to serve as members of a larger population, allowing for accurate population definition. The current study used a mixed-methods approach that collected data from quantitative and qualitative sources (quantitative research generally requires a large

group, making it nearly impossible to study the entire population, as was the case with this study, which included 29,364 registered students' library users). Enumerating the entire registered student user population for the quantitative data collation for the study was expensive in terms of resources, time, and personnel, which is why sampling was so important in surveys (Bhardwaj, 2019). According to Bhardwaj (2019:157), it is a prerequisite in survey research that respondents be sampled in their respective stratum/strata, ensuring that everyone in the population of each stratum has a known probability of being chosen. To allow the generalisation of findings to the entire population, it is important to draw up a sample that is a good representation of the population. The sample size must be large enough to reflect the population but not too large, as this could result in resource waste.

In survey analysis, there are two types of sampling techniques: probability/random and non-probability/non-random sampling. In probability samples, every member of the population has an equal chance of being included in the analysis, while in non-probability samples, certain members of the population are unable to be chosen, resulting in a high level of sampling error (Berndt, A.E., 2020). This research thus used both probability and non-probability sampling. A stratified random sampling procedure was used to pick the student sample, with a purposive sampling procedure used to select library professionals. To come up with the right techniques for the sampling in this study, the researcher needed to clearly describe the sampling frame, which is the population list from which the sample or a portion of the sample is drawn (Chandrakumar & Vivek, 2023). The next section describes the sampling frame.

4.5.2 The sampling frame

A major component of the overall sample design is a sampling frame, which is a list of the whole population from which a sample is taken (Ngulube, 2015). As a major component of the overall sample architecture, the sampling frame of a study needs to be explained for a clear understanding of the population from which the sample was taken (Ngulube, 2020).

The list of registered student users of the 10 participating libraries of the 10 TUs in Ghana served as the sample frame or population list for the quantitative phase of the study. The list of registered student users formed the unit of the population from which the sample or a portion of the sample was drawn (Chandrakumar & Vivek, 2023) for the quantitative phase of the study. Registered student users of the libraries consisted of all students who had been officially registered as users of their campus libraries. The registration process allowed the researcher to capture certain relevant information about students that was needed for data collection. As the libraries keep custody of e-resources for use, the librarians captured onto their databases some relevant information to legitimise registered students as patrons on the libraries' records. Upon registration, the students are thus granted access to the library's electronic resources and services for their information needs. The libraries allowed the researcher access to databases containing records of students considered credible and up-to-date sources of information to facilitate data collection. Before choosing the sample, the sampling frame was checked for completeness, the likelihood of selecting each element was calculated, and duplicates were removed (Chandrakumar & Vivek, 2023; Ngulube 2015). Putting the lists from all TUs together, there were 29,364 elements in the list, which represented registered students' users. The list was very extensive, as it included information such as email addresses, cell phone contacts, department, study level, student numbers, names, etc. The researcher was able to reach or contact students for data collection thanks to the information about them.

The list of library professionals for each library also served as the sample frame for the qualitative phases of the study. The lists of library professionals from each library were acquired and complied with. The total list of library professionals was 34 and contained information such as names, designations, email addresses, cell phone contacts, and departments, which made it easy to determine which respondents met the criteria for the sampling and onward contact with respondents for interviews.

Having determined the sample frame, the researcher employed the relevant sampling technique, clearly describing the procedure followed in selecting the sample. The next section thus describes the sampling technique and procedure adopted to arrive at the sample size that represents registered students from each of the libraries in the TUs to collect quantitative data for the study.

4.5.3 Stratified random sampling process & procedure.

The stratified random sampling process was, therefore, used to arrive at a sample size that represented registered students from each of the libraries in the TUs as part of the population of the study. A stratified random sample is a subset of a statistical population in which all members within each stratum have equal chances of being chosen, resulting in an unbiased representation of the entire unit. Researchers sometimes use simple random sampling procedures for a study, using various methods. For instance, a researcher can use stratified sampling procedure by using the lottery method, where each member is assigned unique stratum, after which the participants are selected at random from each stratum. Stratified random sampling is a probability sampling method (Vasileiou, Barnett, Thorpe & Young, 2018:1; Vivek & Nanthagopan, 2021), and for Lall (2021), the adoption of a stratified random sampling process is a good one because it grants every unit of a larger population a chance of more than zero percent of being selected to form the sample.

The choice of a stratified random sampling process was made because the researcher wanted to achieve proportional representation of members from all strata, which allowed the researcher to allocate all units of analysis (registered students of the libraries) within the targeted population equal opportunity to be chosen as members of the sample for the study.

To conduct the selection process, the researcher first had to access the databases of registered student users at each participating library. This was because the library databases contained lists of all registered student users at each library. The information from the databases offered the researcher the opportunity to obtain the names, telephone numbers, and email addresses of all registered student users. The researcher, therefore, compiled lists from each library's databases

with all elements (names) and then assigned numbers unique to each member. These numbers were randomly picked from each library's list until the targeted number of participants (sample size) for every library was reached. This process fell in line with Vasileiou et al., (2018), who is of the view that one will need to list all members with each element from the sample frame, which are listed according to a mathematically random procedure that will allow the researcher to use a list of random numbers to decide which elements to select for the study.

The study, therefore, did not use any sampling procedure for selecting participating libraries, academic librarians, senior library professionals, or information professionals. The next sections explain the procedure used to determine the number of participating libraries as well as the number of library and information science professionals.

4.5.4 The census approach

The census approach was adopted for the academic librarians, senior library officers, and information professionals of academic staff status in the participating libraries. These participants provided data for the qualitative phase of the study. The census is a count or survey of all the elements of a given population (Ngulube,2005). In other words, the entire membership of this category of the population was included to participate in the qualitative data collection process of the study. It is not out of place to use the entire population as a sample, and this sort of approach is known as the census. In the census approach, a count or survey of all the elements of a given population is taken. A census is particularly said to be more attractive for small populations, although cost considerations mostly make it impossible for large populations. It was not out of place to use the entire population as the sample, and this sort of approach is known as the census. A census is particularly said to be more attractive for small populations, although cost considerations mostly make it impossible for large populations. One notable advantage of adopting the census approach was the fact that it eliminated sampling, a procedure that could result in a mistake known as the sampling error (Vivek & Nanthagopan, 2021; Lall, 2021).

Employing the census approach, all 34 library and information professionals across the 10 participating libraries were included in the study, bearing in mind that the sample size of library professionals in TUs was not very large. By adopting the census approach, the representativeness of this category of the study population was ensured and thus gave a signal of a better accomplishment of the study objectives ((Vivek & Nanthagopan, 2021; Lall, 2021). The choice to include all library and information professionals was to allow the gathering of comprehensive data that reflects the wholistic views of all senior-level academic librarians considered to have gathered enough experience concerning students' e-resource seeking behaviour, challenges, and other relevant data on low student usage of e-resources. The librarians were deemed well placed to provide relevant answers to the research questions because, through constant interaction with students, they were considered to have gathered enough experience concerning students' e-resource seeking behaviour, challenges, and other relevant data on low student usage of e-resources. As a result, e-librarians serve as intermediaries between students and information resources (e-resources), making them repositories of relevant knowledge and information required for marketing e-resources to maximise student utilisation.

Given the sampling procedures adopted, valid outcomes of representatives' participation in the study were realised. Thus, all TU libraries (10) were selected through census approaches to arrive at the total number of participating institutions and study areas. Valid representatives of 932 (3.2%) of the registered students' library users were also obtained using the stratified random sampling process to collect quantitative data. Also, 34 library and information professionals were selected through the census approach to participate in the interview to collect qualitative data.

4.5.5 Sample size

The number of individuals or elements in a sample is referred to as the "sample size." A sample is defined as a collection of elements taken from a larger population according to certain parameters (Vivek & Nanthagopan, 2021). The sample size used in the study was determined by the total

number of participants the researcher hoped to engage in the study. The sample size is thus calculated by the amount of sampling error an investigator is willing to tolerate as well as the variability within the population from which the sample is drawn (Vivek & Nanthagopan, 2021; Lall, 2021).). Research must use the required sample size to ensure that the findings are generalizable to the entire population (Ngulube 2005). It should be noted that an overly large sample size can be time-consuming and costly. One, therefore, needs an ideal sample that is within the acceptable range. To determine the sample size for the study, appropriate sample sizes were computed for each of the two phases (qualitative and quantitative) of the study. The registered student users across 10 participants were sampled for quantitative data collection, while the library information professionals were selected to participate in qualitative data collection. The following discussions give the sample sizes for each phase of the study.

a. **Sample size for quantitative phase**

To determine the sample size of registered student users to take part in the quantitative data collection process, the researcher used the Sample Size Calculator software by Creative Research System (CRS, 2012) to compute the numbers. Creative Research Systems (CRS) survey software provides its sample size calculator as a public service. Researchers are, therefore, allowed to use it to compute how many subjects they would need for a survey or interview to get results that accurately reflect the target population (Berndt, 2020:224-226; Ngulube, 2005).

The sample size formula used to compute the sample size for each study centre is as follows:

$$SS = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where:

SS = Sample Size

Z = Z value (e.g., 1.96 for 95% confidence level)

P= percentage picking a choice expressed as a decimal (.5 used for sample size needed)

C= confidence interval, expressed as decimal (e.g., .04 = ±4)

The plus-or-minus figure commonly presented in newspaper or television opinion poll findings is known as the confidence interval (also known as the margin of error). If you employ a confidence interval of 4 and 47% of your sample chooses an answer, you can be "confident" that if the question were asked of the full relevant population, between 43% (47-4) and 51% (47+4) would choose that answer.

The level of confidence indicates how certain you can be. It is represented as a percentage and indicates how frequently the genuine percentage of the population who would choose a particular answer fall inside the confidence interval. The 95% confidence level indicates that you can be 95% certain; the 99% confidence level indicates that you can be 99% certain. When one combines the confidence level and the confidence interval, one can state with 95% certainty that the genuine population percentage is between 43% and 51%. The larger the confidence interval you accept, the more certain you may be that the entire population's responses will fall within that range.

Researchers use the CRS sample calculator to determine the precision level of an existing sample. According to Ngulube (2005), a researcher can use a sample size calculator to compute the sample size at a 95% confidence level to generate accurate results within +/- 3% to +/- 5%. While a sampling error of 5% is deemed suitable, a 10% or lower sample error level is also acceptable, especially in situations where the interest of the researcher is to identify marginal relationships, differences, or any statistical phenomenon as the precursor to further studies (Berndt, 2020:224-226; Bhardwaj, 2019; Etikan & Babtope, 2019; Rahman et al., 2022). This study's margin of error, therefore, was 10% since the interest of the study was basically to determine the marginal relationships (cause and effect relationships) between marketing e-resources and students'

utilisation of the e-resources in TU libraries in Ghana. The confidence level of this study was, thus, of much greater significance than the sampling error level. At a confidence level of 95% and a 10% level of sampling error, the sample size was calculated for each library using the sample size calculator.

For this study, the sample sizes for each participating library were reached as proportional representations of the total number of registered student users per library. Consequently, the summation of sample sizes of registered student users from all 10 participating libraries produced a total sample size of 932. The sample size of the quantitative phase of the study is therefore 932, of which details, including the population of registered students per participating library and their corresponding sample sizes with their valid percentages, are presented in Table 4.5.

Table 4.5: Sample size for the quantitative phase of the study

Name of library	The population of Registered Student Users	Population %	Sample size per library	Sample Size %
TATU Library	2,532	8.6	93	9.9
STU Library	2,986	10.2	94	10.0
KsTU Library	5,208	17.7	95	10.2
HTU Library	2,200	7.5	93	9.9
KTU Library	3,540	12.1	94	10.0
CCTU Library	2,806	9.6	93	9.9
ATU Library	3,088	10.5	94	10.0
TTU Library	3,824	13.0	94	10.0
DHLTU Library	1,500	5.1	91	9.8
BTU Library	1,680	5.7	91	9.8
Total	**29,364**	**100**	**932**	**100**

Source: Field data, 2021

Table 4.5 shows the process that led to the determination of the study's sample size, which represented registered students' users for the quantitative data collection. The table shows the distribution of the sample size per participating library, giving the total sample size for the quantitative phase of the study as 932. Having determined the sample size for quantitative data

collection, it was time for the researcher to come up with a sample size for qualitative data collection.

b. The population for the qualitative phase

In the qualitative phase of the research, the richness and complexity of the data were important, as no formula could determine the "right" sample size, as Patten and Newhart (2017) stated. In qualitative research, one technique is to collect data until all the study's essential elements are saturated (Berndt, 2020). The researcher employed the census approach, which allowed the inclusion of the entire membership of the population's library and information professionals for the qualitative phase of the study. The census approach thus allowed the researcher to include the entire population of 34 members. These 34 members were a summation of all academic librarians from all 10 participating libraries. The motivation for using the census approach was that the total population was within an acceptable range to allow the researcher to conduct interviews to gather enough data to address the research question. The population for the qualitative phase of the study, therefore, was 34.

4.6 Data collection tools, methods, and procedures

This section discusses the research instruments, tools, techniques, and methods used to collect data for the study. Data collection instruments and procedures for Pattern and Newhart (2017) are the tools, methods, and means used to obtain research data, such as observation, survey questionnaires, interview guides, focus group guides, etc. This study used a concurrent triangulation of quantitative and qualitative approaches, which was meant to achieve accurate and consistent results (Frankfort-Nachmias et al., 2019). This, therefore, required appropriate data collection instruments to collect both qualitative and quantitative sets of data. The questionnaire and semi-structured interviews were the primary data collection instruments in this study. The researcher selected the questionnaire for the quantitative phase and the semi-structured interview guide plus documentary

analysis for the qualitative phase as instruments for the collection of data after carefully considering the intent of the study, the research questions, the type of data the study needed to gather, the paradigm/philosophical grounding, and related studies. The next discussion looked at the questionnaire, interviews, and documentary analysis as the primary data collection tools for the study.

4.6.1 Questionnaires

According to (Frankfort-Nachmias et al., 2019), "questionnaires are self-report data gathering tools that respondents or participants are each expected to fill out." The researcher designed and administered structured questionnaires (see Appendix 7) to respondents. The questionnaire included a variety of questions that allowed respondents to choose from a pre-existing collection of rigid dichotomy answers, such as "yes" or "no," and multiple-choice elements with the option of rating their responses on a Likert scale. The term "Likert Scale" refers to a survey or questionnaire item that uses a 5-point response scale (Christensen, Johnson, and Turner, 2015). Since it is one of the most used rating scales in social science, the Likert scale was considered ((Frankfort-Nachmias et al., 2019). The terms "Likert scale" and "questionnaire objects" are used interchangeably. The questionnaire also solicited respondents' opinions on the research questions. The questionnaire used in the current study had both closed-ended and open-ended elements.

a) The close-ended questions

The closed-ended questionnaire consisted of question items that provided a range of responses from which respondents were restricted in their choices. A variety of responses were provided on a Likert scale, with most respondents given a 5-point Likert scale ranging from strongly agree to strongly disagree. In some instances, the respondents were restricted to selecting a yes-or-no response. The questionnaire thus contained both Likert-scale and Yes-No types of closed-ended questions. The yes/no responses were used to explore the types of e-resources respondents

consulted and the sort of marketing tools their libraries used to create awareness. A "somewhat" option was provided if respondents were not so sure of their response. The Likert scale ranged as follows: 1 = very low (VL), 2 = low (L), 3 = average (Av), 4 = high (H), 5 = very high (VH); or 1 = strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A), 5 = strongly disagree (SA).

b) The open-ended questions

The open-ended questionnaire consisted of question items that gave respondents room to provide their responses. This option was used at the stage when the researchers could not think of providing all possible options; therefore, the chance was given to respondents to provide context-specific responses. The open-ended option was used as a complement to the Yes/No closed-ended option to elicit respondents' views on the causes of students' low usage of e-resources, the difficulties in students' accessibility of e-resources in the libraries, and contemporary marketing techniques required to influence students' optimal usage of the e-resources. Spaces were left for respondents to include issues that were not captured in the questionnaire.

4.6.1.1 Pre-testing the questionnaire

To prevent a situation of distortion, inaccuracy, and subjective answering of questions, the investigator in this study conducted what is referred to as "pre-testing" of the questionnaire. Pre-testing the research instrument gave the researcher the opportunity to improve the validity and consistency of the content, scale, formats, and quality in general. Therefore, 20 students, 10 each, from two participating technical universities in Ghana (KTU and ATU) were recruited as respondents to pretest the questionnaire. It is worth noting that the 20 students recruited as respondents to pretest the questionnaire were not included in the study population. The procedures allowed for an objective examination of all the questions and processes, which allowed the researcher to determine whether they would be understandable to the study participants (Kumar, 2019). It also entailed checking the understanding of the questionnaire with a small sample of the

population before distributing it to the entire population. Pre-testing, as Kumar (2019) suggests, should be carried out under real-world field conditions on a group of people close to the study population.

4.6.1.2 Administration of the questionnaires

The researcher, with the help of some benevolent library staff from each of the study institutions, spent 7 days in June 2021 administering the questionnaire to all 932 respondents from all 10 participating institutions using a survey monkey. A letter of introduction embedded in the questionnaire explained the purpose of the study, described the objectives of the study, assured the participants of the confidentiality of the information, and requested that completed questionnaires be returned to the researcher by a certain deadline. The terms were defined in the cover letter of the questionnaire to provide the minimum deviation in participants' understanding of the terminologies used. With the assistance of dedicated library staff from each study institution, the Survey Monkey online software was used to create and send surveys to respondents. The dedicated library staff helped the researcher send copies of the surveys to respondents via emails and WhatsApp social media platforms since all respondents' email addresses and cell phone contacts, of which some cell phone contacts were active on WhatsApp social media platforms, were earlier obtained by the researcher through the various registered student user library databases. This made it possible to have all the questionnaires distributed to respondents via emails and WhatsApp social media platforms within 7 days. The technology (survey monkey) that made it possible for the research instruments to be remotely distributed was particularly helpful, especially during the period that there is currently the COVID-19 pandemic, which is restricting physical human contact and interaction, without which it would have been very difficult for the researcher to meet all respondents physically to distribute the survey items. As a follow-up to the emailed questionnaires, the researcher personally reforwarded the questionnaires to all the respondents whose completed questionnaires were not yet received by the designated deadline, requesting their cooperation in

responding to the questionnaire. There was no attempt to coerce participants; rather, the researcher ensured that informed consent was obtained. The researcher sent regular mail and, in some cases, phone calls to respondents to remind them to complete and return the questionnaires.

4.6.2 Interviews

Interviewing in research is a data-gathering tool that demands that an interviewer interact with interviewees (participants) by asking pertinent questions concerning the research objectives (Johnson & Christensen, 2019). Interviews typically begin with a well-defined questioning strategy. However, in a more conversational interviewing style, the questions may be answered in a natural sequence with the flow of the conversation. The main motivation for qualitative research is to probe further and tell the storey without holding back. In the current study, therefore, a semi-structured interview guide was designed and used to elicit views anchored around the emotions and feelings of the participants, which demonstrated honesty and truth. The interview guide gave participants the leeway to feel calm and open (Creswell & Hirose, 2019). Using open-ended questions for the interview was part of a strategy to allow the participants to share some deeply emotional information and provide the researcher with data that had immense value.

In this study, the researcher physically visited the research field to collect this sort of in-depth information about the research problem and conducted a deep investigation by interviewing library professionals to elicit their views on marketing e-resources to students of TUs in Ghana.

4.6.2.1 Pre-testing the interview method

The interview schedule was pre-tested on three senior library and information professionals of the Koforidua Technical University, which was one of the study's chosen institutions. Similar to the questionnaire pretesting (Subsection4.6.1.1 refers), three senior library and information professionals who were used to pretest were not part of the study population. To ensure the process of collecting reliable and relevant data for the research report, pre-testing the data collection

instruments, in this case, the interview plan, was completed. It entailed procedures for objectively examining all the interview questions and processes, which allowed the researcher to determine whether they would be understandable to the study participants (Kumar, 2019).

4.6.2.2 The interview procedure

The researcher conducted interviews with the aid of semi-structured interview guides to guide the interview process of 20 participants (senior academic librarians). The interview was designed to initiate discussions about issues addressing each of the study objectives, such as the reasons for low student patronage of e-resources, accessibility issues, the current state of marketing e-resources, and contemporary marketing strategies to influence student optimum usage of e-resources. As already noted in previous sections, the choice of the participants was influenced by their knowledge and insights gained over the years through their experiences of interaction with students concerning their research needs and their behaviour in seeking out electronic resources.

Appointments were made ahead of the interviews. Each interview took 45 minutes and covered 14 days for the 10 participating institutions. The interviews were conducted across the 10 university libraries between March 2022 and July 2022. The data was collected from these participants through a face-to-face interview process until the study's basic elements were understood and discussed appropriately. The researcher recorded the interviews. COVID-19 concerns were mitigated by observing social distancing by sitting at least six metres apart between interviewer and interviewee. The researcher insisted on the wearing of a nose mask and the use of hand sanitizer before and after exchanging materials or documents with participants.

Soon after each interview, the field notes were written up, and the data was tested for completeness, comprehension, accuracy, and reliability. This phase is referred to as "cleaning" the data, and it is used to remove a variety of issues that may occur during data analysis (Silipigni & Powell, 2004).

This included reading the results, searching for unexpected answers, and double-checking the data coding before moving on to data analysis.

4.7 Validity reliability and trustworthiness of the research instruments

The study's reliability, validity, and trustworthiness are thoroughly discussed in this section. These considerations are unquestionably crucial, particularly in the context of mixed-method studies that include qualitative research components (Montuschi, 2014:123). Addressing these aspects is important because of the fundamentally subjective and value-laden nature of qualitative research (Montuschi, 2014:126).

4.7.1 Validity and reliability in the quantitative phase of the study

The concepts of reliability and validity, traditionally associated with quantitative research, extend their significance to qualitative research to some extent, as highlighted by Johnson and Christensen, (2019) and Creswell & Creswell (2017:55). Silverman (2015:28) underscores that reliability in the realm of quantitativeness refers to the degree of consistency exhibited when various researchers replicate research, serving as a measure of research outcome consistency. It can also be perceived as the steadfastness of research measurements (Johnson and Christensen, 2019) or how well an instrument consistently gauges concepts when deployed under the same conditions with identical respondents (Creswell & Creswell, 2017:55). Central to reliability is the concept of result reproducibility (Creswell & Creswell, 2017:51).

In contrast, validity concerns the precision with which a concept is accurately measured in quantitative studies. It also encapsulates the extent to which research findings faithfully mirror the social phenomena under scrutiny (Creswell & Creswell, 2017:51). Validity in quantitative research takes various avenues, encompassing face validity, content validity, construct validity, and criterion validity (Heale & Twycross, 2015:66). Face validity gauges the questionnaire's appropriateness by aligning its content with the intended measurements. Content validity ensures

the comprehensive capture of a construct's facets. Construct validity evaluates whether a tool effectively measures the designated construct. Lastly, criterion validity assesses if a research instrument correlates with other tools measuring the same variables (Heale & Twycross, 2015:66).

In this study, face and content validity emerged as strategies to ascertain the questionnaire's validity. Scrupulous efforts were invested in aligning questionnaire items with the concepts outlined in the literature and effectively addressing the research question. This comprehensive approach bolstered the credibility and robustness of the study's findings.

Within the quantitative domain of this research, meticulous attention was dedicated to the results' accuracy to ensure they genuinely reflected the intended measurements. A pre-testing phase encompassing 20 questionnaires was executed among students from Koforidua Technical University and Accra Technical University. The developed questionnaire and structured interview schedules underwent meticulous scrutiny by an information science expert (the researcher's supervisor), confirming their authenticity and suitability for data collection. This validation process solidified the instruments' aptitude to effectively capture the intricacies of marketing processes for electronic library resources among technical university students in Ghana.

The evaluation of reliability leaned on the prowess of the SPSS software, a potent analytical tool. Reliability estimates, symbolized by Cronbach's alpha coefficients ranging from 0.784 to 0.922, underscored the research instrument's dependability (i.e., the questionnaire) for data collection within the study. In summation, a deliberate focus on validity and reliability has fortified the research's foundation. The seamless alignment of the research instrument with its intended purpose, coupled with the consistent outcomes yielded by the instrument, fosters confidence in the precision and consistency of the ensuing research findings.

4.7.2 Trustworthiness in qualitative phase of the study

In the realm of qualitative research, the establishment of trustworthiness stands as a paramount concern. Notably, researchers such as Creswell and Creswell (2017:67) and Silverman (2015:28)

have formulated an array of strategies to fortify this essential aspect. These strategies, encompassing dependability, confirmability, credibility, and transferability (Silverman, 2015:28), interweave with the foundational principles of reliability and validity. Each strategy targets specific dimensions, contributing to a holistic assessment of the research's overall integrity.

Dependability, akin to reliability, centres on the coherence of findings across diverse iterations of qualitative research (Silverman, 2015:32). Conversely, confirmability examines objectivity in evaluating outcomes. It signifies the extent to which findings harmonise with the actual collected data, underscoring their authenticity. Credibility, mirroring internal validity, encompasses the trustworthiness and plausibility of findings. Transferability, aligned with external validity, scrutinises the feasibility of extrapolating qualitative research findings to distinct contexts (Silverman, 2015:20).

Each of these strategies necessitates meticulous attention throughout various phases of qualitative research, ensuring the study's reliability, internal and external validity, and trustworthiness. Each phase demands specific competencies to uphold methodological rigor. In the context of mixed-method studies, trustworthiness finds its assurance through inference quality and inference transferability. Inference quality evaluates the caliber of conclusions drawn from both quantitative and qualitative findings, encapsulating internal validity and trustworthiness within the research process (Silverman, 2015:28). Meanwhile, inference transferability gauges the extensibility of conclusions across diverse settings, contexts, and populations, mirroring external validity (Creswell & Creswell, 2017:55).

Creswell & Creswell (2017) propose a cohesive integration of inference quality and inference transferability into a unified framework for elevating trustworthiness in mixed-method research. This framework encompasses design appropriateness, design fidelity, within-design consistency, and analytic adequacy as crucial indicators. In the present study, these indicators were meticulously upheld. Design appropriateness ensured the adoption of fitting methods for capturing insights from

rice farmers. Design fidelity encompassed data collection from multiple stakeholders, incorporating methodologies like surveys and individual interviews to create a robust triangulation of data. Analytical adequacy, indispensable for internal validity and credibility, was maintained through meticulous data analysis processes. Additionally, inter-rater reliability, involving experienced graduates conducting independent analyses, mitigated subjectivity and amplified credibility.

Moreover, the practise of reflexivity, acknowledging researchers' roles in shaping the study, injects depth into the process (Creswell & Creswell, 2017:42). In the present study, the researcher's extensive background as an information scientist with insights into electronic library resources and marketing profoundly influenced the exploration. The researcher, while leveraging this background for probing inquiries, ensured that the respondents' voices took precedence, enhancing transparency in the interpretative journey. By intricately interweaving these strategies, the study meticulously cultivated reliability, validity, and trustworthiness throughout its data collection and analysis phases, thereby fortifying the credibility of its findings.

4.8 Data analysis and presentation

Data collection and analysis are important parts of any research process. To be able to make sense of and draw interpretations from the different categories of information forming part of the outcomes of the study, data collected through different instruments must be analysed and interpreted for trends, patterns, and meanings (Christensen et al., 2015:376). Working with data to characterize, discuss, interpret, test, and justify the data in terms of the research questions or hypotheses is what data analysis and organisation entail (Sheard, 2018). It is the method by which a researcher analyses and derives meaning from the data obtained to respond to the research questions (Mcleod, 2023). Data analysis in the current study, which is a mixed-methods study, required knowledge and strategies to analyse two data streams (i.e., quantitative, and qualitative). An account of how the two streams of data were analysed is given below.

a) Quantitative data analysis

This section examines the quantitative data analysis process used to answer the research's objectives and questions. To facilitate this meticulous analysis, the investigator developed a comprehensive codebook using SPSS software version 26.0. This software provided an extensive solution for data representation, modeling, and exploration. Known for its user-friendly interface, SPSS offers diverse data formats and tools to streamline data editing and transfer across different programmes (Johnson and Christensen, 2019).

Descriptive statistics were harnessed to elucidate the quantitative data, while statistical visualisations and spreadsheets were employed for in-depth visual scrutiny. The analysis of the quantitative data incorporated the identification of distribution variables, pinpointing outliers, and uncovering inconsistencies within the dataset. Detected discrepancies were rectified, and variables were recalibrated to generate the requisite outcomes. The presentation of results was accomplished through illustrative tables, graphs, and charts, accompanied by comprehensive explanations (Sheard, 2018.

For the examination of proposed relationships, the investigator employed structural equation modelling (SEM) using smartPLS version 4. This robust approach empowered the researcher to dissect intricate connections among multiple dependent and independent variables per construct simultaneously. As highlighted by Williams et al. (2009), SEM stands as a valuable research technique proficient in dissecting interrelationships among variables.

The study employs correlation and principal component analysis to test the relationships between the marketing strategies that influence students' use of e-resources. The correlation analysis conducted revealed the relationships among the quantitative variables. The correlation coefficient measures the linear relationship between two variables, and this is denoted by and takes the value between a highly significant perfect positive correlation

coefficient, a strong perfect negative correlation coefficient denoting a perfect relationship, a perfect inverse relationship, and a zero-correlation coefficient indicating no relationship. The multiple covariate component analysis is used to test for the linearity of the relationship between the two variables under study. This study also considers the multiple covariate principal component analysis since it comprises several predictor variables.

$$(y = a_p^T X = \beta_{p1}X_1 + \beta_{p2}X_2 + \beta_{p3}X_3 + \beta_{p4}X_4 + \ . \ . \ . \ + \beta_{pp}X_p)$$. Where, y is the mean responses variable ($\beta_{p1}, \beta_{p2}, \beta_{p3}, \beta_{p4}, ..., \beta_{pp}$), and the means coefficients of the predictor variables ($X_1, X_2, X_3, ..., X_{pp}$) are the means of the predictors.

Additionally, the study employs multiple covariate principal component analysis to assess the linearity between the studied variables. This approach is adopted due to the inclusion of several predictor variables. This represents the mean response variable while symbolising the mean coefficients of the predictor variables.

Principal Component Analysis, a multivariate statistical technique for analysing normalised orthogonal variables, is also employed. This technique utilises factor analysis to scrutinise the structural interrelationships between measured variables and latent constructs. Through principal component analysis, the researcher estimates the effects and relationships among multiple covariate variables. The evaluation method comprises four core steps. The initial step builds upon the correlation analysis findings and incorporates a significant test of factor loadings through the KMO and Bartlett's Test of Significance. The second step delves into the theoretical basis behind this technique, encompassing variable types, components (PCA and FA), and mathematical formulations. The third step entails the use of confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) to assess the construct validity of the measurement model. Lastly, the fourth step encompasses the

scrutiny of model validity through coefficient significance and fitted parameters. The data analysis is structured around the following hypotheses:

- ✓ **Ho1 -** No significant linear relationship or association exists between factor levels and low e-resource usage.

- ✓ **Ha1 -** The factor levels have a significant linear relationship or association with low e-resource usage.

- ✓ *Ho2***:** There is no significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

- ✓ *Ha2***:** There is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

- ✓ *Ho3*: There is no significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.

- ✓ *Ha3:* There is a significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.

- ✓ *Ho4:* No significant linear relationship or association exists between each factor level (ISB1-ISB10) and students' intention to use e-resources.

- ✓ *Ho4:* The factor levels have a significant linear relationship or association between each factor level (ISB1-ISB10) with students' intention to use e-resources.

b) Presentation of quantitative results based on the survey data

The survey yielded quantitative data collected from participants within the research domain. Following this, a rigorous process was applied to the numerical data to give a

comprehensive insight into the pertinent research topics. This meticulous data refinement was achieved through the utilisation of several powerful tools, namely the Statistical Package for Social Sciences (SPSS) version 26.0, structural equation modelling (using SmartPLS version 4), and the versatile Microsoft Excel application software. The outcomes of these concerted efforts are meticulously showcased in the subsequent Chapter 4.

In this study, the quantitative data is ingeniously presented through the lens of descriptive statistics. These statistics encompass essential parameters like N values, frequencies of mean values, and percentages, rounded to a single decimal point. Additionally, the presentation is enriched through visually informative mediums such as tables, charts, and graphs. These visuals serve as dynamic aids to comprehend the underlying patterns and trends in the data.

By employing a combination of rigorous analysis tools and adept presentation techniques, the study provides a lucid depiction of the quantitative findings. This approach ensures a thorough exploration of the survey data and adds depth to the subsequent discussions in Chapter 4.

c) Qualitative data analysis

Thematic content analyses were used to code qualitative data obtained from interviews and document analysis. A systematic, analytical study of the occurrence of terms, phrases, and ideas in books, articles, images, and other types of materials is known as "content analysis" (Vivek & Nanthagopan 2021). Data reduction (the process of selecting, focusing, simplifying, abstracting, and transforming data into written-up field notes or transcriptions); data display and conclusion drawing; and verification (which feeds back into the research design up to the last moment of data gathering) are three concurrent, interactive, and cyclical flows of activity in qualitative data analysis (Chandrakumar &

Vivek, 2023). The researcher analysed data consistent with the research objectives and questions. The interview proceedings were voice-recorded. For the sake of accuracy, the investigator transcribed the interview soundtracks and voice recordings, with the necessary checks to make sure the transcripts were authentic and represented the original voice recordings. Using a list of prearranged codes that were used earlier for the coding of the data, thematic categories for the main issues were compiled (Mcleod, 2023). A codebook held the tags of codes in one column, a definition of codes in another column, and then exact examples such as line numbers in which the codes were seen in the transcripts.

d) Presentation of qualitative data

The findings from the semi-structured interviews are from the qualitative phase of the study. The semi-structured interview guide (Appendix 7) was used to seek opinions from library and information professionals across the 10 TUs the study covered. The interview sessions were recorded for the researcher to later re-listen in order to ensure correctness, with only the salient answers transcribed as part of the analysis and presentation of the findings. The procedure for thematic data analysis was adapted for this aspect of data analysis (Mcleod, 2023). During the presentation of the data, anonymity is maintained by assigning nondescript identifications to the participants, such as Participant 1, 13, 19, etc. The qualitative part of the study targeted a census of 34 participants. However, due to difficulties in scheduling interviews with some participants, primarily due to the COVID-19 outbreak and its resultant restriction on human movements and human interaction at the time, twenty-one (21) participants were interviewed. The qualitative data were collected through semi-structured interviews with participants and documentary analysis. A semi-structured interview guide (Appendix 7), which guided the interviews with the participants, had a total of seven (7) sections, with each having major root questions and complemented by at least four follow-up questions in each part or section. The data from the qualitative

sources is thus collected and processed concurrently with the quantitative data to give a complete picture of the research issues. The thematic content analysis and narrative write-up were used to concurrently present the qualitative results alongside the quantitative results. The findings are presented thematically in the order of the objectives to which they correspond.

4.9 Ethical considerations

UNISA's procedures on ethics involving the conduct of academic research (2016) guarantee that the rights and welfare of human respondents and organisations are safeguarded. Given the possibility that information gathered while conducting this research could have violated the confidentiality and self-esteem of participants and third parties, the researcher took precautions to protect privacy and maintain confidentiality. Since the study included human subjects, ethical concerns including confidentiality, privacy, avoidance of deceit, and anonymity were considered when the questionnaires were being drafted.

a) **Ethical clearance:** ethical clearance was obtained after a review and approval by the Unisa Research and Ethics Committee of the documentation, which included the research plan, survey instruments, informed consent form, and authorization to research TUs' staff and students. The Unisa Research and Ethics Committee issued an ethical clearance letter (attached in Appendix C) that permitted the researcher to use students, library staff, and sources of secondary literature on TUs in Ghana for the study. Among other statistics, the researcher obtained the email addresses and cell phone contacts of registered student users of the libraries as well as the library professionals in all 10 TUs. Survey Monkey, an online survey software, was used to distribute the surveys.

b) **Informed consent:** a cover letter was attached to both questionnaires and semi-structured interview guides, detailing the purpose of the study, and providing an informed consent form as per the requirements of the Unisa Research and Ethics Committee. The cover letter

obtained was a written statement of authority from the establishment of the Unisa Research and Ethics Committee at Unisa to formally introduce the researcher, confirming the credibility and authenticity of the researcher to the management of the TUs (participating institutions). A consent form was prepared for participants to sign before engaging them in the research. The right to participate was made voluntarily, and the decision to pull out at any time deemed necessary was stated and explained to participants before the commencement of the data collection process. The purpose and procedure of the study were also clarified in the questionnaire and during the interview sessions. Furthermore, the researcher ensured the anonymity of both participants and respondents by revealing the identities of individuals, roles they played, and activities they participated in during the research process.

c) **Covid 19 protocols and concerns:** Mitigating COVID-19 concerns was of high priority to the researcher. Measures were kept in place to adhere to the COVID-19 Protocols. Even though the qualitative data was collected face-to-face, interview schedules Concerns about breaching COVID-19 protocols were addressed. The researchers put in place measures to prevent physical contact with participants. Appointments were made ahead of the interviews, and data was collected from these participants through a face-to-face interview process with strict adherence to the COVID-19 prevention protocols. The researcher insisted that participants maintain an attitude of social distancing by sitting at least six metres apart between interviewer and interviewee. The researcher insisted on the wearing of a nose mask and the use of hand sanitizers before and after exchanging materials or documents with participants. But where it was impossible to meet face-to-face, remote contacts were arranged in their place. Getting access to a strong enough internet connection to carry out voice or video interviews was the challenge in this Communicating through voice calls and video calls makes research difficult compared to face-to-face contact. Using voice notes to follow up and continue communication with participants after an interview.

4.10 Summary of Chapter 4

Chapter 4 has dealt with the methodology of the study, detailing the systematic and methodical process followed in conducting the entire research and solving the research problem. The chapter highlights the philosophical perspectives that motivate the researcher. It also outlines the research approach, the design, population, sampling procedures and methods, data collection and analysis procedures, and how they influence the methodological choices concerning specific aspects of the study. The next chapter, Chapter 5, comprises the data analysis and presentations of the findings of the research.

CHAPTER 5:

DATA ANALYSES AND PRESENTATION OF RESULTS OF THE STUDY

5.1 Introduction

The preceding chapter established the methodological foundation for collecting and evaluating data in response to the research questions for the study. The goal of this chapter is thus to present an empirical analysis of the results and findings. Data analysis, according to Bryman (2016:329), is the organisation, analysis, and interpretation of data gathered, and based on the results, inferences and deductions are drawn to answer the research questions. This study adopted a concurrent mixed-method approach, which consisted of a quantitative survey involving 932 registered student users of 10 technical universities (TUs) libraries in Ghana and a qualitative census involving the views and opinions of 34 library and information professionals in the same institutions.

Given that this study was based on a concurrent mixed-methods design, data was gathered employing the concurrent triangulation mixed-method methodology that included the questionnaire and semi-structured individual interviews as its main data sources (Creswell, 2014:273). The survey questionnaire included closed-ended questions supplemented with open-ended questions to cure the situation of inherent biases and omissions that come with sole reliance on closed-ended questions, in accordance with the position or view held by some writers (Dawson, 2019:12; Creswell and Clark, 2017:14). The interview questions were thus open-ended.

The data collection tools (survey questionnaire and interview guide) were designed to answer the following primary study questions: What factors are causing students' low e-resource usage? (ii) What are the difficulties associated with students' e-resource usage? (iii) What is the status of marketing e-resources to students in TU libraries? (iv) What contemporary marketing strategies are available for marketing e-resources? (v) What competencies are required of library staff in marketing e-resources to students? and (vi) What innovative marketing strategies are proposed for

TU libraries to influence optimal student patronage of their e-resources? The collected data was thus analysed, and the results were presented. Both quantitative and qualitative data were collected and processed concurrently, then the results were compared side by side during the discussion in the next chapter (Chapter 5) to give a comprehensive picture of the research issues. A further description of how the data gathered from both quantitative and qualitative sources is analysed and presented in this study is given as follows:

5.1.1 Analyses and presentation of quantitative results based on the survey data.

Data from quantitative sources was gathered from respondents via a survey in the field of research. The quantitative data was thus processed to give a complete picture of the given research issues using the Statistical Package for Social Sciences (SPSS) version 23.0, structural modelling equations (PLS), and Microsoft Excel application software, and the findings are presented in this chapter as frequencies, percentages rounded up to one decimal place, charts, and graphs.

The study employed correlation and principal component analysis to test the relationships between the marketing strategies that influence students' utilisation of e-resources. The correlation analysis conducted revealed the relationships among the quantitative variables. The correlation coefficient measured the linear relationship between two variables, and this is denoted by r and takes the value between $-1 \leq r \leq 1$. A highly significant perfect positive correlation coefficient $(0.9 \leq r \leq 1.0)$ a strong perfect negative correlation coefficient denotes a perfect relationship $(-0.9 \leq r \leq -1.0)$ indicate a perfect inverse relationship and a zero-correlation coefficient $(r = 0)$ indicates no relationship. The multiple covariate component analysis is used to test for the linearity of the relationship between the two variables under study. This study also considers the multiple covariate principal component analysis since it comprises several predictors variables.

$$(y = a_p^T X = \beta_{p1}X_1 + \beta_{p2}X_2 + \beta_{p3}X_3 + \beta_{p4}X_4 + \ . \ . \ . \ + \beta_{pp}X_p).$$ Where, y is the mean responses variable ($\beta_{p1}, \beta_{p2}, \beta_{p3}, \beta_{p4}, ..., \beta_{pp}$), and the means coefficients of the predictor variables ($X_1, X_2, X_3, ..., X_{pp}$) are the means of the predictors.

Principal Component Analysis, which is a multivariate statistical analysis technique used to analyse normalised orthogonal variables, was also deployed for the analyses. This technique makes use of factor analysis and is used to analyse the structural relationships between measured variables and latent constructs. Principal component analysis allowed the researcher to estimate the effect and the relationships between multiple covariate variables. The method of evaluation was grouped into four main steps. Step one followed up on the results from correlation analysis and included a significant test of the factor loadings by using the KMO and Bartlett's Test of Significance.

The second step looks at the brief theoretical basis behind this technique: types of variables, components (PCA and FA), and mathematical formulation. The third step describes the use of confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) to evaluate the validity of the constructs of the measuring model. The last step is the analysis of the validity of the model using the significance of the coefficients and the fitted parameters. The data was analysed based on the following hypothesis:

Hypothesis Testing:

- ✓ **Ho1 -** No significant linear relationship or association exists between factor levels and low e-resource usage.
- ✓ *Ha1* **-** The factor levels have a significant linear relationship or association with low e-resource usage.
- ✓ *Ho2***:** There is no significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

- ✓ **Ha2:** There is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

- ✓ **Ho3**: There is no significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.

- ✓ **Ha3:** There is a significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.

- ✓ **Ho4:** No significant linear relationship or association exists between each factor level (ISB1-ISB10) and students' intention to use e-resources.

- ✓ **Ho4:** The factor levels have a significant linear relationship or association between each factor level (ISB1-ISB10) with students' intention to use e-resources.

5.1.2 Analysis and presentation of qualitative data

The findings from the semi-structured interviews are the qualitative phase of the study. The semi-structured interview guide (Appendix 7) was used to seek opinions from library and information professionals across the 10 TUs the study covered. The interview sessions were recorded in order for the researcher to later re-listen in order to ensure correctness, with only the salient answers transcribed as part of the analysis and presentation of the findings. Braun and Clark's (2013:34) procedure for thematic data analysis was adapted for this aspect of data analysis. During the presentation of the data, anonymity is maintained by assigning nondescript identifications to the participants, such as Participant 1, 13, 19, etc. The qualitative part of the study targeted a census of thirty-four (34) participants. However, due to difficulties in scheduling interviews with some participants, primarily due to the COVID-19 outbreak and its resultant restriction on human movements and human interaction at the time, twenty-one (21) participants were interviewed.

The qualitative data were collected through semi-structured interviews with participants and documentary analysis. A semi-structured interview guide (Appendix 7), which guided the

interviews with the participants, had a total of seven (7) sections, with each having major root questions and complemented by at least four follow-up questions in each part or section.

The data from the qualitative sources was thus collected and processed concurrently with the quantitative data to give a complete picture of the research issues. The thematic content analysis and narrative write-up were used to concurrently present the qualitative results alongside the quantitative results. The findings are presented thematically in the order of the objectives to which they correspond.

The next section analyses and presents the statistics on the responses of both the quantitative and qualitative sources in this study.

5.2 Response statistics

Two sections are used to present the study's findings about response statistics. The first segment discusses the survey questionnaire response statistics, while the second discusses the response rate to the interviews used to acquire qualitative data. So, whereas Section 4.2.1 gives the analysis of the statistics of questionnaire responses, Section 4.2.2 presents the response rate of interview participants.

5.2.1 Statistics of questionnaires' responses

As was indicated in Chapter 3 (i.e., as discussed in Section 3.5.1 to be precise), the total number of registered student users of 10 TUs' libraries in Ghana was 29,766, out of which nine hundred and thirty-two (932) respondents were randomly sampled to participate in the quantitative aspect of the study. 712 of the 932 questionnaires distributed were returned, representing 76.4%. But upon a closer scrutiny of the returned questionnaires, it was found that six were unusable, and thus 706 (75.6%) became the final response rate. The response rate of 75.6% was thus considered sufficient for the success of the study since, according to Bryman (2012:235), response rates of 60%–69% are quite acceptable. Furthermore, Blumenberg et al. (2019) considered a response rate of 54.3%

in a web-based survey of 1277 students quite acceptable. Therefore, the rate of response of 76% is considerably higher than the 60% rate often deemed to be very good (Babbie 1989:242; Creswell:65; Morten, Bandara, Robinson, and Carr, 2012).

The statistics of the responses to the questionnaire were processed, and the findings were presented in frequencies, percentages, charts, and graphs using the Statistical Package for Social Sciences (SPSS) version 23.0. The statistics of the responses gathered from the distributed and received questionnaires are presented in Table 5.1.

Table 5.1: Statistics of questionnaire response rate

Libraries studied (N=10)	Sample of the survey administered per Library (N=932)	Response Per Library	Response percentage
TATU Library	93	62	**6.7%**
STU Library	94	64	**6.9%**
KsTU Library	95	78	**8.4%**
HTU Library	93	79	**8.5%**
KTU Library	94	92	**9.8%**
CCTU Library	93	55	**5.9%**
ATU Library	94	85	**9.1%**
TTU Library	94	81	**8.7%**
DHLTU Library	91	59	**6.3%**
BTU Library	91	51	**5.5%**
Total	**932**	**706**	**75.6%**

Source: Field Data, 2022

Table 5.1 depicts the results of the response rate to questionnaires administered to students in a survey conducted among 10 technical universities (TUs). The total sample size of the survey was 932, with each library receiving a sample size of 93 to 95 students. The results show that the Koforidua Technical University (KTU) recorded the highest response rate of 9.8%, while the Bolgatanga Technical University (BTU) recorded the lowest response rate of 5.5%. The total response rate for the survey was 75.6%. These results indicate that there is variability in the response rates across the different TUs. Further analysis of the response rate of the interview participants may provide insight into the reasons for these differences. The next section presents an analysis of the response rate of the interview participants.

5.2.2 Response rate of interview participants

The study targeted a total of thirty-four (34) participants across 10 technical universities' (TUs) libraries. Primarily, the participants were library and information professionals distributed across the 10 TUs' libraries. Data on the rate of response of participants were gathered and analysed after a five-month arduous task of data collection via semi-structured one-on-one interviews with participants. To ensure that participants' anonymity is protected, the participating TU libraries involved in the study were assigned code names (i.e., TU1 Library, TU2 Library... TU10 Library). The results on the rate of response were summarised in Table 5.2.

Table 5.2: Response rate of interview participants

Library studied (N=10)	Census of Library professionals (N=34)	Census percentage Per Library	Response Per Library	Response percentage
TU1 Library	5	14.7%	3	**8.8%**
TU2 Library	6	17.7%	3	**8.8%**
TU3 Library	3	8.8%	2	**5.9%**
TU4 Library	3	8.8%	2	**5.9%**
TU5 Library	5	14.7%	3	**8.8%**
TU6 Library	2	5.9%	1	**2.9%**
TU7 Library	3	8.8%	2	**5.9%**
TU8 Library	3	8.8%	2	**5.9%**
TU9 Library	1	2.9%	1	**2.9%**
TU10 Library	3	8.8%	2	**5.9%**
Sub Total	**34**	**100**	**21**	**61.7%**

Source: Field Data, 2022

As seen in Table 5.2, all 10 targeted technical university libraries participated in the study. However, the targeted census population of 34 library and information professionals was not realised as twenty-one (21) participants, representing a 61.7% response rate as seen in Table 5.2, responded to the semi-structured interviews. Even though the goal of achieving a much higher response rate was not realised due to the inherent limitations encountered (Blumenberg et al., 2019:626; Blumenberg and Barros 2018, In reaching some of the targeted participants during the

data collection process, the existing literature rarely specifies a precise response rate deemed to be appropriate (Baker and Edwards, 2012:6) in qualitative interviews. The appropriateness of the rate of participation in a qualitative study is said to depend on the balance between representativeness and quality of responses in obtaining sufficient information (Alvesson and Ashcraft, 2012, cited in Saunders and Townsend, 2016:2; Baker and Edwards, 2012). Qualitative researchers are admonished to focus on data saturation rather than higher response rates, especially when the study participants are drawn from homogeneous populations in qualitative studies, regardless of the number of responses (Saunders and Townsend, 2016:2; Baker and Edwards, 2012; Patton, 2015).The researcher in this study believes that there is a balance between representativeness and quality in obtaining sufficient information across all of the libraries from the 10 TUs involved in the current study. Ostensibly due to the absence of personal contact or touch, the response rate (61.7%) was deemed sufficient by the researcher because there was a balance of representations as well as quality information attained for the study from a homogeneous population of library and information professionals from Ghanaian TUs.

The section that comes next presents the results from the analysis of the data gathered on the sociodemographic details of respondents.

5.3 Respondents' socio-demographic data

First on the questionnaire (appendix 7) was Part I which contained research questions 1 to 5 that sought for respondents' profile information. Data was gathered regarding institutions of respondents, gender, age range, level of study, and faculty of study to which students belong. The basic socio-democratic data analysis is presented in Table 5.

Table 5.3: Respondents' socio-demographic data (N=706)

Type of Respondents Background Information	Technical Universities (TUs)	Sampled population (932)	Frequency of Respondents	response per university
Universities (TUs)	TATU Library	93	62 (66.7%)	6.7%
	STU Library	94	64 (68.8%)	6.9%
	KsTU Library	95	78 (83.9%)	8.4%
	HTU Library	93	79 (84.9%)	8.5%
	KTU Library	94	92 (98.9%)	9.8%
	CCTU Library	93	55 (59.1%)	5.9%
	ATU Library	94	85 (91.4%)	9.1%
	TTU Library	94	81 (87.1%)	8.7%
	DHLTU Library	91	59 (63.4%)	6.3%
	BTU Library	91	51 (54.8%)	5.5%
Gender of Respondents	Male		366	51.8%
	Female		332	47.0%
	Prefer not to say.		5	0.7%
	Non-Binary		3	0.4%
Age-Range	15-20		103	15%
	21-25		325	46%
	26-30		194	27.1%
	31-35		65	9.2%
	36-40		19	2.7%
Level of Study	Post Graduate Degree		36	5.1%
	Undergraduate Degree		251	35.6%
	Higher National Diploma		353	50%
	Professional Diploma		41	5.8%
	TVET		20	2.8%
	Others		5	0.7%
Faculty of Study	Business & Mgt. Studies		210	29.7%
	Engineering		145	20.5%
	Built & Natural Environment		114	16.1%
	Applied Sci. & Technology		104	14.7%
	Health & Allied Science		94	13.3%
	Applied Arts		37	5.2%
	Others		8	1.1%

Source: Fieldwork, 2022.

The results in Table 5.3 are further interpreted in the succeeding subsections under the headings: distribution of respondents per institution, gender distribution of respondents, age distribution, distribution of the level of study, and distribution of faculty of study. Data were processed, and the findings are presented using frequencies, percentages, charts, and graphs using the Statistical Product and Services Solution (SPSS) version 26.0 and Microsoft Excel.

5.3.1 Distribution of respondents per institution

The rate of response to the administered survey questionnaire shows that Koforidua Technical University (KTU) Library recorded the highest response rate (9.8%), while Bolgatanga Technical University (BTU) yielded the least rate of response, which is 5.5%. KTU recorded the highest rate of response, probably because that is the institution where the researcher works and, therefore, is personally known to the respondents, which thus motivated respondents to participate in the survey. The closer proximity of respondents for easy reminders and follow-ups also influenced the higher rate of participation. The average mean response is 7.7.

5.3.2 Gender distribution of respondents

Data on the gender of respondents presented in Table 5.3 indicate that a majority (51.8%) of the respondents were male, closely followed by 47.0% who were female, while 0.7% of the respondents indicated they preferred not to disclose their gender and 0.3% indicated they were non-binary sexually oriented respondents. The near parity in gender distribution in the results, especially between the dominant categories of male and female, indicates that there is sufficient representation of views in terms of gender. The results give an indication that the results are consistent with reports in the Tertiary Education Statistics Report for the 2015-2016 academic year (National Accreditation Board, 2016: 1) that the gender ratio gap between males and females was closing as it was recorded to be 3 to 2. The findings reflect Ghana's efforts to provide its citizens with equitable higher education that is free of gender discrimination. Ghana's commitment to international agreements informs its objectives for promoting equity in higher education. The Universal Declaration of Human Rights (UDHR), which was adopted in 1948, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the World Declaration on Equality for All, which was adopted in 1990, the Millennium Development Goals, which were adopted in 2000, and the International Covenant on Economic, Social, and Cultural Rights are among some important international agreements signed onto to ensure the promotion of equity in

higher education (Ministry of Education, 2015). Albeit not significant in relation to the total number of respondents (706), the results indicate a rather interesting phenomenon where 0.7 percent of respondents preferred not to reveal their gender. Another percentage (0.3%) of the respondents identified their gender preference as nonbinary. These findings (i.e., preferring not to disclose and non-binary oriented genders) suggest that, in addition to the dominant genders of male and female, other gender orientations exist in Ghanaian tertiary institutions. The following section contains analyses of the age distribution of respondents.

5.3.3 Respondents' age distribution

The age distributions of respondents are presented in ranges in Table 5.3. The findings show the age breakdown of the respondents in the study. Table 5.2 shows that 15% of respondents thought they were between the ages of 15-20 years. The results also indicate that 46% of the respondents fell between the ages of 21 and 25. In addition, 27.1% of those polled were between the ages of 26 and 30. The rest of the results on the age distributions of respondents were 9.2% who fell in the range of ages between 30-35, while 2.7% of the respondents fell between 36-40 age brackets. This analysis concerning the age group of respondents generally gives the impression that most of the respondents (students) within the various technical universities in Ghana are relatively young. The majority, of the respondents fell between the ages of 20 and 25. This result also gives the impression that more and more young people are coming out of tertiary schools at very young ages, so stakeholders may have to position the job market in readiness to absorb the teaming youth who are graduating from tertiary institutions at very young ages. The results also indicate that the patrons of libraries within tertiary institutions are very youthful; thus, library and information professionals may need to tailor their resources and services to reflect the information-seeking needs of such age brackets. The next section presents the results on the distribution of respondents' levels of study.

5.3.4 Distribution of respondents' level of study

Levels of study among respective respondents involved in the study were analyzed, and the results are presented in Table 5.3. Among the 10 technical universities involved in the study, three hundred and fifty-three (353), representing 50% of the total respondents to the study, were noted to be students pursuing Higher National Diploma (HND) degrees. This was followed by two hundred and fifty-one (251) respondents, representing 35.6%, who were students pursuing various undergraduate degrees. The outcome of the analysis also depicted that forty-one (41) respondents, representing 5.8% of the respondents, were students at the professional diploma certificate level, thirty-six (36) respondents, representing 5.1 respondents, were postgraduate students, and twenty (20), which represented 2.8% of the respondents, were students pursuing various programmes at the technical and vocational education (TVET) level, while five (5) respondents indicated they were pursuing their programmes at levels other than the ones mentioned.

As depicted from the statistics, the majority (50%) of the respondents were students pursuing various courses at the High National Diploma (HND) level. This implied that half the student population of the Ghanaian TUs are HND students. It can therefore be deduced from the results that Ghanaian TUs are not highly attractive to undergraduate students as compared to the traditional public universities. It could be postulated that the available HND programmes in TUs are more numerous than the available undergraduate, MTech, professional diploma, and TVET programmes. This indicates that TUs in the coming years may have to do more to gain accreditation to widen their focus beyond HND degrees with new academic programmes of study. This, for example, could earn the TUs more undergraduate students, just like the traditional public universities in Ghana. The succeeding section presents the results from the analyses of the data on the distribution of the faculty of study among respondents.

5.3.5 Distribution of respondents' faculty of study

The faculty of study of the respondents was also assessed. From the analysis of the results as depicted in Table 5.3, the majority (210) representing 29% of the total respondents were students of the Faculty of Business and Management Studies (FBMS). This was followed by 145, which represented 20.5% of the total respondents who were from the Faculty of Engineering (FoE). Also, respondents from the Built and Natural Environment (FBNE) were 114, which represents 16.1% of the total respondents; respondents from the Faculty of Applied Science and Technology (FAST) were 104, representing 14.7%; 94 respondents, representing 13.3%; 37 respondents, representing 5.2%; and 8 respondents, representing 1.1% of respondents, were from other faculties whose names were not mentioned.

It is deduced from the data that, with respect to the respondents' faculty of study, the majority, of the students at Ghanaian TUs were pursuing social science disciplines. The results from the statistics depicted that the majority (29%) of respondents were students of the Faculty of Business and Management Studies (FBMS). This indicates that regardless of their mandate, which required TUs to focus more on technical, vocational, engineering, and applied sciences, the reality is that the majority, of enrolled students are pursuing programmes of study that fall within the social and human sciences. The next section is the analysis of the results and presentation of the findings on the background information of participants in the interviews, which gathered the qualitative data.

5.3.6 Background information of interview participants

In the first section of the interview guide, the research aimed to explore the sociodemographic profiles of the participants involved in the study. This included gathering information on the age distribution, marital status, educational level, and years of experience as a library and information professional. The demographic details of the participants are summarised and presented in Table 5.4, providing a comprehensive overview of the characteristics of the study's participants.

Table 5.4: Background Information of Participants

Institution code	Participant s' Codes	Gender		Age	Status	Level of Education	Years of practice
TU1 Library	PART-1	Male		56	Ag. Head Librarian	MA	12
	PART-2	Female		41	Asst. Librarian	MSc	9
	PART-3	Male		43	Asst. Librarian	MA	10
TU2 Library	PART-4	Female		48	Head Librarian	MPhil	15
	PART-5	Female		43	Asst. Librarian	MA	8
	PART-6	Male		44	Asst. Librarian	MA	13
TU3 Library	PART-7	Male		41	Head Librarian	MPhil	18
	PART-8	Female		47	Asst. Librarian	MPhil	12
TU4 Library	PART-9	Male		52	Head Librarian	PhD	15
	PART-10	Female		39	Snr Asst. Librarian	MPhil	12
TU5 Library	PART-11	Male		58	Head Librarian	MPhil	19
	PART-12	Female		38	Snr Asst. Librarian	PhD	16
	PART-13	Male		32	Assistant Librarian	MSc	9
TU6 Library	PART-14	Male		48	Asst. Librarian	MPhil	18
TU7 Library	PART-15	Female		42	Head Librarian	PhD	10
	PART-16	Female		45	Asst. Librarian	MPhil	11
TU8 Library	PART-17	Male		49	Ag. Head Librarian	MPhil	9
	PART-18	Female		41	Asst. Librarian	MSc	5
TU9Library	PART-19	Male		39	Ag. Librarian	MA	12
TU10 Library	PART-20	Male		45	Head Librarian	PhD	15
	PART-21	Male		35	Asst. Librarian	MPhil	6

Source: Field Data, 2022

Table 5.4 presents the demographic information of the nineteen participants. Each participant library was represented by a pseudonym or code, as were all human participants, to ensure the protection of the identities of participants. For instance, participating TU libraries were represented with code names (TU1 Library, TU2 Library, TU3 Library, and so on up to TU10 Library). Likewise, the human participants were assigned pseudo-names or codes (i.e., PART1, PART2, PART3, PART4, PART5, PART6, and PART21) to represent participants 1 through 21. This was

done to detach the identities of participants from the views and opinions they expressed to contribute to the study. The majority (12) of the participants representing 57 percent were males while the females were 9(43%). Regarding participants' age distribution, PART 10, PART12, 19 and PART21 fell within the 30-40 age group, PART2, PART3, PART4, PART5, PART6, PART 7, PART8, PART14, PART15, PART16, PART17, PART18 and PART 20 were within the age group of 41-50. The rest (PART1, PART9, and PART11) were between the ages of 51-60.

Concerning status, five of the participants were substantive university librarians, three were acting university librarians, two of them were senior assistant librarians, and the other eleven were assistant librarians. The results indicate that the majority, of the library and information professionals were of assistant librarian status. The results regarding the level of education of the participants for the qualitative phase of the study, participants with PhD qualifications were five, those with Master of Philosophy (MPhil) degrees were nine, participants who held Master of Arts (MA) degrees were five, and those with Master of Science (MSc) degrees were only three. From the results, therefore, the majority of, the participants held MPhil degrees.

Also, on the issue of participants' years of experience as library and information professionals, the results indicate that the majority (13) of the participants (the results show that PART-1, PART-2, PART-5, PART-6, PART-7, PART-8, PART-9, PART-10, PART-11, PART-14, PART-17, PART-18, PART-19, and PART-20) had more than ten years of working experience. The rest of the participants (Part 2, Part 4, Part 12, Part 13, Part 15, Part 16, and Part 21), however, had worked as library and information professionals for less than ten years. The results, therefore, implied that the participants generally had gathered working experience, and their expert knowledge and views in providing answers to the research questions were not in doubt.

The next section concurrently presents the results from analyses of both quantitative and qualitative data on the study's first objective, which sought to identify the factors causing students' low usage of e-resources from the available academic databases at the TU libraries in Ghana.

5.4 Assessing causes of low students' utilisation of e-resources from TU libraries.

The first objective of the study (Chapter 1, Section 1.5.1) primarily sought to investigate the factors that contribute to low student utilisation of subscribed e-resources in the libraries of TUs in Ghana. To accomplish this, research question emanating from the first study objective, as enumerated in Chapter 1 of this study under Section 1.6.1, was developed to help the investigator gather survey data from the field of study. The research question sought to determine the relationships between predetermined factors, including insufficient searching and access skills, insufficient awareness of databases, inadequate staff assistance, inadequate computers available in the library, a lack of marketing e-resources, less motivation or need to use resources, unstable internet connectivity, and low utilisation of the resources. The significant linear relationship or association that exists between the factor levels of these predictors was used to determine the causes of students' low e-resource utilisation in TU libraries. The research questions detailed in Part II of the research instrument (Appendix A) of this study asked respondents to rate the effect of each predictor on students' low use of e-resources from their campus libraries on a Likert scale ranging from 1 to 5, with 1 representing very low, 2 representing low, 3 representing average, 4 representing high, and 5 representing very high. Table 5.5 displays the descriptive statistics on the causes of students' low usage of e-resources from TU libraries

Table 5.5: Descriptive statistics on the causes of students' low usage of e-resources from TU libraries

Factors Causing Low Utilisation	Mean	Std. Dev	95% Confidence Interval	5% Significance Level
Lack of searching & navigation skills *(Q6A)*	3.8357	1.1663	(3.7672, 3.902)	Significant
Less motivation/need for resources *(Q6B)*	3.0921	0.7109	(2.9641, 3.1010)	Significant
inadequate library staff assistance *(Q6C)*	2.5351	0.8513	(1.9414, 2.0784)	Significant
Inadequate access to computer devices *(Q6D)*	3.1048	0.7702	(2.0363, 2.1733)	Significant
Erratic internet connectivity *(Q7E)*	3.0099	0.6490	(2.0236, 2.1605)	Significant
Insufficient Awareness of databases *(Q7F)*	4.3456	1.0606	(4.2771, 4.4141)	Significant
Lack of marketing the resources *(Q7G)*	4.0326	1.1397	(2.1667, 2.3036)	Significant

Source: Field Data, 2022

Table 5.5 depicts descriptive data for factors causing students' limited utilisation of e-resources from TU libraries. The data captures the mean values, standard deviations, and degree of confidence interval at 95% with significance level at a 5% for each of the factors causes as shown in the Table. The results for inadequate database awareness had a mean value of 4.3456 and a standard deviation of 1.0606, with a significance level of 4.2771, and a confidence level of 4.4141at a 95% level. According to the data, insufficient marketing of the resources resulted in a mean value of 4.0326, a standard deviation of 1.1397, and a 95 percent confidence interval between 2.1667 and 2.3036. Additionally, the results revealed that inadequate seeking and access skills have a mean value of 3.8357, a standard deviation of 1.1663, and a 95 percent confidence interval of 3.7672-3.902.

The results in Table 5.5 further show that, inadequate computers available in the library had a mean value of 3.1048, a standard deviation of 0.7702, and a 95 percent confidence interval of 2.0363, 2.1733. Also, less motivation or need to use the resources also had a mean of 3.0921, a standard deviation of 1.0606, a 95 percent confidence interval of 2.0236, and a value of 2.1605 for this variable. Additionally, the mean, standard deviation, and 95% confidence interval for erratic internet connectivity were 3.0099, 0.6490, and 1.9414, respectively. Also, the mean score for insufficient library staff support for students is 2.5351, with a standard deviation of 0.8513 and a 95% confidence interval between 2.1667 and 2.3036. At a 5% significance level.

The results of all the factors indicated in Table 5.5 are regarded as significant based on the findings. These factors include insufficient awareness of the databases, inadequate marketing of the resources, insufficient searching and access skills, few computers available in the library, less motivation or need to use resources, unstable internet connectivity, and inadequate staff assistance. This implies that these elements significantly affect students' limited use of e-resources from TU libraries. These findings imply that addressing these factors could potentially increase students' utilisation of e-resources from TU libraries. Efforts to improve students' searching and access

skills, increase awareness of available databases, provide better staff assistance, enhance computer availability, improve resource marketing strategies, and address issues related to motivation and internet connectivity may help to overcome the barriers that currently limit students' usage of e-resources. By recognising these significant factors, TU libraries can develop targeted interventions and strategies to improve the accessibility and usage of e-resources, ultimately enhancing the overall learning experience and academic outcomes for students. The results from the descriptive statistics of data (referenced in Table 5.5 in Section 5.4) are considered for further statistical analysis to ascertain the degree to which each contributing factor contributes and the relationships between the factors that influence students' low use of e-resources.

5.4.1 Further analysis of survey data on the causes of low students' usage of e-resources

The results from the descriptive statistics of data (referenced in Table 5.5 in Section 5.4) was further subjected under further statistical analysis to ascertain the degree to which each contributing factor contributes and the relationships between the factors that influence students' low use of e-resources, including Cronbach reliability and validity of data, hypothesis testing, correlations of the data, and the use of structural equation modelling (SEM) to analyse the relationships between the factors. The subsection that comes next presents results on Cronbach reliability and validity of the data.

5.4.1.1 Cronbach reliability and validity test of data on the causes of low students' usage of e-resources

The findings of the validity and reliability tests for the data on the variables assessing the causes of students' limited e-resource utilisation are presented in Table 5.6.

Table 5.6: Reliability and validity of data on the causes of low students' usage of e-resources (N = 706)

	Composite Reliability	Average Variance Extracted (AVE)
Low usage of e-resources	0.754	0.540
Factor Causes	0.748	0.500

Source: Field Data, 2022

The results of the reliability and validity tests for the variables assessing the causes of students' limited e-resource utilisation are shown in Table 5.6. The findings demonstrate that the average variance extracted (AVE) and composite reliability are both high, demonstrating the validity and reliability of the data.

Based on the survey results shown in Table 5.5 and the Cronbach reliability and validity test outcomes shown in Table 5.6, the study considered the conduct of further statistical analysis to determine the extent of each factor's contribution and the relationships between the factors that contribute to students' low use of e-resources. Additional data analysis, particularly hypothesis testing, correlation, and structural modelling are required to identify the factors that are most strongly linked to low student e-resource usage and those that are not, as well as the reasons why students don't use e-resources from TU libraries as much as they should. It also supports the use of structural equation modelling (SEM) to analyse the relationships between the factors. Therefore, the hypothesis test performed to ascertain whether the indicated factors have a statistically significant impact on students' poor utilisation of e-resources is presented in the next subsection.

5.4.1.2 Hypothesis testing of the latent construct of data on the causes of low students' usage of e-resources.

On the latent construct, the researcher conducted hypothesis testing. According to the null hypothesis, there is no significant correlation or association between the levels of the identified parameters and minimal use of electronic resources. The alternative hypothesis stated that there is a significant linear relationship or association between the levels of the identified factors and low e-resource usage. This test was run to see if the factors that have been found have a statistically significant effect on students' low utilisation of e-resources.

> ***Ho1*** - No significant linear relationship or association exists between factor levels and low e-resource usage.

> **Ha1** - The factor levels have a significant linear relationship or association with low e-resource usage.

5.4.1.3 One-Way analysis of Variance (ANOVA) of data on causes of low students' usage of e-resources

The study conducted a one-way analysis of variance (ANOVA) on the data, which is a statistical test used to determine whether there is a significant difference between the means of two or more groups, was conducted. Table 5.7 shows the results of the ANOVA test comparing the means on factors measuring causes of low e-resource usage levels across the different factor levels (inadequate marketing of the resources, insufficient searching and access skills, insufficient awareness and knowledge of the databases, lack of library staff assistance, lack of motivation/ need for accessing e-resources, and poor internet connectivity).

Table 5.7: One-way analysis of variance (ANOVA) of data on the causes of low students' usage of e-resources

ANOVA Table					
Source	*df*	*SST*	*MSE*	*F-value*	*P-value*
Factor	6	3843	640.457	743.68	0.000
Error	4935	4250	0.861		
Total	4941	8093			

Source: Field Data, 2022

Table 5.7 depicts the data of the one-way ANOVA test. As shown in the Table, there is significant differences between the means of the different levels of the factors measuring causes of low e-resource usage. The ANOVA table shows the results of the test, including the degrees of freedom (df), sum of squares total (SST), mean square error (MSE), F-value, and P-value. The F-value is 743.68, and the P-value is 0.000, which is less than 0.05, indicating that there is a significant difference in the means of the different levels of the factors measuring causes of low e-resource usage. In other words, there is a statistically significant linear relationship or association between

the levels of the identified factors and low e-resource usage, which supports the alternative hypothesis *(Ha1).* Therefore, the identified factors have a statistically significant impact on students' low usage of e-resources.

It is worth stating that this ANOVA test only indicates that there is a significant difference between the means of the variables, but it does not tell us which variables are significantly different from each other. This calls for the need to conduct correlations matrix coefficients to determine the relationships of interconnectedness among the factor variables.

5.4.1.4 The correlation matrix between factors causing low students' usage of e-resources.

The correlation matrix in Table 5.8 shows the relationship between the different factors (Q6A, Q6B, Q6C, Q6D, Q7E, Q7F, and Q7G). The results of the analysis can be used to identify which factors have the largest impact on low e-resource usage and which factors need to be improved to increase students' usage of e-resources. Additionally, it can be used to further investigate the correlation between these factors.

Table 5.8: Correlation Matrix on causes of low students' usage of e-resources (N = 706)

	Q6A	Q6B	Q6C	Q6D	Q7E	Q7F	Q7G
Q6A	1						
Q6B	.806**	1					
Q6C	.772**	.729**	1				
Q6D	.648**	.814**	.789**	1			
Q7E	.780**	.695**	.800**	.861**	1		
Q7F	.651**	.753**	.734**	.803**	.642**	1	
Q7G	.993**	.808**	.794**	.885**	.778**	.950**	1

** correlation is significant at the level (2-tailed)

The correlation matrix in Table 5.8 presents the correlations between the factors related to the causes of low student usage of e-resources. The correlations are represented by correlation coefficients ranging from -1 to 1. According to the correlations' interpretation, the coefficients vary

from.648 to.993. Less motivation to use resources (Q6B) is strongly positively correlated with inadequate library staff assistance (Q6C), a lack of adequate computers in the library (Q6D), erratic internet connectivity (Q7E), inadequate database awareness (Q7F), and a lack of marketing the resources (Q7G).The coefficients, which lie between.695 and 0.814, indicate that a significant positive link exists between insufficient library staff help (Q6C) and few computers available in the library (Q6D), erratic internet connectivity (Q7E), insufficient database awareness (Q7F), insufficient library staff awareness (Q7G), and a lack of marketing of the resources. The coefficients lie between 729 and 794. Lack of computers at the library (Q6D) strongly correlates with erratic internet connectivity (Q7E), inadequate database knowledge (Q7F), and a lack of marketing the resources (Q7G). The coefficients, which fall between 0.789 and.885**, also indicate that Q7E with Q7F and Q7G The coefficients range from 0.800** to 0.861**. Also indicate that Q7F has a strong positive correlation with Q7G with a coefficient of 0.950**.

The results suggest that there are significant correlations between the factors related to the causes of low student usage of e-resources. These positive correlations indicate that when one factor is present or perceived to be an issue, it tends to be associated with the presence or perception of other factors as well. It is important to consider these correlations when analysing the causes of low student usage of e-resources. The relationships identified can provide insights into the potential interconnectedness among the factors and can guide efforts in addressing these issues. By understanding these associations, interventions and strategies can be developed to target multiple factors simultaneously and improve students' utilisation of e-resources.

Given the strong correlations observed among the factors related to low student utilisation of e-resources, it is reasonable to conclude that conducting regression studies may not be necessary. Instead, a more appropriate approach would be to perform structural modelling using a method such as partial least squares (PLS) structural equation modeling. This modelling technique allows for the exploration of linkages between the factor variables (independent variables) and the low

student utilisation of e-resources (dependent variables). Considering the significant correlations observed, it is appropriate to opt for structural analysis using PLS structural equation modelling to explore the linkages between the factor variables and low student utilisation of e-resources. This approach will enable a more comprehensive understanding of the factors contributing to the observed outcome and inform strategies to improve student engagement with e-resources. Utilizing PLS structural equation modeling can help unravel the intricate connections between the independent variables (the factors) and the dependent variable (low student utilisation of e-resources). This method considers the high correlations among the factors and allows for a comprehensive analysis of the relationships, helping to uncover the underlying factors influencing low utilization.

5.4.1.5 Structural equation models on factors causing low students' usage of e-resources.

Structural Equation Models (SEM) is a statistical technique used to analyze relationships among multiple variables by creating a measures model to assess the validity and reliability of the constructs and a structural model to represent the relationships among the constructs. The diagram in Figure 5.1 shows how the measures model and structural model are connected and how the variables are related to each other.
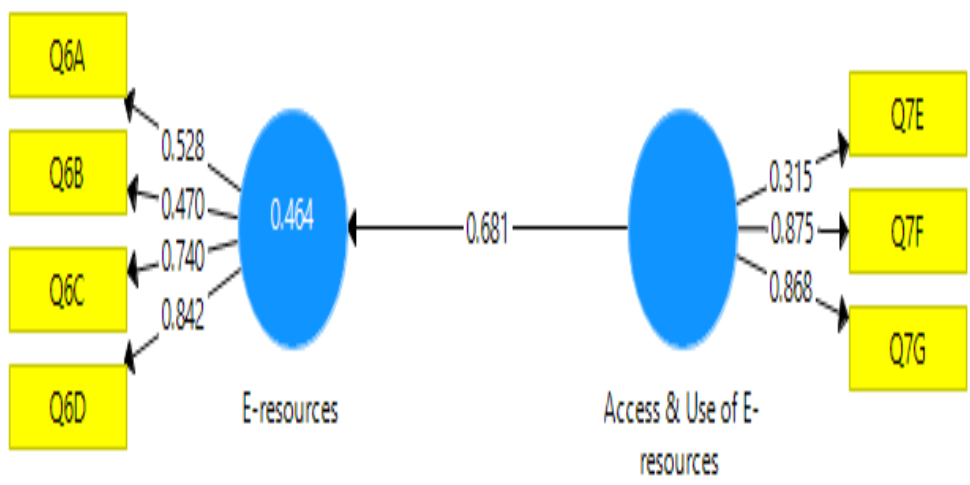
Figure 5.1: Structural Equation Models on factors causing low students' usage of e-resources.

The structural equation model (SEM) is a statistical technique used to examine correlations among multiple variables, as illustrated in Figure 5.1. The diagram represents both the measurements model and the structural model. The measurements model assesses the reliability and validity of the constructs being studied. Validity refers to the extent to which a construct measures what it is intended to measure, while reliability relates to the consistency or stability of the construct.

In the diagram, the circles represent the constructs, and the arrows connecting them depict the relationships between these constructs in the measurements model. On the other hand, the structural model represents the relationships among the constructs. The arrows in the structural model indicate the causal relationships between the constructs, and the numbers on the arrows represent the strength of these relationships. The rectangles in the diagram represent the constructs in the structural model, and the connecting arrows represent the relationships between them.

In the analysis of the structural model, significant correlation values were found for five factor variables: inadequate awareness and knowledge of how to use the databases (G7F), inadequate e-resource marketing (Q7G), a lack of searching and navigation skills (Q6A), inadequate staff assistance (Q6C), and inadequate computer availability in the library (Q6D). These variables represent the constructs being examined. The correlation values between these five independent variables and the dependent variable (low usage) ranged from 0.528 to 0.875. These values indicate significant relationships between the variables. In other words, the inadequate awareness and knowledge of how to use the databases, inadequate e-resource marketing, a lack of searching and navigation skills, inadequate staff assistance, and inadequate computer availability in the library are all associated with low usage, with correlation values ranging from 0.528 to 0.875.

The results suggest that there are significant relationships between several factors and low usage of e-resources. Specifically, the findings indicate that inadequate awareness and knowledge of how to use the databases, inadequate e-resource marketing, a lack of searching and navigation skills,

inadequate staff assistance, and inadequate computer availability in the library are associated with low usage. The structural equation model analysis reveals important insights into the relationships between the examined constructs and provides evidence of significant associations between various factors and low usage of e-resources.

To provide a comprehensive picture regarding the factors causing students' limited usage of the e-resources from the TU libraries, the investigator considered it relevant to seek the opinions of the librarians and information specialists who work in the libraries. Since the library and information specialists have worked in these institutions and may have gathered a wealth of experience regarding the provision of library resources and the difficulties students faced, it is appropriate to consider their views to provide more insight into this issue and help identify strategies for increasing students' familiarity with and usage of the subscribed databases. This was done by conducting one-on-one interviews with library and information professionals. The investigator thought it was important to have the viewpoints of the librarians and information experts who operate in the libraries to paint a complete picture of the issues driving students' limited usage of the e-resources from the TU libraries. It is appropriate to consider the library and information specialists' perspectives to provide more insight into this issue and help identify strategies for increasing students' familiarity with and usage of the subscribed databases. These professionals have experience working in these institutions and may have gathered a wealth of knowledge regarding the provision of library resources and the challenges students faced. Conducting interviews with librarians and information professionals may yield further insights to complement the findings (found in Table 5.5) obtained from students regarding the reasons for the limited usage of resources at Ghanaian TU libraries by students. Thus, 21 library and information specialists who work for these libraries were interviewed one-on-one.

From the findings, it could be realised that some views from the interviewees mirrored the results from the survey, as shown in Table 5.5, Table 5.6 and Figure 5.1. Albeit various responses were

given during the one-on-one interviews with library and information professionals regarding factors causing students' limited utilization of e-resources from TU libraries in Ghana, the most profoundly mentioned by most interviewees (15) was the lack of awareness of the various databases among students. One interviewee for instant intimated that *"students' access and usage of the e-resources is low because of their inadequate awareness of the appropriate databases."* (Participant 1). Another participant continued that *"students lacked adequate awareness and training regarding the academic databases, hence their limited patronage of the databases."* (Participant 4). Another interviewee observed, *"Students are not fully patronizing e-resources because they lack exposure and knowledge in terms of using such resources."* (Participant 3). This revelation is clearly a manifestation that the students lack adequate awareness of the e-resources at the libraries.

The study's findings also pointed to a lack of marketing for these library resources as one of the reasons for the low rate of student use. A participant also stated, *"The phenomenon of a lack of marketing, promotion, and publicity is what causes students to not be adequately aware of the databases, according to research."* (Participant 13). This revelation clearly suggests that there is no marketing of the e-resources to the students. This revelation further implies that one of the reasons why students don't use the resources from the libraries as much as they should is a lack of marketing the resources.

The study's results also indicated that students' poor or nonexistent information literacy (IL) abilities, which result in a lack of search strategies, are a factor in their low use of the databases' available electronic resources. One participant for instance mentioned *"the students have limited knowledge of the various databases because a request to organise mandatory IL and library instruction sessions with students has received a positive response from the instruction management"* (Participant 1). *An interviewee (Participant 16) also stated, "Students do not receive adequate training on how to use the library's e-resources, which is most likely."* lead to confusion *and frustration when trying to access and use the resources."* Another participant for instance

mentioned "*a request to organise mandatory IL and library instruction sessions with students has not received any positive answer from the institution management*" (Participant 1). A major reason given for students' inability to access e-resources is that *"students did not avail themselves of training opportunities because they claimed they did not have time"* (Participant 7). Other reasons why students faced challenges were since *"students failed to attend the orientations for freshmen, coupled with the library's inability to organise robust trainings for students due to the lack of provision for library instruction on the main academic curriculum of the school."* (Participant 4). Students failed to be part of the training since they found no need to do so because, without the training, they could still Google and copy text from the open internet. Furthermore, *"the difficulties faced by students are due to their limited knowledge of databases relevant to their subject area and what could be done to improve their knowledge."* (Participant 12).

The findings further, overwhelmingly (19 participants) revealed that a major cause of low student utilisation of e-resources is their high reliance on their lecture notes as a source of information. For instance, one participant retorted, *"If students are primarily relying on their lecture notes for information, how will they see the need and value of using electronic resources from the library?"* (Participant 14). The participants predominantly mentioned that the information students needed for their assignments *"could be found in lecture notes or handouts provided by their lecturers, and many students only sought for e-resources when working on a long thesis or dissertation in their final year."* (Participant 10). The results suggest that students' high reliance on their lecture notes as a source of information could be significantly contributing to the low student usage of the resources. Additionally, if students are not encouraged or required to use e-resources as part of their coursework, they may not see a need to explore them on their own. This theme could be a result of a lack of emphasis on e-resources in the curriculum, a lack of information literacy instruction and training, or a lack of incentives for students to use e-resources. Librarians and information professionals can help address this theme by working with faculty to incorporate e-

resources into the curriculum, providing information literacy instruction and training, and promoting the value and benefits of e-resources to students.

One of the key themes that emerged from follow-up interviews with library and information professionals was students' lack of information literacy skills. For example, *"the ability to access, evaluate, and use information effectively and ethically is lacking among our students"* (participant 14). It is deduced that students' lack of these skills made them struggle to find, understand, and use the e-resources available to them, which could lead to low utilisation. This theme could be a result of inadequate information literacy instruction and training, a lack of emphasis on information literacy skills in the curriculum, or a lack of support for students as they develop these skills. Librarians and information professionals can help students develop their information literacy skills by providing.

Inadequate number of computers in the library to support multiple concurrent users is another theme that emerged from the follow-up interviews with library and information professionals. For instance, a participant noted that *"some students desire to access e-resources, but they do not have access to computer devices or smart devices, and unfortunately, the computers in the library are not adequate."* (Participant 18). Another participant indicated *"our library has limited number of computers to support multiple concurrent users at any given time, which can prevent students from accessing the resources. The library currently has 120 computers for over a 9000 students' population"* (Participant 3). These revelations suggest that there is inadequate ICT infrastructure to support access to the e-resources library. This theme could disproportionately affect students from lower socio-economic backgrounds who cannot afford their own device. Meanwhile, without access to computers or other devices that can connect to the internet, students may not be able to access e-resources.

Other themes emerged from the interviews with the library and information professionals regarding possible factors that influence students' low access and usage of e-resources from the libraries. These themes included.

1) Limited availability of e-resources in specific fields or topics: *"Some databases do not have adequate coverage in certain fields or topics, which make it difficult for all students to find relevant information"* (Participant 21).

2) Furthermore, *"Students turn to Google and copy any results that they find,"* (participant 3, 10 & 21). One participant also said, "*most students use Google and other search engine to find information from the open internet and that is okay for them"* (participant 21).

3) Compatibility issues: *"the interface of some databases is not compatible with certain devices or software, which prevent students from accessing the resources on their preferred device or platform".* (Participant 6).

4) Time constraints: *"Students have limited time to access e-resources due to other academic and personal commitments, which make it challenging to conduct thorough research and access all the necessary materials"* (Participant 1).

5) *"Efficacy of internet connectivity: This refers to the quality and reliability of the internet connection and how it affects students' ability to access and use e-resources."* (Participants 3-11, 13-17)

6) *Also dominant was the issue of "Lack OF Available off-campus access service which refers to remote access to the resources from the library even as the user physically present on campus"* (Participants 1 and 2).

The findings from the interviews with 21 library and information professionals suggest that students face multiple challenges including, the fact that students turn to Google and copy any results that they find slow download and printing processes, slow internet connectivity, a lack of off-campus access, erratic power supplies, insufficient computer equipment, insufficient storage

and printed media, and a lack of user interest, limited availability of e-resources in specific fields or topics, students turn to Google and copy any results that they find, compatibility issues, time constraints. Additionally, "a lack of emphasis on e-resources in the curriculum, lack information literacy skills and struggle to find, understand, and use the e-resources available to them, resulting in low utilisation. From the results, it was also observed that low student usage of the resources was also caused by the fact that the information students need for their assignments can be found in lecture notes or handouts provided by their lecturers, and many students only seek out e-resources when working on a long thesis or dissertation in their final year. Other factors include insufficient access to computer devices and a lack of emphasis on e-resources in the curriculum.

This information can then be used to design targeted solutions to improve students' access to e-resources and enhance their academic performance. The results of this section will likely be crucial in addressing the difficulties students face in accessing e-resources and ensuring that they are equipped with the necessary skills and information needed to make effective use of the available resources. The findings provided a deeper understanding of the specific reasons that make students face difficulties in effectively utilising the databases provided by TU libraries in Ghana. Overall, these findings provide valuable insights into the various factors that influence student use of e-resources and can be used to inform strategies to improve the effectiveness of these resources for students.

Having determined the results on the factors affecting students' utilisation of e-resources from the libraries, the study further investigated views on several underlying issues relating to the provision of e-resources and students' usage of the resources from the libraries to provide further information that may help determine the full range of factors that contribute to low student access and use of e-resources. These underlying issues relating to the provision of e-resources include the purpose for which students visit the library's electronic resources, their knowledge of the academic databases that are available, the sources they use to find e-resources, and their informational and

technological literacy. The subsection that comes next presents the results on the extent to which students' access and or used the various e-resources available at TU libraries is evaluated in the next section.

5.4.2 Students' access and usage of e-resources.

The study further evaluated the extent to which students patronised e-resources from the libraries as the first study objective (Section 1.5.1 in Chapter 1), which primarily aimed to investigate the factors causing low student utilisation of e-resources in the libraries. Thus, research questions (referenced in Part II in Appendix A) of this study were developed to collect data from the field to evaluate students' access to and usage of the available resources and determine the causes of their low usage. Respondents were thus given a list of several EIRs that were typically accessible through their campus library and the internet as a whole, and they were asked to rate the extent to which they used these resources on a 5-point Likert scale described as: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)." The findings on students' access to or use of various electronic resources are shown in Table 5.9 as descriptive statistics.

Table 5.9: students' access/or use of various types of e-resources (N=706)

Access And/or Use of Available Resources	Mean	Std. Devtn	Variance	Skewness		Kurtosis	
	Stats	Stats	Stats	Stats	Std. Error	Stats	Std. Error
Text copied from open internet	3.96	1.264	1.599	-.505	.092	-.801	.184
Text copied from Google	3.70	1.308	1.710	-.436	.092	-.941	.184
Multimedia files (videos, audio, etc) from YouTube	3.57	1.284	1.579	-.446	.092	-.701	.184
e-books	2.96	1.124	.481	.263	.092	.023	.184
Image collections	2.24	.697	.486	.594	.092	1.120	.184
Articles from e-journals	1.80	.785	.617	.651	.092	.081	.184
Online databases	1.75	.794	.631	.741	.092	.109	.184
CD-Rom/DVD-Rom resources	1.69	.787	.619	.954	.092	.762	.184
e-thesis and project work	1.75	.786	.617	.830	.092	.579	.184
e-reference materials	1.68	.734	.539	.933	.092	1.080	.184
e-magazines and newspapers	1.72	.819	.670	1.355	.092	2.775	.184
institutional repository	1.68	.727	.528	.832	.092	.638	.184

Source: Field Data, 2022

Table 5.9 presents the results that assessed students' access to and usage of various electronic resources (e-resources) available in the library. Using the Likert scale to measure the level at which students accessed and utilized different types of e-resources the descriptive statistics presented in Table 5.9 indicate that students rated their access and usage of text copied from the open internet relatively high, with a mean score of 3.96. The data shows a moderate level of variability (standard deviation of 1.264) and a slightly negative skewness, indicating a slightly left-skewed distribution. The kurtosis of -0.801 suggests a relatively flat distribution. Similarly, students' access and usage of text copied from Google likewise received a slightly higher mean score of 3.70 just as the results of text from the open internet. The standard deviation (1.308) indicates moderate variability in responses. The skewness (-0.436) suggests a slightly left-skewed distribution, and the kurtosis (-0.941) indicates a relatively flat distribution. Furthermore, the results for students' access and usage of multimedia files from YouTube received a mean score of 3.57. The standard deviation (1.284) indicates moderate variability. The skewness (-0.446) suggests a slightly left-skewed distribution, and the kurtosis (-0.701) indicates a relatively flat distribution.

As can be seen from the results, students' access and usage of e-books received a mean score of 2.96. The standard deviation (1.124) indicates moderate variability. The skewness .263) suggests a slightly left-skewed distribution, and the kurtosis (.023) indicates a moderately flat distribution. The results, on the other hand, indicate that the remaining categories on students' access to other categories of e-resources (Table 5.5), including, image collections, articles from e-journals, online databases, CD-ROM/DVD Rom based resources, e-thesis and project works, e-reference materials, e-magazines and newspapers, and institutional repository on the other hand is relatively low, with mean scores ranging from 1.68 to 1.96, indicating limited access to these resources.

The results suggest that students' access to and use of EIRs including text that they copied from the open internet, text copied from Google, multimedia files (videos, audio, etc.) from YouTube, are the most widely accessible and or used resources among students while their access and use of

e-books is moderate. On the other hand, it is observed that students' access to and usage of resources from the subscribed academic databases, online journals, and e-reference materials that are critical for scholarly research and learning is considerably low. These results suggest that students' access to and use of e-resources from the subscribed academic databases in the libraries is low. The results could have important implications for the libraries of TUs in their provision of e-resources, as they may need to re-evaluate their awareness creation and marketing strategies and policies to ensure that they effectively engage and influence the interest of their students to optimize their patronage of the resources. The subsection that comes next presents results from the assessment on students' awareness of available academic databases in libraries.

5.4.3 Students' awareness of available academic databases.

Part of the aim of the first research objective was to assess the students' awareness of available academic databases at the libraries of TUs. A list of available databases, including those subscribed to by the consortium of academic and research libraries in Ghana (CHARLIGH) and some renowned open-access databases related to subject disciplines within the five main faculties of TUs, were provided in the questionnaire (Appendix A). The survey respondents were asked to tick () in the column category on a 5-point Likert scale described as "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to indicate how familiar they were with the listed academic databases provided in the campus library. The results were analysed and presented in Table 5.10.

Table 5.10: Students' awareness of available databases (N = 706)

	Mean	Std Dev	Variance Stat	Skewness Stat	Std. Error	Kurtosis Stat	Std. Error
Google search	3.77	1.379	1.91	.442	.092	-1.390	.184
Wikipedia	3.69	1.379	1.91	.442	.092	-1.390	.184
Google Scholar	3.03	.942	.888	-.169	.092	-1.613	.184
SCIRP	1.91	.941	.432	.492	0.92	-.732	.184
Science Direct	1.84	.659	.434	.181	.092	-.732	.184
Emerald. Insight	1.78	.751	.564	.381	.092	-1.147	.184
Taylor and Francis	1.73	.757	.573	.488	.092	-1.110	.184

IEE	1.72	.739	.546	.492	.092	-1.036	.184
Sage Journals	1.66	.703	.494	.682	.092	-.212	.184
Ebsco Host	1.68	.709	.503	.653	.092	-.286	.184
Research 4 Life	1.68	.707	.500	.651	.092	-.274	.184
JSTOR	1.66	.720	.518	.695	.092	-.322	.184
PubMed Databases	1.75	.794	.631	.741	.092	.109	.184

Source: Field Data, 2022

Table 5.10 depicts the results of a survey conducted to ascertain the awareness of registered student users of TU libraries of the academic databases available at the libraries of TUs in Ghana. The results as depicted in Table 5.10 include several statistical measures for each database, including the number of respondents, the mean score, the standard deviation, the variance, the skewness, and the kurtosis.

The results show that students' familiarity with "Google Search"-based resources was highest with a mean score of 3.77, followed by Wikipedia with a mean score of 3.69 and Google Scholar with a mean score of 3.03, indicating a moderate level of familiarity with these databases. The results further show that students were least familiar with available academic databases, including "Scientific Research in Publication (SCIRP)," "Science Direct," "Emerald," "Taylor & Francis," "Sage," "IEEE," "Ebscohost," and "Research for Life Databases (HINARI, AGORA, OARE, and ARDI)," with a mean score between 2.77 and 1.47 out of 5.

The findings indicate that the students have varying levels of knowledge regarding the databases available at TU libraries. While "Google Search," "Wikipedia database," and "Google Scholar" are relatively known, others, such as the subscribed databases from the consortium of academic and research libraries in Ghana (CHARLIGH) and some renowned open-access databases related to subject disciplines within the TUs, are not as familiar to students. The low knowledge of students regarding the subscribed academic databases in the libraries has implications for their access to information, time management, use of relevant resources, and preparation for future work. Addressing the low familiarity of students with academic databases is therefore an important step

towards improving students' optimal usage of e-resources and, subsequently, their academic performance and their preparedness for future academic or professional work. These findings could have an impact on the design and implementation of information literacy programs and strategies to improve students' access to and use of academic databases. Judging from the survey results, the respondents are more familiar with resources from the open-access databases, such as Google Search and Google Scholar, than with the subscribed databases. The subsection that comes next presents results that investigated sources students consult to access e-resources or databases at the libraries.

5.4.4 Sources students consult for e-resources.

The survey data was analysed to assess information about the sources of information respondents consulted in seeking e-resources from libraries. The results were analysed and presented in the form of descriptive statistics using ratings on a Likert scale, with the following categories: 1: very low, 2: low, 3: average, 4: high, and 5: very high. The results from the analysis are depicted in Table 5.11, consisting of the number of respondents (N), the mean statistic, the standard deviation statistic, the variance statistic, the skewness statistic, the standard error, the kurtosis statistic, and the standard error.

Table 5.11: Sources consulted for e-resources (N=706)

	Mean Stats	Std. Dev. Stats.	Variance Stats	Skewness Stats	Std. Error	Kurtosis Stats	Std. Error
Google search	3.84	1.347	1.815	.712	.092	-.728	.184
YouTube	3.63	1.323	1.651	.342	.092	-.723	.184
Wikipedia Database	3.52	1.315	1.728	.344	.092	-.978	.184
e-journals	2.08	.851	.724	1.046	.092	2.017	.184
Open access databases	1.90	.764	.583	.937	.092	1.957	.184
Google Scholar	1.83	.821	.674	.708	.092	.123	.184
Academic database	1.86	.928	.862	1.067	.092	1.090	.184
Subject Gateways	1.88	1.148	.613	0.353	.092	492.48	.184

CD/DVD Based e-books	1.97	1.071	.147	1.139	.092	.853	.184

Source: Field Data, 2022

Table 5.11 presents the results of the analysis of respondents' sources for seeking e-resources. The data was collected using a Likert scale ranging from very low to very high, and the analysis provides information on the number of respondents (N), the mean statistic, the standard deviation statistic, the variance statistic, the skewness statistic, the standard error, the kurtosis statistic, and the standard error.

According to Table 5.11, the most used source for seeking e-resources is Google search, with a mean score of 3.84. This is followed by YouTube, with a mean score of 3.63, and the Wikipedia database, with a mean score of 3.52. The use of e-journals and open-access databases is relatively low, with mean scores of 2.08 and 1.90, respectively. Google Scholar and academic databases are the least used sources for seeking e-resources, with mean scores of 1.83 and 1.86, respectively. Subject gateways are also relatively unused, with a mean score of 1.88. CD- or DVD-based e-books have a mean score of 1.97. The skewness and kurtosis statistics provide information about the distribution of the data. The skewness statistic measures the asymmetry of the distribution, with a negative value indicating a left-skewed distribution. The kurtosis statistic measures the peak of the distribution, with a high value indicating a sharp peak. The skewness and kurtosis values for subject gateways are particularly high, indicating that the data is heavily skewed and has a very sharp peak.

The results in Table 5.11 suggest that students rely heavily on general search engines like Google to find e-resources, with specialized databases and subject gateways being used only infrequently. The findings also show that students are unfamiliar with subscribed e-journals and academic databases available in Ghanaian technical university libraries. Furthermore, students regard Google, YouTube, and Wikipedia as more trustworthy sources of EIRs. The subsection that comes

next presents the results on the purpose for which students accessed and/or used the various e-resources offered at the TU libraries.

5.4.5 The purpose for accessing the library's electronic resources.

Using a predetermined list of factors on a Likert scale with ratings of 1 (very low), 2 (low), 3 (moderate), 4 (high), and 5 (very high), this part investigates what drives student respondents to use library e-resources. The purpose for which students access the e-resource may give further insights to the causes of students' low utilization of available resources from the libraries. The results on the purpose of using the e-resources from the libraries are shown in Table 5.12 as descriptive statistics.

Table 5.12: The purpose for using the library's electronic resources(N=706)

Purpose of access to resources	Mean		Std. Deviation	Variance
	Statistic	Std. Error	Statistic	Statistic
To complete Assignment (P1)	3.72	.049	1.299	1.688
Final project work /dissertation (P22)	2.98	.028	.731	.534
Exam preparation (P3)	1.91	.029	.773	.598
Leisure and pleasure reading (P4)	1.82	.031	.817	.668
Complement what is taught in class (P5)	1.82	.034	.896	.803
To prepare lecture notes (P6)	1.72	.031	.831	.691
Exploring for Personal discoveries (P7)	1.86	.035	.928	.862
Collaborative studies research (P8)	1.81	.033	.887	.787
For citation and referencing (P9)	1.75	.030	.785	.616

Source: Field Data, 2022

The results in Table 5.12 depict the purpose of using the library's electronic resources. The results depict the descriptive statistics consisting of the mean, standard deviation, and variance for each purpose category. The results indicated that the purpose of accessing the resources to facilitate one's completion of an assignment (P1) recorded a mean value of 3.72, a standard deviation of 0.049, and a variance of 1.299. The results indicate that the purpose of accessing library e-resources to complete assignments has a relatively high mean score of 3.72, indicating that students find it

significant. The low standard deviation (0.049) suggests that there is not much variation among students in their ratings for this purpose.

The results further indicated that the purpose of accessing the resources to facilitate one's completion of research on the final project work or dissertation, which recorded a mean value of 2.98, a standard deviation of 0.028, and a variance of 0.731, has recorded a lower mean score of 2.98 compared to completing assignments. However, it still indicates a moderate level of importance. The low standard deviation suggests that there is less variability in students' ratings for this purpose. Furthermore, the purpose of accessing e-resources for exam preparation (P3), which recorded a mean value of 1.91, a standard deviation of 0.029, and a variance of 0.773, has a low mean score of 1.91. This suggests that students do not consider e-resources highly important for exam preparation. The low standard deviation indicates a relatively consistent opinion among students regarding this purpose.

The results in Table 5.12 further depict that other reasons for accessing e-resources include leisure and pleasure reading (P4), complementing what is taught in class (P5), preparing lecture notes (P6), personal discoveries (P7), collaborative studies research (P8), and citation and referencing (P9) purposes. These reasons recorded low mean values of between 1.72 and 1.86. The correlating low standard deviation values suggest a consistent opinion among students regarding these purposes. This further indicates that students do not prioritise e-resources for the rest of the list of predetermined purposes, indicating a relatively low level of importance. The results imply that students primarily use the library's electronic resources for completing assignments, with a relatively high mean score of 3.72. This suggests that assignments are a significant driver for accessing e-resources. The results essentially show that while completing assignments is the main reason why students use library electronic resources, other purposes such as research, exam preparation, recreational reading, preparing lecture notes, personal discoveries, collaborative studies research, and citation and referencing are not considered as significant by the student

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respondents. These results provide insights into the motivations and priorities of students when accessing electronic resources in the library. The subsection that comes next evaluates awareness of e-resources amongst TU students. The subsection that comes next presents results that evaluates the information literacy and digital literacy skills of students.

5.4.6 Evaluating searching /digital literacy difficulties of students.

This section sought to investigate the students' information literacy and digital literacy skills required of them to conduct effective searching of available academic databases in the libraries of TUs in Ghana. Stemming from the first study objective (1.5.1) and the first research question (1.6.1) in Chapter One, respondents were asked to measure their searching skills using a Likert scale from 1 to 5, given and described as: 1 = Very Low (VL), 2 = Low (L), 3 = Average (AV), 4 = High (H), and 5 = Very High (VH). The assessment was based on the following set of skills: computer/digital literacy skills, locating required information, formulation of query/search terms, basic search techniques (phrase searching), evaluating relevant sources, basic training in database searching, advanced searching techniques, saving, downloading, and printing needed information, combining special characters ($*?) in searching, and Boolean logic (+, -, and NOT) operators. The results were gathered, analyzed, and presented in Table 5.13.

Table 5.13: Evaluating searching /digital literacy difficulties of students(n=706).

	Mean	**Std. Deviation**	**Skewness**		**Kurtosis**	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Computer/digital literacy skills	3.33	.714	-.174	.092	.963	.184
locating required information	2.88	1.007	.402	.092	-.210	.184
Formulation of query/search terms	2.63	1.049	-.011	.092	-.254	.184
Basic search techniques (phrase searching)	2.60	.850	.452	.092	.061	.184
evaluate relevant sources	2.59	.813	1.001	.092	1.054	.184
Basic training in database searching	2.52	.866	.768	.092	.491	.184
advance searching techniques	2.48	1.067	.372	.092	-.732	.184
save, download & print needed information	2.41	1.076	1.045	.092	.645	.184
Combining special characters ($*?) in searching	1.76	.807	.467	.092	-1.315	.184

Boolean logic (+, - & NOT) operators	1.78	.836	.641	.092	-.692	.184

Source: Fieldwork, 2022.

The results in Table 5.13 indicate the students' information and digital literacy skills. The data shows the mean and standard deviation for each of the skills assessed, as well as measures of skewness and kurtosis. The findings show that the students have average computer literacy and digital skills (mean = 3.33) but poor location of needed information from the databases (mean = 2.88). Their ability to formulate search terms (mean = 2.63) and receive training on searching techniques (mean = 2.60) is also low. The students also have low skills in evaluating relevant sources of e-resources (mean = 2.59), basic training in database searching (mean = 2.52) and using advanced searching tools and techniques (mean = 2.48). The lowest skills are in combining special characters (mean = 1.76) and using Boolean logic (+, -, and NOT) operators (mean = 1.82).

The results suggest that students are faced with digital literacy and searching difficulties in utilizing academic databases leading to their limited usage of the e-resources from the library. The results further suggest that while students' computer and digital skills are average, the lack of essential information literacy skills poses challenges in effectively accessing and evaluating e-resources. The results thus indicate that the libraries may need to provide targeted training and support to empower students to enhance their searching capabilities, leading to more fruitful and productive use of the available resources.

Having investigated the causes of the low student utilization of e-resources from available databases, it became important to determine the current strategies deployed by the libraries for the marketing of their e-resources to their students. The section that comes next presents the results of the second study objective, which aimed to investigate the current approaches employed by TU libraries in Ghana to market available e-resources to their students.

5.5 Current strategies deployed by libraries to market e-resources to students.

The second study objective (Chapter 1, Section 1.5.2) aimed to investigate the current approaches employed by TU libraries in Ghana to market available e-resources to their students. To accomplish

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the study objective, specific research questions were formulated (as found in Appendix A) as part of the questionnaire and distributed to the respondents, as listed in Chapter 1 of the study under Section 1.6.2, to determine the libraries' prevailing methods of marketing available e-resources to students. The results are presented in parts under subsections 5.5.1 to 5.5.2. It is expected that the results of the study's second objective will provide insights into the current marketing approaches used by libraries in Ghana and their effectiveness in promoting e-resources to students. The subsection that comes next presents the results of the libraries' current methods of marketing e-resources among students.

5.5.1 Libraries' current methods of marketing e-resources among students

This aspect of the study examined the libraries' present strategies for marketing e-resources among students as part of the second research objective. Respondents were asked to rate the predetermined conventional media channels as described in Appendix A and captured in Chapter 1, Section 1.6.2, on a Likert scale ranging from 1 to 5, where 1 denotes "very low," 2 denotes "low," 3 denotes "average," 4 denotes "high," and 5 denotes "very high." The data that resulted from the analysis is presented in Table 5.14. The results of this investigation will shed light on the strengths and weaknesses of the current marketing methods and present the need to explore more effective marketing strategies to encourage the use of e-resources and improve the student experience by examining the strategies libraries employ to increase awareness.

Table 5.14: Current marketing methods among TU libraries (N=706)

	Mean		Std. Deviation	Variance
	Statistic	Std. Error	Statistic	Statistic
brochure/flyers (MSL1)	3.94	.046	1.215	1.477
Notices/signage in library (MSL2)	3.86	.047	1.261	1.590
Posters and banners (MSL3)	3.85	.047	1.254	1.572
Orientation Packets (MSL4)	1.81	.035	.940	.884
User manuals (MSL5)	1.85	.037	.992	.985
Campus Bulletin/Notice board (MSL6)	1.81	.036	.951	.904
Student Newsletters/Magazines (MSL7)	1.80	.036	.945	.892
Library Newsletters (MSL8)	1.85	.035	.935	.875
Institutional & Library Websites (MSL9)	1.84	.035	.928	.862
Social media and web 2.0 tools (MSL10)	1.77	.034	.892	.796

Marketing Via emails (MSL11)	1.76	.030	.802	.643
Via Text messaging (MSL12)	1.75	.030	.793	.629

Source: Field Data, 2022

Table 5.14 depicts the statistical results of libraries' current methods of marketing e-resources to students in technical universities in Ghana, giving details of the mean values, standard deviation, and variance. From the results, the mean values of brochures and flyers (MSL1), notices and signage in libraries (MSL2), posters, and banners (MSL3) are 3.94, 3.86, and 3.85, respectively, indicating that these mean values suggest that, on average, these three marketing methods are perceived by students to be mostly used by libraries to market e-resources to students in technical universities in Ghana. The higher mean values indicate that these methods are generally well known by students and have been used in promoting e-resources to students.

On the other hand, the mean values for user manuals (MSL5), campus bulletins and notice boards (MSL6), student newsletters and magazines (MSL7), library newsletters (MSL8), institutional and library websites (MSL9), social media and web 2.0 tools (MSL10), email marketing (MSL11), and text messaging (MSL12) fall between 1.75 and 1.85, suggesting that these marketing methods are generally perceived as less positive or less effective compared to the previous marketing methods discussed (brochures/flyers, notices/signage in libraries, and posters/banners). A mean value between 1.75 and 1.85 implies that, on average, the ratings, or perceptions of these marketing methods for promoting e-resources among students in TU libraries are relatively lower. It suggests that these methods might not be as successful or preferred by students compared to other methods.

The results in Table 5.14 further indicated variability in the data, which implies that students' responses are more diverse and varied for these marketing methods. The higher variability indicated by standard deviation and variance values suggests that these marketing methods may not have a consistent impact or may be more subjective in their effectiveness. This variability could be influenced by factors such as individual preferences, experiences, and the specific context in

which these methods are implemented. Therefore, it is important for TU libraries to consider the variability in the responses and take individual preferences and opinions into account when evaluating and planning marketing strategies for e-resources.

These results provide an understanding of the strengths and weaknesses of the current marketing methods used by TU libraries for marketing e-resources among students. The low average ratings for several methods suggest a need for exploring more effective strategies to increase awareness and improve the student experience in utilizing e-resources. The subsection that comes next presents results of additional statistical analyses of the data considering the descriptive statistical findings depicted in Table 5.14.

5.5.1.1 Further analysis of survey data on current marketing methods among TU libraries.

Additional analyses of survey data were done considering the descriptive statistical findings depicted in Table 4.14 regarding the current marketing methods among TU libraries. The additional analyses of survey data included were Cronbach's alpha measure of data reliability and internal consistency, correlations of data, regression analysis, and coefficients of the relationships. Table 5.15 depicts results Cronbach's alpha measure of data on the current marketing methods among TU libraries.

Table 5.15: Cronbach's alpha measure of data reliability and internal consistency on current marketing methods among TU libraries (N = 706)

Reliability Statistics	
Cronbach's Alpha	N of Items
.818	12

 Source: Field Data, 2022

Table 5.15 depicts the Cronbach's alpha measure reliability and internal consistency of data regarding the libraries' current methods of marketing e-resources among students at Ghanaian TUs. Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is most used when you have multiple Likert questions in a survey or questionnaire that form a scale and

you wish to determine if the scale is reliable. From the Reliability Statistics Table, the Cronbach's alpha value is 0.818 (81.8%). This means or indicates that we have a high level of internal consistency (reliability) for our scale used for measurement, with a specific sample size value of 12. In this case, the Cronbach's alpha of 0.818, as presented in Table 4.15, suggests that the items in the data set have a good level of internal consistency. Therefore, based on the results provided, the data on current marketing methods among TU libraries demonstrates good internal consistency and reliability, with a Cronbach's alpha coefficient of .818. The results in Table 5.15 which confirmed reliability and consistencies of the data in the Cronbach's alpha test for data reliability and internal consistency justified the conduct correlations analysis to examine the relationship between the current e-resource marketing strategies used by the libraries (independent variables) and the dependent variable (students' utilisation of e-resources. The subsection that follows depicts the correlations results of data on the current marketing methods among libraries.

5.5.1.2 correlations of data on the current marketing methods among TU libraries

The correlation analysis examines the relationships between the current e-resource marketing strategies used by the libraries (independent variables) and the dependent variable, which is students' utilisation of e-resources. Table 5.16 depicts correlations between the variables correlations to examine the relationship between the current e-resource marketing strategies used by the libraries (independent variables) and the dependent variable (students' utilisation of e-resources).

Table 5.16: Correlations of data on the current marketing methods among TU libraries (N = 706)

	MSL 1	MSL 2	MSL 3	MSL 4	MSL 5	MSL 6	MSL 7	MSL 8	MSL 9	MSL 10	MSL 11	MSL 12
MSL1	1											
MSL2	.862**	1										
MSL3	.881**	.914**	1									
MSL4	.027	.021	.036	1								
MSL5	.047	.038	.062	.844**	1							
MSL6	.005	-.001	.023	.912**	.771**	1						
MSL7	.031	.036	.035	.852**	.793**	.841**	1					
MSL8	.040	.063	.048	.152**	.169**	.204**	.145*	1				

MSL9	.035	.068	.052	.159**	.175**	.211**	.151*	.961*	1			
MSL10	.009	.000	.010	.796**	.733**	.885**	.897*	.106*	.112*	1		
MSL11	.079*	.101**	.102**	.019	.094*	.000	-.005	.755*	.766**	-.033	1	
MSL12	.080*	.107**	.108**	.018	.094*	-.001	-.006	.769*	.781**	-.035	.982**	1

Source: Field data, 2022

The correlation analysis in Table 5.16 examines the relationships between the current e-resource marketing strategies used by the libraries (independent variables) and the dependent variable, which is students' utilization of e-resources. The table presents the correlations between these variables. The table shows a matrix of correlations, with the variables labeled as MSL1, MSL2, MSL3, up to MSL12. Each cell in the table represents the correlation coefficient between two variables. The correlation coefficient ranges from -1 to 1 and indicates the strength and direction of the relationship between two variables. For example, the correlation coefficient between MSL1 and MSL1 (which is the correlation of MSL1 with itself) is 1. This is expected since it represents the correlation of a variable with itself, which is always perfect. Looking at the other correlations, we can see that some pairs of variables have relatively high or positive correlations. For instance, MSL2 and MSL3 have a correlation of .881** (where ** indicates statistical significance). Similarly, MSL6 and MSL7 have a correlation of .841**. On the other hand, some correlations are close to zero or very small, indicating a weak or negligible relationship. For example, the correlation between MSL4 and MSL5 is .036, which suggests a weak association.

The correlations data which explores the relationships between the current marketing methods used by TU libraries and students' utilization of e-resources, have provided insights into the potential associations between the variables. Based on the results we observe that most of the correlations are weak. Now since most of the correlations are weak, the data suggest the need to perform regression analysis to determine the level of contributions of each of the variables to the relationships between the current marketing strategies and students utlisation of e-resources from the TU libraries. The section that comes next presents results on regression analysis of the data on the current methods of marketing library electronic resources.

5.5.1.3 Regression analysis model on current marketing methods among TU libraries

The study further conducted regression analysis to examine the relationship between the libraries' current methods of marketing e-resources (independent variables) and the dependent variable (low student utilisation of e-resources). The regression analysis was based on the research question, "What is the relationship between the current methods of marketing and students' low usage of e-resources?" The following hypothesis was thus formulated to test the relationship between the current methods of marketing and students' low usage of e-resources.

In the study, hypothesis testing was performed on the latent construct to determine whether there is a significant linear relationship or association between each factor level (MSL1-MSL12) and students' intention to use e-resources. The null hypothesis *(Ho2)* stated that there is no significant relationship or association, while the alternative hypothesis *(Ha2)* stated that there is a significant relationship or association.

> *Ho2*: There is no significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

> *Ha2*: There is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources.

To further evaluate the significance of this relationship, additional information such as the p-values or coefficients for the independent variables would be necessary. Table 5.16 thus presents the p-values in a One-Way Analysis of Variance (ANOVA) conducted for the regression model.

Table 5.17: One-Way Analysis of Variance (ANOVA) on current marketing methods among TU libraries

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	831.912	11	75.628	250.715	.000[b]
	Residual	209.346	694	.302		
	Total	1041.258	705			

Source: Field Data, 2022

The results in Table 5.17 show a low (.000b) p-value, so it can be concluded that there is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources. Table 4.19 depicts that the sum of squares for the regression model is 831.912, with 11 degrees of freedom (df), the sum of squares for the residual or unexplained variation is 209.346, with 694 degrees of freedom, and the total sum of squares for the dependent variable is 1041.258, with a total of 705 cases.

The ANOVA results support the conclusion that there is a significant relationship between the libraries' current methods of marketing e-resources (independent variables) and low student usage of e-resources (dependent variables). The small p-value (.000b) suggests that the relationship is highly significant. The results therefore indicate that the null hypothesis (that there is no significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources) is rejected while the alternative hypothesis (that there is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of the e-resources) is accepted.

Based on the stated hypothesis, the study conducted a model summary of the regression analysis to examine the relationship between the libraries' current methods of marketing e-resources (independent variables) and low student usage of e-resources (dependent variables). Table 5.18 presents the model summary of the regression analysis of the data.

Table 5.18: Model Summary of Regression Analysis of data on current marketing methods among TU libraries (N = 706)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894ᵃ	.799	.796	.549

Source: Field Data, 2022

Table 5.18 depicts the results of the regression model, which indicates a relatively strong correlation (R = 0.894) with the dependent variable and explains a substantial portion of its

variance (R2 = 0.799). The R-square, also known as the coefficient of multiple determination whose value is 0.799 (79.9%) means that 79.9%of the proportion of the total variation in the observed values of the response variable is explained by the overall regression model. The adjusted R-square, also known as the adjusted coefficient of multiple determination, whose value is 0.796 (79.6%), is usually lower than the R-square value (79.9%), because the adjusted R-square is the measure of the explanatory power for the number of degrees of freedom. It can be unduly inflated because of the inclusion of variables that do not have predictive power. Based on the information provided, it appears that the regression model has a relatively strong correlation (R = 0.894) with the dependent variable and explains a substantial portion of its variance (R2 = 0.799). The adjusted R2 suggests that the model's explanatory power remains high even when considering the number of predictors and the sample size. Therefore, it is likely that there is a significant relationship between the libraries' current methods of marketing e-resources and low student usage of e-resources. The subsection that follows next presents the result s on the coefficients to determine the contributions of the relationships between the variables.

5.5.1.4 Coefficients results of data on current marketing methods among TU libraries.

Additionally, the study conducted the coefficients of the relationships of data on current marketing methods among TU libraries. **The data in Table 5.19** interpret the unstandardized and standardized coefficient values. The bigger the coefficient value the better the contribution of that factor to the model, hold all other factor constant 0.05.

Table 5.19: coefficients Table for current marketing methods among TU libraries (N=706)

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.557	.090		6.214	.000
MSL1	.223	.031	.234	5.670	.000
MSL2	.323	.041	.336	7.870	.000
MSL3	.561	.041	.579	13.56	.000
MSL4	.098	.073	.076	1.341	.180

MSL5	.000	.041	.000		-.007	.994
MSL6	-.158	.079	-.124		-1.990	.047
MSL7	-.056	.062	-.043		-.897	.370
MSL8	.162	.081	.125		2.012	.045
MSL9	-.128	.084	-.098		-1.523	.128
MSL10	.119	.072	.087		1.654	.099
MSL11	.201	.138	.133		1.463	.144
MSL12	-.256	.145	-.167		-1.772	.077

Source: Field Data, 2022

Table 5.19 presents the coefficients for the regression model, which provide information about the contribution of each independent variable (MSL1 to MSL12) to the model's prediction of low student usage of e-resources. The interpretation of the coefficients is that the constant term represents the expected value of the dependent variable (low student usage of e-resources) when all independent variables are set to zero. In this case, the constant term is 0.557. Also, the unstandardized coefficients (B) represent the change in the dependent variable for a one-unit change in the corresponding independent variable, holding all other variables constant, while the standard error provides an estimate of the variability or uncertainty associated with the coefficient estimates. Further, the standardised coefficients (beta) represent the change in the dependent variable (in standard deviation units), which allows for comparisons of the relative importance of different independent variables. The t-value, on the other hand, represents the ratio of the coefficient estimate to its standard error and is used to test the null hypothesis that the coefficient is equal to zero. The p-value associated with each coefficient tests the significance of the corresponding independent variable. It indicates the probability of observing a coefficient as extreme as the one obtained in the sample, assuming the null hypothesis is true. Based on a significance level of 0.05, you can assess the significance of each independent variable by examining their corresponding p-values. If the p-value is less than 0.05, the coefficient is considered statistically significant.

From the results, the coefficients of MSL1, MSL2, and MSL3 suggest that the variables have positive coefficients (0.223, 0.323, 0.561) and relatively high standardized coefficients (0.234, 0.336, 0.579), indicating a significant positive impact on high student utilization of e-resources. This suggests that the libraries' current methods of marketing e-resources, represented by MSL1, MSL2, and MSL3, have a substantial influence on increasing student utilisation of e-resources. On the other hand, the variables (MSL4, MSL5, MSL7, MSL9, MSL11, and MSL12) have coefficients close to zero or small magnitudes, indicating that they have little impact on students' usage of e-resources. Their standardised coefficients are also relatively low, suggesting that they have less importance in explaining the variation in the dependent variable. Furthermore, the coefficients for the variables (MSL6, MSL8, and MSL10) have resulted in negative values (-0.158, 0.162, and -0.128), indicating a negative association with student usage of e-resources. However, their standardised coefficients are relatively small, suggesting a weaker impact compared to MSL1, MSL2, and MSL3.

The results indicate that the libraries' current methods of marketing e-resources to students are not having a huge effect on students' utilisation of the resources. Out of 12 variables examined, only three, which are MSL1, MSL2, and MSL3, resulted in a positive association with students' use of the resources. The regression model's coefficients (Table 5.18) have shed light on the connection between students' use of e-resources and the libraries' present e-resource marketing strategies (independent variables) (dependent variables). The findings imply that the libraries' existing marketing strategies are not encouraging TU students to use e-resources. This further suggests that the libraries should strengthen their marketing efforts, particularly considering contemporary trends marked by technological innovation and creative methods of promoting the libraries' services to both present and new users.

The survey results highlight the importance of gathering additional insights from library and information professionals regarding their current marketing methods for e-resources to students.

This is especially crucial, as librarians play a pivotal role in facilitating access to these resources. By obtaining their perspectives, we can gain a better understanding of the specific strategies and approaches employed by librarians to effectively promote e-resources to students. As a result, individual interviews with the 21 library and information professionals were conducted to get their opinions on the state of the marketing strategies they use to promote their e-resources. In great part, the respondents' opinions supported the survey's findings (see results in Tables 16, Tables 17, 18, 19, and Table 20). However, some of the comments offered opposing perspectives on the circumstance.

To inform students about e-resources, for example, it was widely believed that *"the libraries currently rely on such conventional techniques as brochures, banners, posters, notices, and signages within and outside the library premises"* (Participant 1, 2,6,9, etc.) This information confirms the survey findings for MSL1, MSL2, and MSL3 (see Table 4.14), which indicate a significant correlation between the three marketing methods and students' utilization of e-resources. This information suggests that the libraries' current approach to marketing e-resources relies heavily on traditional methods of communication and physical promotion. It highlights the potential need for exploring alternative and more innovative strategies to enhance students' awareness and utilization of e-resources.

The findings further revealed other strategies the libraries primarily relied on to market their e-resources to their students. The interviewees primarily mention orientation talks and tours, exhibitions, word-of-mouth marketing, reliance on the lecturers to refer students to the resources, and radio announcements. For example, a participant indicated, *"Our most widely used way of marketing the resource to the students is through the orientation platform, where the department is giving the platform to interact with the students." (Participant 2).* Another interviewee retorted, *"Apart from the orientation talks, we also deploy other measures such as word-of-mouth marketing, reliance on the lecturers to refer students to the resources, and radio announcements."*

(Participant 16). Participant 16's statement indicates that the libraries employ a combination of strategies, including word-of-mouth marketing, leveraging lecturers' influence, and utilizing radio announcements, to promote e-resources. This multi-faceted approach suggests a recognition of the importance of various communication channels and the need to reach students through different means to maximize awareness and utilization of e-resources.

Few interviewees (7), however, presented that the utilisation of marketing strategies such as library and student newsletters, magazines, institutional and library websites, social media, and web 2.0 technologies, email marketing, and text messaging were also prominently used by their libraries to reach out to students, but they were in the minority. One participant for example, mentioned *"As part of our marketing strategy, we also adopt library websites, social media, and web 2.0 tools, as well as marketing via emails and text messaging."* (Participant7). This finding paints a different picture from the survey results (see Tables 4.16), which tended to indicate a very low adoption of such marketing strategies. The contrasting findings between the survey results and participant statements could be attributed to several factors, including differences in perception, variations in library practices among different institutions, or discrepancies in reporting. It is also possible that some libraries have recently started adopting or exploring these modern marketing strategies, leading to the divergence between the survey results and participant opinions. The study also investigated how students learned about library e-resources to acquire more insight into the existing strategies used by libraries to promote their e-resources to the students. The findings will provide a thorough insight of the adoption rate and efficacy of different marketing methods.

5.5.2 Assessing how students learn about e-resources they have previously used.

This section presents survey results on determining how students gained awareness of library e-resources they have previously used at the TU libraries. Respondents were asked to indicate how students gained awareness of library e-resources. The survey questions were based on a predefined list of strategies, and respondents were asked to select "YES," "NO," or "SOMEWHAT" to indicate

the level of use. The results of the survey were compiled and presented in Table 5.20. The findings of this study will shed light on why students use electronic resources so infrequently and highlight the need for modern marketing approaches. By understanding the methods used by libraries to raise awareness, the study aims to improve the utilisation of e-resources and enhance the student experience. Table 5.20 presents the results of the methods for creating awareness among students.

Table 4.20: How students learn about the e-resources they have previously used (N=706).

Ways of gaining knowledge of the databases and other e-resources	YES%	NO%	Somewhat%
being directed by lecturers	89.8	8.2	1.9
Inform by colleagues	89.6	8.3	2.1
library notices, posters, and signage	87.3	2.7	10.0
informed during orientations	84.3	54.1	9.9
Personal discoveries	81.0	11.4	7.6
User manuals, brochures, and flyers	49.3	40.2	19.5
Via library social media Handle	48.1	47.3	4.6
via the campus radio broadcast	47.6	23.4	29.0
Library displays and exhibits	44.8	28.2	27.0
Electronic resource training	41.7	47.0	11.3
Institutional/Library websites	38.5	28.0	33.5
library instruction sessions	38.0	36.0	26.0
Direct Word-of-mouth promotion by library staff	35.0	45.0	20.0
Electronic resource guides	34.0	45.9	20.4
Electronic resource fairs	29.0	47.6	23.4

Source: Field Data, 2022

Table 5.20 presents the results of a survey that aimed to determine how students gained awareness of the library e-resources they have previously used at the TU libraries. The respondents were asked to indicate their level of awareness for each method listed. The results are presented in terms of the percentage of respondents who answered "YES," "NO," or "SOMEWHAT" for each method.

The most common way students gain knowledge of databases and other e-resources is by being directed by lecturers (89.8%), being informed by students' colleagues (89.6%), reading library notices, posters, and signage (87.3%), attending talks and tours during orientations (84.3%), and making personal discoveries (81.0%).On the other hand, less frequently used methods include user manuals, brochures, and flyers (49.3%), marketing via social media (48.1%) and word-of-mouth promotion (47.3%), library displays and exhibits (44.8%), electronic resource training (41.7%), institutional and library websites (38.5%), library instruction sessions (38.0%), social media marketing (35.0%) of e-resources, providing electronic resource guides and electronic/digital displays of e-resources (34.0%), and electronic resource fairs (29.0%).

The results indicate that being directed by lecturers and informed by colleagues are the most effective methods, reading library notices, posters, and signage, attending talks and tours during orientations, and making personal discoveries with high percentages of students indicating awareness through these channels. Other effective methods include library notices, posters, and signage, as well as being informed during orientations. On the other hand, contemporary and emerging methods through which information regarding e-resources such as the use of the library social media handle, electronic resource fairs and electronic resource guides had lower levels of awareness among students.

These findings provide insights into the methods through which students gained awareness of library e-resources. The study emphasizes the need for modern marketing approaches to improve the utilization of e-resources and enhance the student experience. By understanding the methods used by libraries to raise awareness, the study aims to address the infrequent use of electronic resources and promote their effective utilization.

The results highlight the need for libraries to explore more modern and effective ways to market e-resources to students, such as increasing the use of digital and social media strategies. The findings show that libraries must step up their marketing initiatives and create better student

engagement methods because a sizable majority of respondents believe that present campaigns are insufficient or infrequent. The findings highlight the need to investigate more effective methods of promoting electronic resources to students. The following section examines current and newly developed methods for marketing electronic library resources to students.

5.6 Contemporary and emerging strategies for marketing e-resources to students

The third study objective (Chapter 1, in Section 1.5, Subsection 1.5.3) was to explore current and emerging marketing approaches for effective marketing of e-resources to students in the TU libraries in Ghana. To gather respondents' opinions on the modern marketing techniques they think are most effective for marketing e-resources and influencing students' best use of the e-resources and academic databases to which TU libraries subscribe, specific research questions (referenced in Appendix A, Part III) of the study were developed as part of the questionnaire and distributed to the respondents. Table 5.22 presents the descriptive statistics of the various popular contemporary and emerging strategies for marketing e-resources in libraries using a Likert scale ranging from 1 to 5, where 1 denotes "very low," 2 denotes "low," 3 denotes "average," 4 denotes "high," and 5 denotes "very high." The results of the study's findings will shed light on possible cutting-edge marketing strategies for libraries, considering current dynamics regarding students' preferences.

Table 5.21: Descriptive statistics on contemporary and emerging strategies for marketing e-resources to students (N=706).

Contemporary and emerging strategies for marketing e-resources to students	Mean		Std. Deviation	Variance
	Statistic	Std. Error	Statistic	Statistic
Social media marketing of resources *(ESM1)*	4.40	.039	1.035	1.071
Project resources via institutional/library websites *(ESM2)*	3.85	.048	1.276	1.628
video tutorials and audio tutorials *(ESM3)*	3.86	.048	1.276	1.629
Marketing e-resources via Web 2.0 technologies *(ESM4)*	3.80	.047	1.254	1.573
dedicated webpages for e-resources *(ESM5)*	3.79	.048	1.264	1.597
Project resources via digital monitors/screes (ESM6)	3.80	.047	1.259	1.584
Blogging/podcasting *(ESM7)*	3.79	.047	1.258	1.584
Wikis and RSS feeds *(ESM8)*	3.79	.048	1.264	1.598
Instant SMS *(ESM10)*	3.82	.047	1.243	1.544
direct updates via students mailing list *(ESM11)*	4.11	.044	1.179	1.390
Inbox URL links of relevant databases to students *(ESM12)*	4.11	.044	1.179	1.390

Source: Field Data, 2022

Table 5.21 depicts the descriptive statistics on contemporary and emerging marketing strategies for promoting e-resources to students. From the results in Table 5.21, it is observed that social media marketing of resources (ESM1) received the highest mean rating of 4.40, indicating that respondents perceive it as a highly effective strategy for marketing e-resources to students, followed by instant SMS messages (ESM11) and inbox URL links to relevant databases for students (ESM12), which received the next highest mean ratings of 4.11. The rest of the results show that project resources via institutional or library websites (ESM2), project resources via digital monitors or screens (ESM3), and marketing e-resources via Web 2.0 technologies (ESM4) received mean ratings ranging from 3.80 to 3.86, indicating an above-average level of effectiveness. The results further revealed that the use of dedicated webpages for e-resources (ESM5), video tutorials and audio tutorials (ESM6), blogging and podcasting (ESM7), wikis and RSS feeds (ESM8), and direct updates via student mailing lists (ESM10) received mean ratings ranging from 3.79 to 3.82, indicating an average level of effectiveness.

These findings provide insights into the perceived effectiveness of various marketing strategies for e-resources in TU libraries in Ghana. The higher-rated strategies, such as social media marketing, distributing URL links to the databases to students, relying on the students' mailing list, and sending direct instant SMS messages to the students regarding new resources, may be recommended as effective approaches for marketing e-resources to influence students' utilisation of academic databases.

5.6.1 Further analysis of survey data on contemporary and emerging strategies for marketing e-resources to students

The results from the descriptive statistics of data (referenced in Table 5.21 in Section 5.6) were further subjected under further statistical analysis to ascertain the Cronbach reliability and validity of data, One-Way analysis of Variance (ANOVA), testing of hypothesis, and correlations of the data to determine the relationships between the factor variables. The subsection that comes next presents results on Cronbach reliability and validity of the data.

5.6.1.1 Cronbach's alpha measure of reliability and internal consistency of data on contemporary and emerging strategies for marketing e-resources to students

In this study there was analysis of the results of Cronbach's alpha measure to assesses the reliability and internal consistency of the data. Based on the descriptive statistical results, the study conducted additional analyses of the data to assess the data's reliability and internal consistency. Table 5.23 presents the Cronbach's alpha internal consistency (reliability) test results for contemporary and emerging strategies for marketing e-resources to students.

Table 5.22: Cronbach's alpha measure of data reliability and internal consistency (N=706)

Reliability Statistics	
Cronbach's Alpha	N of Items
.978	10

Source: Field Data, 2022

Table 5.22 provides the Cronbach's alpha measure of data reliability and internal consistency for contemporary and emerging strategies for marketing e-resources to students. The Cronbach's alpha coefficient is a commonly used statistic to assess the internal consistency or reliability of a set of items or measures. It measures how closely related the items are to each other. From the data the number of variables included in the test is 10, and the Cronbach's alpha coefficient is calculated to be 0.978. Higher values of the coefficient, which has a range from 0 to 1, indicate stronger internal consistency. The Cronbach's alpha of measure of 0.978, indicates that the data is internally consistent. A strong Cronbach's alpha coefficient indicates that the data measuring the efficacy of various marketing methods for e-resources are trustworthy and internally consistent. The results provide confidence in the validity of the data and support the use of these measures in assessing students' opinions of e-resource marketing strategies. Given the results of the Cronbach's alpha test for data reliability and internal consistency, further information, such as the p-values or coefficients for the independent variables, would be required to further assess the significance of this association.

5.6.1.2 Hypothesis testing for contemporary and emerging marketing strategies.

Hypothesis testing was employed to examine the relationship between the variables assess the relationships between contemporary and emerging marketing strategies and their predicted impact on successful marketing outcomes of e-resources to students. This will facilitate a comprehensive understanding of how the various factors contribute to the effectiveness of these marketing strategies. The stated hypothesis was constructed to test the relationships between the variables (ESM1–ESM11 as in Table 5.21) to examine the relationship between the library's adoption of contemporary and emerging strategies (independent variables) and the dependent variable (effective marketing of e-resources to students). The hypothesis was based on the research question, "What is the relationship between the library's adoption of contemporary and emerging marketing strategies and the effectiveness of marketing e-resources to students?"

Based on the research question the hypothesis was thus formulated to test the presence of a significant linear relationship or association between different levels of factors (ESM1-ESM11) and the success of marketing e-resources to students. The null hypothesis *(Ho2)* stated that there is no significant relationship or association, while the alternative hypothesis *(Ha2)* stated that there is a significant relationship or association.

> *Ho3***:** There is no significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.
>
> *Ha3:* There is a significant relationship or association between the library's adoption of modern strategies and the success of marketing e-resources to TU students.

To test the stated hypothesis, the study conducted a one-way ANOVA to compare the means between the interested independent variables as shown in Table 4.22 to determine if any group of means is statistically significantly different from each other.

5.6.1.3 One-Way analysis of Variance (ANOVA) for contemporary and emerging marketing strategies

During the conduct of further statistical analysis of the data to determine their contribution to students' low use of e-resources, a one-way analysis of variance (ANOVA), which is a statistical test used to determine whether there is a significant difference between the means of two or more groups, was conducted. Table 5.7 shows the results of the ANOVA test comparing the means on factors measuring causes of low e-resource usage levels across the different factor levels (inadequate marketing of the resources, insufficient searching and access skills, insufficient awareness and knowledge of the databases, lack of library staff assistance, lack of motivation/ need for accessing e-resources, and poor internet connectivity). The one-way analysis of variance (ANOVA) is depicted in Table 5.23.

Table 5.23: One-Way analysis of Variance (ANOVA) for contemporary and emerging marketing strategies

ANOVA Table					
Source	*df*	*SST*	*MSE*	*F-value*	*P-value*
Factor	6	3841	640.455	741.68	0.000
Error	4931	4250	0.861		
Total	4942	8092			

Source: Field Data, 2022

The one-way ANOVA test in Table 4.23 is used to determine whether there is a significant difference between the means of the different levels of the factors measuring causes of low e-resource usage. The ANOVA table shows the results of the test, including the degrees of freedom (df), sum of squares total (SST), mean square error (MSE), F-value, and P-value. The F-value is 743.68, and the P-value is 0.000, which is less than 0.05, indicating that there is a significant difference in the means of the different levels of the factors measuring success of marketing e-resource to students. In other words, there is a statistically significant linear relationship or association between the levels of the identified factors and successful marketing of e-resource to students, which supports the alternative hypothesis *(Ha3)* and rejects the null hypothesis *(Ho3).* Therefore, the identified factors have a statistically significant impact on success of marketing e-resource to students. This indicates a statistically significant relationship between the library's adoption of modern strategies (independent variables) and the success of marketing e-resources to TU students (dependent variables).

These findings imply that the library may need to employ such cutting-edge strategies to successfully market electronic resources to TU students. The libraries may boost student use of e-resources and their outreach efforts by routinely analysing and altering their marketing methods, focusing on these contemporary and emerging techniques with such greater positive correlations and significant outcome of the alternate hypothesis while reevaluating or changing ineffective strategies. The results indicate that structural equation model is viable and thereby considered to

examine the level of contributions of each variable to students utlisation of e-resources from the TU libraries.

5.6.1.4 Correlation Matrix for contemporary and emerging strategies for marketing e-resources.

The study further conducted the Correlations matrix on the data to determine the correlations coefficients between the data sets.it is considered appropriate to conduct the correlation matrix to show how strong and in what direction two or more of the data on the perceived effectiveness or implementation level of each marketing strategy for e-resources among the students are related.

Table 5.24: Correlation Matrix for contemporary and emerging strategies for marketing e-resources to students

	ESM 1	ESM 2	ESM 3	ESM 4	ESM 5	ESM 6	ESM 7	ESM 8	ESM 10	ESM 11
ESM 1	1									
ESM 2	.537**	1								
ESM 3	.546**	.973**	1							
ESM 4	.546**	.920**	.922**	1						
ESM 5	.535**	.934**	.931**	.947**	1					
ESM 6	.547**	.924**	.929**	.974**	.955**	1				
ESM 7	.537**	.941**	.925**	.961**	.975**	.948**	1			
ESM 8	.532**	.925**	.934**	.945**	.954**	.945**	.951**	1		
ESM 10	.543**	.897**	.898**	.961**	.942**	.951**	.938**	.936**	1	
ESM 11	.451**	.600**	.594**	.646**	.658**	.636**	.652**	.638**	.664**	1

** correlation is significant at the level (2-tailed)

The correlation analysis in Table 5.24 examines the relationships between the contemporary and emerging marketing strategies (independent variables) and the dependent variable, which is students' utilisation of e-resources. In the Table the correlations between these variables shows a matrix of correlations, with the variables labeled as ESM1, EMS2, EMSL3, up to MSL11. Each cell in the table represents the correlation coefficient between two variables. The correlation coefficient ranges from -1 to 1 and indicates the strength and direction of the relationship between two variables. From the results in Table show that the correlation coefficient between EMS1 and EMS1 (which is the correlation of EMS1 with itself) is 1, which indicate a perfect correlation. Looking at the other correlations, we can see that the pairs of variables have highly positive

correlations. For instance, EMS2 and EMS3 have a correlation of .973** (where ** indicates statistical significance). Similarly, EMSL4 and EMS5 is .947**, and EMS6 and EMS7 have a correlation of .949**. which suggests a strong positive association.

Based on the results, we can conclude that the correlations analysis to explores the relationships between the contemporary and emerging marketing methods and students' utilization of e-resources, indicate strong and positive associations between these variables. Now since most of the correlations are positively strong there is no need to perform regression to determine the level of contributions of each of the variables to the relationships. This indicate that structural equation model is viable and thereby considered to examine the level of contributions of each variable to students utlisation of e-resources from the TU libraries. The section that comes next presents results on the feasibility of introducing Web 2.0 technologies as part of the marketing initiatives of libraries.

The interview findings echoed the survey results, revealing various contemporary and emerging methods and tools that closely aligned with the survey findings. These methods offer promising avenues for TU libraries to enhance their marketing strategies and engage students with their resources. The qualitative data suggests that libraries should adopt a multi-faceted approach to marketing e-resources. This involves utilising various contemporary and emerging technologies and techniques to effectively engage with students and promote resource utilization. This approach creates a dynamic and responsive environment conducive to student learning and research success.

The following expressed the dominant Insights from Participant:

1) *Participant 1 endorsed the idea of user engagement with Web 2.0 technologies. By doing so, libraries can cultivate an interactive environment that facilitates student learning and research, ultimately contributing to academic achievement.*

2) *Participant 4 highlighted the significance of engaging with students via the website of institution and library as vital platforms tool to share with students the resources subscribed by the library to enhance e-resource marketing efforts.*

3) *Participant 5 emphasized the importance of leveraging social media for marketing e-resources, aligning with the study's findings presented in Chapter 4, Section 4.3.3. Social media platforms can be powerful tools for effectively marketing and promoting electronic resources among students.*

4) *Participant 8 also acknowledged the significance of Visual Content and Student preferences. The findings indicated that strategies focusing on visual content, such as videos and images, resonate well with students and are effective in marketing e-resources.*

5) *Participant 10 underscored the value of URL Links for Improved Access, as demonstrated in the results related to research objective 4. The creation of universal resource locator (URL) links on library computers' desktops can address students' underutilization of subscribed electronic databases.*

6) *Participant 13 emphasized the Benefits of Digital Display Screens, aligning with the study's insights from research objective 5. Digital display screens have the potential to significantly increase the utilization and adoption of e-resources by showcasing their diversity and offering guidance on accessing them.*

7) *Participant 15 also recognized the potential of Utilizing Email Alerts. The study's findings revealed that libraries and institutions can establish email lists to regularly update students about available e-resources, a strategy that effectively enhances awareness and usage.*

8) *Participant 16 further highlighted the Benefits of Email Newsletters. Creating and sending regular newsletters can be an effective approach to increase student awareness and usage of valuable digital resources.*

9) *Lastly, Participant 19 endorsed the idea of Leveraging RSS Feeds, acknowledging their potential to promote e-resources by consistently providing updates on new resources.*

These insights collectively emphasize the importance of leveraging modern strategies and technologies, such as Web 2.0 tools, visual content, digital displays, email alerts, and RSS feeds, to effectively market e-resources and engage students with valuable digital content. The subsection that comes next presents the results regarding the adoption of Web 2.0 technologies for marketing e-resources to students.

5.6.2 Web 2.0 technologies for marketing e-resources to students

The potential benefits of incorporating Web 2.0 technologies for libraries' provision of e-resources to students include higher publicity of the resources, better service delivery, higher user satisfaction, and improved perceptions. To explore the feasibility introducing Web 2.0 technologies as part of the marketing initiatives of libraries, the researcher conducted a survey that inquired respodants to rate the viability of various Web 2.0 tools for marketing e-resources to students in the libraries. Respondents rated the predetermined Web 2.0 tools for marketing e-resources as detailed in Chapter 1, Section 1.5.3, on a Likert scale ranging from 1 to 5, where 1 represents "very low," 2 represents "low," 3 represents "average," 4 represents "high," and 5 represents "very high." The resulting data was analyzed and presented in Table 5.25

Table 5.25: Descriptive statistics for Web 2.0 technologies for marketing e-resources to students(N=706)

	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Std. Error
social media networking sites (W1)	4.78	1.471	.301	.092
Wikis (W2)	3.73	1.447	.248	.092
Google meet & Classroom(W3)	3.69	1.431	.259	.092
Blogging pages (W4)	2.62	1.424	.259	.092
Podcast/video casts*(W5)*	2.53	1.430	.250	.092
Virtual Instant messaging platforms (W*6)*	4.53	1.434	.260	.092
Flickr *(W7)*	1.97	1.423	.245	.092
RSS Feeds *(W8)*	2.37	1.334	.243	.092
vokis *(W9)*	1.61	1.317	.238	.092

Source: Field Data, 2022.

Table 5.25 presents descriptive statistics for the viability of Web 2.0 technologies for marketing e-resources to students. The data were collected on the field of study through a survey that included respondents rating the viability of various Web 2.0 tools on a Likert scale ranging from 1 to 5, where 1 represents "very low" and 5 represents "very high." The results in Table 5.25 provide information on the mean, standard deviation, skewness, and standard error for each Web 2.0 technology.

As can be seen, the results in Table 5.25 revealed that social media networking sites (W1), having recorded a mean viability rating of 4.78, are the highest in terms of viability for marketing e-resources among the respondents. The revelation indicates that respondents perceive them to have a high potential for marketing e-resources. The standard deviation of 1.471 suggests some variability in respondents' ratings. The skewness of 0.301 indicates a slight positive skew, suggesting that the distribution is slightly skewed towards higher viability ratings. Virtual instant messaging platforms (W6) had a mean viability rating of 4.53, indicating a high level of perceived viability. The standard deviation of 1.434 suggests some variability in respondents' ratings. The skewness of 0.260 suggests a relatively symmetric distribution.

The results further depict that the mean viability rating for wikis (W2) is 3.73, indicating an average level of perceived viability for marketing e-resources. A standard deviation of 1.447 suggests moderate variability in respondents' ratings. The skewness of 0.248 suggests a relatively symmetric distribution. The mean viability rating for Google Meet & Classroom (W3) is 3.69, like the rating for wikis, indicating an average level of perceived viability. The standard deviation of 1.431 suggests moderate variability. The skewness of 0.259 suggests a relatively symmetric distribution. The results also show blogging pages (W4) with a mean viability rating of 2.62, indicating a lower level of perceived viability compared to the previous technologies. The standard deviation of 1.424 suggests considerable variability in respondents' ratings. The skewness of 0.259 suggests a

relatively symmetric distribution. The mean viability rating for podcast and video casts (W5) is 2.53, indicating a similar lower level of perceived viability as blogging pages. The standard deviation of 1.430 suggests considerable variability. The skewness of 0.250 suggests a relatively symmetric distribution.

The results, on the other hand, indicate that Flickr (W7) recorded a mean viability rating of 1.97, indicating a low level of perceived viability for marketing e-resources. The standard deviation of 1.423 suggests considerable variability. The skewness of 0.245 suggests a relatively symmetric distribution. Similarly, the mean viability rating for RSS feeds (W8) is 2.37, indicating a lower level of perceived viability compared to most other technologies. The standard deviation of 1.334 suggests moderate variability. The skewness of 0.243 suggests a relatively symmetric distribution. While the mean viability rating for Vokis (W9) is 1.61, indicating the lowest level of perceived viability among all the results. The results in Table 4.27 thus suggests that social media networking sites, virtual instant messaging platforms, and wikis are perceived as having higher viability for marketing e-resources to students. On the other hand, technologies like Vokis, Flickr, RSS feeds, blogging pages, and podcast/video casts are perceived as having lower viability. It is important to consider these findings when developing marketing initiatives for e-resources in libraries.

The data analysis included analyses and the presentation a correlation matrix for the viability of adopting contemporary and emerging digital media technologies for marketing e-resources to students in Table 5.26.

Table 5.26: Correlation matrix for Web 2.0 technologies for marketing e-resources to students(N=706)

	W1	W2	W3	W4	W5	W6	W7	W8	W9
W1	1.00								
W2	.911	1.00							
W3	.912	.863	1.00						
W4	.911	.846	.911	1.00					
W5	.852	.829	.916	.921	1.00				
W6	.802	.837	.920	.903	.910	1.00			
W7	.801	.851	.912	.925	.921	.914	1.00		
W8	.865	.814	.920	.917	.932	.912	.921	1.00	
W9	.802	.906	.910	.913	.917	.914	.938	.932	1.00

Source: Field Data, 2022.

Table 5.26 presents the correlation matrix between the viability ratings of different Web 2.0 technologies for marketing e-resources to students. The results indicate that the correlation coefficient ranges from -1 to +1, with 1 indicating a perfect positive correlation, -1 indicating a perfect negative correlation, and 0 indicating no correlation.

The results depict that the correlation between W1 (social media networking sites) and W2 (wikis) is 0.911, indicating a strong positive correlation. Similarly, the correlation between W1 and W3 (Google Meet & Classroom) is 0.912, indicating a strong positive correlation. Likewise, between W1 and W4 (blogging pages), the correlation is 0.911, indicating a strong positive correlation. The correlation between W1 and W5 (podcasts and videos) is 0.852, indicating a strong positive correlation. The correlation between W1 and W6 (virtual instant messaging platforms) is 0.802, indicating a moderately positive correlation. The correlation between W1 and W7 (Flickr) is 0.801, indicating a moderately positive correlation. The correlation between W1 and W8 (RSS feeds) is 0.865, indicating a strong positive correlation. The correlation between W1 and W9 (Vokis) is 0.802, indicating a moderately positive correlation.

From the correlation matrix, we notice that correlations within the same technology are all 1.00, as expected. The correlation matrix suggests that there are strong positive correlations between most of the Web 2.0 technologies for marketing e-resources. This means that if one technology is perceived as viable, there is a high likelihood that other technologies will also be perceived as viable. It indicates a certain level of consistency in respondents' ratings across different technologies. These findings can be useful for libraries and marketing initiatives, as they can focus on leveraging multiple Web 2.0 technologies that are highly correlated in terms of perceived viability to maximise their effectiveness in marketing e-resources to students.

The results of Kaiser-Meyer-Olkin's (KMO) Measure of Sampling (KMO) and Bartlett's Test of Significance to check the fitness and appropriateness of the data were further conducted on the data, and the results are presented in Table 5.27.

Table 5.27: KMO measure of sampling adequacy and Bartlett's Test of Significance for viability of Web 2.0 technologies for marketing e-resources to students(N=706)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.917
Bartlett's Test of Sphericity	Approx. Chi-Square	16868.936
	df	36
	Sig.	.000

Source: Field Data, 2022.

The data provided in Table 5.27 includes the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of significance for the viability of Web 2.0 technologies for marketing e-resources to students. KMO Measure of Sampling Adequacy: The KMO measure assesses the suitability of the data for factor analysis. It ranges from 0 to 1, with values closer to 1 indicating better sampling adequacy. In this case, the KMO measure is reported as 0.917, which indicates a high level of sampling adequacy. This suggests that the data is appropriate for conducting factor analysis to explore underlying dimensions or factors related to the viability of Web 2.0 technologies.

Bartlett's Test of Sphericity: Bartlett's test evaluates whether the observed correlation matrix significantly deviates from the identity matrix, indicating the presence of relationships between variables. The test generates an approximate chi-square value, degrees of freedom (df), and a significance level (Sig.). In this case, the approximate chi-square value is reported as 16868.936, with 36 degrees of freedom. The significance level is shown as .000, which indicates that the correlation matrix is significantly different from the identity matrix. Therefore, the null hypothesis (no relationships between variables) is rejected, suggesting that there are significant relationships between the viability ratings of Web 2.0 technologies for marketing e-resources to students. The high KMO measure and the significant Bartlett's test of sphericity indicate that the data is suitable for further analysis, such as factor analysis, to explore underlying dimensions or factors related to the viability of Web 2.0 technologies.

Table 5.28: Component Matrixa for Web2.0 technologies for marketing e-resources to students

	Component
	1
W1	.975
W2	.974
W3	.975
W4	.972
W5	.974
W6	.946
W7	.927
W8	.964
W9	.947

Source: Field Data, 2022.

Table 5.28 presents the Component Matrix for the viability of adopting Web2.0 technologies for marketing e-resources to students. The matrix displays the correlations between the variables and the extracted component. The Component Matrix suggests that all the variables are strongly correlated with the extracted component, which may represent a common underlying factor related to the viability of marketing e-resources via Web 2.0 media technologies to students. The highest correlations are observed for W1 and W3 (.975), followed closely by W2 (.973) and W4 (.972). The variable with the lowest correlation is W7 (.927), although it is still moderately correlated with

the extracted component. These results indicate that the variables are highly related to the extracted component and suggest that there may be a single factor underlying the participants' perceptions of the viability of digital media technologies for marketing e-resources to students. This supports the findings of the KMO measure and Bartlett's Test of Significance, which indicated that the data were suitable for conducting a principal component analysis.

Given the results of the survey of student respondents regarding the study's objective to identify feasible contemporary and emerging digital media technologies for marketing e-resources to students, the researcher felt it was necessary to carry out additional research by conducting one-on-one interviews with 21 library professionals to gain insights on the most effective modern technologies and marketing strategies for e-resources targeted at students. The results of these interviews provided further insights and revealed additional important issues for advertising e-resources to students. The results of the one-on-one interviews with library and information specialists are presented in the following paragraphs, organised according to the key themes that emerged from the talks with the 21 participants.

It emerged from the findings that the interviewees predominantly recognised the need for adopting cutting-edge Web 2.0 information and communication technologies (ICTs) and related digital technologies for enhancing the marketing efforts of those working in the TU libraries. In analyzing the data, it was however observed that about a two-thirds (14) majority of participants could not immediately mentioned any examples of Web 2.0 technologies, while the rest (7) did. But when participants were given a few leads or explanations, almost all (19) of them recognised what Web 2.0 entailed. In one instance, a participant indicated, *"The Web 2.0 technologies that immediately come to mind are social media networking tools, blogs, wikis, and RSS feeds."* (Participant 11). In one instance, a participant indicated that *"using Web 2.0 tools such as social media, and wikis will create for libraries more dynamic and responsive platforms to supports provision of e-resources to student."* (Participant 3). It was further mentioned that "social media platforms in particular"

(such as Facebook, Twitter, Instagram, LinkedIn, etc.), when used for communicating with students and promoting e-resources, will present an opportunity to provide the resources in a more interactive and engaging way. (Participant 4). It was further mentioned that "social media platforms in particular *" (such as Facebook, Twitter, Instagram, LinkedIn, etc.),"* when used for communicating with students and promoting e-resources, will present an opportunity to provide the resources in a more interactive and engaging way. (Participant 4). Participant 16 also mentioned *"Blogs and wikis can be used to create and share content about specific e-resources, including their features and how they can be used to support student learning and research." Another participant noted* "Online discussion forums and social bookmarking sites for encouraging collaboration and sharing among students and providing a platform for asking questions and providing feedback on e-resources" (Participant 9). It was further suggested severally that the libraries could adopt *"podcasts and webinars for delivering instructional content and promoting e-resources to students in an engaging and interactive format" (Participant 2).* Also, for creating immersive learning experiences that showcase the value of library resources, the results suggest that the use of Web 2.0 technologies in the view of the interviewees are effective way for libraries to engage with students and promote e-resources. Specifically, social bookmarking sites and online discussion forums were identified as tools to encourage collaboration and sharing among students, while social media, blogs, and wikis were seen as ways to create a dynamic and responsive environment that supports student learning and research. These findings further suggest that libraries should consider incorporating Web 2.0 technologies into their marketing strategies to better engage with students and promote the use of their e-resources. The section that comes next presents findings on adoption of social media tools for marketing e-resources to students.

5.6.3 Social media strategies for marketing e-resources to students

This section presents the findings of respondent preferred social media networking tools for marketing e-resources to students as part of the issues to be addressed under the study's fourth

objective, which sought to identify contemporary approaches for marketing e-resources to students. The survey asked student respondents to evaluate a list of preselected social media strategies for marketing e-resources to students. They were asked to indicate their level of agreement by choosing "YES," "NO," or "SOMEWHAT" for each social media tool. The list included various social media channels that the library could use to engage with students, raise awareness, and educate them about the advantages of using e-resources. The responses to the questionnaire were collated and presented in Table 5.29.

Table 5.29: Social media preference by students for marketing e-resources(N=706).

Social media preference	YES %	Somewhat %	NO%
WhatsApp	79.0	20.3	0.7
Demonstrations/tutorials on YouTube	78.7	21.3	-
Demonstrations/tutorials on Facebook	77.6	22.1	2.0
TikTok for tutorials	77.3	20.0	3.0
Regular updates on the library tweeter handle	74.3	25.7	-
Instagram	71.0	11.9	17.1
FAQs on snapchats	69.3	12.0	18.7
telegram	68.1	19.6	8.9
Pinterest	67.6	23.4	23.4
myspace	64.0	27.0	8.3
LinkedIn	61.0	31.3	7.7
blogging	58.5	33.5	13.5
RSS Feed	57.9	21.3	20.8

Source: Field Data, 2022

Table 5.29 presents the preferred social media networking tools for marketing e-resources to students, as reported by the respondents to the survey. WhatsApp is the most popular social media network, with 79% of respondents saying they would prefer to see that medium be used to engage students in the promotion of electronic materials from academic databases. This is followed closely by demonstrations and tutorials on YouTube, with 78.7% of respondents indicating they would prefer to see that medium be used to engage students in the promotion of electronic materials from academic databases. Demonstrations and tutorials on Facebook also have a high level of acceptance among the respondents (77.6%). TikTok for tutorials is also a popular strategy, with

77.3% of respondents indicating they would prefer to see that medium be used to engage students in the promotion of electronic materials from academic databases.

Regular updates on the library's Twitter handle are also preferred by a significant proportion of respondents, with 74.3% indicating acceptance. Instagram is also a preferred strategy for 71% of respondents, followed by Pinterest, with 69.3% of respondents indicating overwhelming acceptance. Telegram is also a popular strategy, with 68.1% of respondents indicating overwhelming acceptance. On the other hand, the least preferred social media channels are LinkedIn and Myspace, with 61% and 64% of respondents, respectively, indicating familiarity. Blogging is also not as popular, with 58.5% of respondents indicating acceptance. Snapchat and Tumblr are also not very popular, with 67.6% and 57.9% of respondents, respectively, indicating familiarity. Overall, the findings suggest that social media strategies that focus on visual content, such as videos and images, are preferred by the respondents for marketing e-resources to students. Social media channels that are widely used by students for social interaction, such as WhatsApp and Pinterest, are also popular for marketing e-resources.

Considering the disclosures from the survey, the researcher asked participants in one-on-one interviews for their opinions to determine the most appropriate social media technologies they were familiar with and could use for the marketing of e-resources aimed at their students. As a result, the findings show that the majority, of participants thought that the adoption of cutting-edge information and communication technologies (ICTs) and related digital technologies would increase the marketing efforts of those working in libraries and information services. The majority, of participants agreed that proper current marketing techniques to market the e-resources to influence students' patronage were indeed needed for the librarian of the TUs in Ghana.

One participant for example intimated: *"Most of our students now have access to smart devices such as mobile phones; thus, for the libraries to effectively market the e-resources to students, the library and information professionals can rely on the students' higher craving and usage of smart*

devices to create user awareness by disseminating appealing messages concerning e-resources to influence usage.". (Participant 2) Another participant pointed out *"I recognise the rise in contemporary technologies such as social media, which libraries can adopt to disseminate information about e-resources to students.".* (Participant 6). "It is very necessary that libraries of today, especially those in the Ghanaian TUs, establish and maintain their presence on these social media platforms concerning their resources and services." (Participant 3). Notable examples of social media networking sites that participants mostly mentioned included *"WhatsApp, Facebook, Twitter, Pinterest, YouTube, TikTok, Instagram, telegram, Snapchat etc."* (Participant 11).

5.6.4 Visibility on library /institution websites

Participants in the study, during the one-on-one interviews, predominantly recognised the rationality of both the library and intuitional websites as ideal avenues for marketing e-resources. In one instance, a participant indicated, *"I strongly agree with the idea of using the library page and institutional website for marketing and promotional activities for the e-resources available from the subscribed academic databases."* (Participant 6). Another participant suggests, *"The libraries can consider the use of the institutions and library websites as platforms for marketing the library's resources, where links to e-resources and demonstrative videos on how to access e-resources from the library can be posted to attract the attention of students."* (Participant 17). *"I strongly agree with the use of the library webpage and institutional website for marketing and promotional activities for the e-resources because it will be a cost-effective marketing method, especially since our library has limited budgets to provide clear descriptions of each resource,"* One participant (Participant 2) stated.

The results indicate that participants in the study recognise the potential value of using the library website and institutional website as effective channels for promoting and marketing e-resources available from subscribed academic databases. Participants highlight the benefits of posting links

to e-resources and demonstrative videos on how to access them, which can help attract the attention of students and increase their awareness of the library's resources.

These findings suggest that libraries and academic institutions should prioritise the use of their websites as a primary marketing tool for e-resources. By making it easy for students to access and utilise these resources, libraries can enhance the overall learning experience and improve academic performance. Additionally, effective marketing can also help libraries increase the usage and value of their e-resources, thereby justifying the cost of subscriptions and demonstrating their value to stakeholders.

5.6.5 Sending targeted SMS messages to students.

The findings from the interviews further revealed that part of the contemporary and emerging strategies for marketing e-resources to students is the sending of targeted SMS messages as one contemporary way libraries can reach students directly on their mobile devices and provide them with valuable information about new e-resources. For instance, participants predominantly reported that *"by sending targeted SMS messages, libraries can reach students directly on their mobile devices and provide them with valuable information about new e-resources."* This revelation indicates that the libraries are adopting new and innovative strategies to market their e-resources to students via mobile devices. With the popularity of SMS messaging, libraries can directly communicate with students and provide them with relevant and timely information about the availability of new e-resources. This approach has the potential to improve students' access to valuable information resources and increase their engagement with the library. The findings suggest that libraries must continue to explore and adopt new marketing strategies to stay relevant and effectively serve the needs of their users in the digital age.

5.6.6 Emailing alerts to update students about e-resources.

The findings from the interviews further revealed that emailing alerts to update students about e-resources is a great way to keep them informed about new resources that are available to them,

thereby confirming the outcome from the survey (as referenced in Table 5.21 in Section 5.7.1). One of the participants indicated, *"We can also improve our provision of e-resources to students when we include direct links to the e-resources so students can easily access them with a single click."* (Participant 10). Another way is to *"Consider including images or screenshots of the e-resources to make the email more visually appealing." Make sure the subject line is attention-grabbing and informative. Use keywords that will make the email stand out in a crowded inbox".* (Participant 8) Regarding the ideal times to send such emails to students, one participant indicated, *"Send the email at a time when students are likely to be checking their email, such as during the day on a weekday."* (Participant 13)

Aside from the several contemporary and emerging marketing techniques, the libraries, in the view of the majority, of participants, could complement the contemporary and emerging ways of marketing e-resources with the already conventional marketing techniques. For example, participant 8 pointed out some conventional strategies that complement the contemporary strategies: *"current awareness service, selective dissemination of information to students, lectures, seminars, exhibitions, radio and TV communication, library magazines, and newsletters"* for successful influence on students to improve their patronage of e-resources. A participant for example indicated *"The practise of posting notices, publishing and making user manuals, brochures, and flyers available to students, and mounting banners at advantageous locations could still complement modern approaches to enhancing the visibility of the e-resources to students."* (Participant 8). Judging from these revelations, they suggest that despite the potential benefits of libraries embracing such contemporary and emerging strategies and techniques for marketing e-resources to students, most participants believed that the libraries should complement them with such conventional methods of marketing library resources to benefit from the synergy they bring, leading to a more robust approach to marketing the resources to students.

While they were eager to adopt these modern strategies and increase student usage of e-resources, the constraints on funding and resources were a significant barrier. For example, participant 12 indicated, *"We are ready and willing to adopt such modern strategies to influence student patronage of the e-resources; however, we are constrained in terms of funding and resources to adopt such strategies."* Another participant disclosed, *"E-resources are digital-based resources, and if we want to market such resources, we need good access to the digital space, or the internet, and its related devices, such as computers, laptops, and smart devices."* (Participant 14). Participants cited variously the need for *"mobile applications (apps) for providing on-the-go access to e-resources and library services" (Participant 18).* Gamification techniques for creating interactive games and challenges could also, *"encourage students to explore and use library resources" (Participant 7).*

In subsequent submissions, the Participants mentioned that *"Collaborative writing and publishing tools (e.g., Google Docs, Dropbox Paper) for creating and sharing information and resources related to e-resources are other fine ways to attract students to use e-resources."* (Participant 15).

5.6.7 Mobile phone/Mobile apps for supporting provision of e-resources.

The provision of a mobile app to support the marketing of e-resources is another emerging strategy to make e-resources accessible to students. The findings from the interviews with librarians and information professionals revealed that promoting e-resources to students via mobile apps will be a powerful way of marketing e-resources to students. For instance, a participant indicated that *"the high use of smart and mobile devices makes mobile apps an effective way to promote e-resources among students Mobile apps are becoming increasingly popular and convenient, allowing users to access information quickly and easily from their smartphones or tablets"* (Participant 20). By creating a mobile app for e-resources, students can easily access and use the resources at any time, regardless of their location. Mobile apps can also be designed with features that make e-resources more engaging and interactive. For example, a mobile app could include features like quizzes,

interactive tutorials, and gamification elements that encourage students to engage with the content. Additionally, mobile apps can provide personalized recommendations for e-resources based on the student's preferences and interests. This can help students discover new resources that they may not have otherwise known about.

5.6.8 Universal resource locators (URLs) links on library computers

The findings from the interviews with the library and information professionals further corroborating the survey results (as referenced in Table 5.21 in Section 5.6) revealed that one of the contemporary or emerging strategies for marketing e-resources to students is the strategy of creating universal resource locators (URLs) links to databases of the e-resources and on library computers' desktops is an effective strategy to address students' underutilization of subscribed electronic databases. By making the databases more easily accessible and providing training on how to use them, students are more likely to utilise these valuable resources. One participant indicated that *"creating links to a universal resource locator on the monitors of library desktop computers is a useful strategy to improve students' underutilization of subscribed electronic databases at the institution"* (Participant 5). Furthermore, another participant highlights the benefits of posting links to e-resources and demonstrative videos on how to access them, *"as these actions can capture students' attention and increase their awareness of the library's resources."* (Participant 21).

5.6.9 Digital display screens at vantage points within and outside the libraries

The participants, predominantly (16), suggested that using such emerging technologies that enable e-resources to be displayed using digital display screens at vantage points within and outside the libraries is a forward-looking way to market and/or promote e-resources to students at technical universities in Ghana. The study's results regarding research objective 4 demonstrated the effectiveness of digital display screens in marketing the utilization of e-resources. A participant indicated, *"Digital display screens can significantly increase the usage and adoption of e-*

resources, which indicates that digital display screens can showcase the diverse range of e-resources available, including e-books, online journals, databases, and other digital content."(Participant 9). Another participant wrote, "Digital display screens can provide guidance on accessing e-resources, including login information and relevant website links."(Participant 15). This can simplify the complexities of e-resources and facilitate their use.

Having identified the contemporary and emerging strategies that will assist the libraries in effectively marketing their e-collections to the users (students), it is incumbent on the investigator to investigate the competencies possessed by the library staff in the study areas to enable them to effectively market e-resources to students.

5.7 Factors influencing behavioural intentions of students to use e-resources.

The study had to explore the factors influencing students' behaviour towards the use of e-resources in university libraries. The research questions (referenced in Part IV of Appendix A) stemming from the fourth research objective (1.5.4), as detailed in Chapter One of this study, were thus formulated to assist the investigator in accomplishing the research objective. Respondents conducted their assessment by indicating the extent to which the listed statements influenced their decisions to patronise e-resources or not on a Likert scale from 1 to 5, which was described as 1: very low, 2: low, 3: average, 4: high, and 5: very high. The table presents the results of a survey that explored the factors that determine students' behaviour towards the use of e-resources in the technical university libraries. Table 5.30 provides the descriptive statistics data regarding the mean, standard deviation, skewness, and standard error values for each of the factors that were assessed (ISB1-ISB10).

Table 5.30: Influence of user qualities on behavioural intentions to use e-resources (N=706).

	Mean		Std. Deviation	Variance
	Statistic	Std. Error	Statistic	Statistic
Marketing of the resources (ISB1)	3.80	.048	1.267	1.605
Awareness of the resources (ISB2)	3.82	.047	1.251	1.565
Efficacy with technology in use (ISB3)	3.77	.048	1.272	1.619
Perceived ease of access to resources (ISB4)	3.76	.048	1.281	1.640
Perceive quality/value of resources (ISB5)	3.77	.048	1.280	1.639
Support from library staff (ISB6)	3.79	.048	1.273	1.621
Perceived quality of the IS system (ISB7)	3.75	.048	1.283	1.647
Perceived relevance of resources (ISB8)	3.77	.048	1.270	1.614
Influence from peers and lecturers (ISB9)	3.77	.048	1.284	1.649
Information retrieval skills (ISB10)	3.79	.047	1.260	1.589

Source: Field Data, 2022

The data in Table 5.30 provides descriptive statistics on the factors that influence students' behaviour towards using e-resources in TU libraries. Mean: The mean represents the average value for each factor. In this case, the mean values range from 3.75 to 3.82. These values indicate a moderate level of agreement or perception among the respondents regarding the factors that influence their behavioral intentions to use e-resources from the library. The standard deviation measures the variability or dispersion of the responses around the mean. In this case, the standard deviation values range from 0.047 to 0.048. These values indicate a relatively low level of variability, suggesting that the responses for each factor are relatively consistent and close to the mean. The variance is a measure of how spread out the responses are from the mean. It is calculated as the square of the standard deviation. The variance values range from 1.251 to 1.647.

The results suggest that the factors influencing students' behavioral intentions to use e-resources from the library have relatively moderate levels of agreement and consistency among the respondents. However, there is some degree of variability in the perceptions or attitudes towards these factors. These values indicate that there is some degree of variability among the responses for each factor, but the differences are not extremely large. these results highlight the various

factors that influence students' intention to use e-resources. Libraries can leverage these insights to enhance their marketing strategies, improve access and usability, provide support, and ensure the quality and relevance of e-resources to encourage greater utilization among students. Further analysis, such as hypothesis testing or regression analysis, can provide more insights into the significance and impact of these factors on students' behavioral intentions.

5.7.1 Cronbach's alpha measure of data reliability and internal consistency for the influence of user qualities on behavioral intentions to use e-resources.

Based on the descriptive statistical results, the study conducted further analyses of the data to assess the data's reliability and internal consistency. Based on the descriptive data for factors influencing the behavioural intentions of students to use e-resources The study further conducted additional statistical analyses on the collected data to determine the extent to which each factor (ISB1–ISB10) contributes to students' behavioural intentions to use e-resources. A statistical reliability analysis was conducted in the analysis, which helped determine the internal consistency and reliability of the data. Based on the descriptive statistical results, the study conducted further analyses of the data to assess the data's reliability and internal consistency. Table 5.31 presents the Cronbach's alpha internal consistency (reliability) test results for contemporary and emerging strategies for marketing e-resources to students.

Table 5.31: Cronbach's alpha measure of data reliability and internal consistency for the influence of user qualities on behavioral intentions to use e-resources(N=706)

Reliability Statistics	
Cronbach's Alpha	N of Items
.992	10

Source: Field Data, 2022

Table 5.31 provides the reliability statistics for the factors influencing the behavioral intentions of students to use e-resources. The Cronbach's alpha coefficient of .992 indicates a high level of internal consistency and reliability among the items measuring user qualities. This suggests that

the items in the questionnaire that assess user qualities are highly correlated and consistently measure the same underlying construct. With a high Cronbach's alpha value, it can be inferred that the items in this study are reliable measures of the factors influencing students' behavioral intentions to use e-resources.

Table 5.32: One-Way Analysis of Variance (ANOVA) influence of user qualities on behavioral intentions to use e-resources.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1035.521	9	115.058	833.198	.000[b]
	Residual	96.112	696	.138		
	Total	1131.633	705			

Source: Field Data, 2022

In Table 5.32, a one-way analysis of variance (ANOVA) was conducted to assess the significance of the regression model. The ANOVA table (Table 5.32) presents the sum of squares, degrees of freedom, mean squares, F-value, and significance level. The ANOVA table consists of two main components: the regression and residual. The regression component represents the variation in the dependent variable (student intention to use e-resources) that can be explained by the independent variables (factors predicting behavioral intentions). It includes the sum of squares (1035.521), degrees of freedom (9), and mean square (115.058). The residual component represents the unexplained variation in the dependent variable. It includes the sum of squares (96.112) and degrees of freedom (696). The total sum of squares (1131.633) represents the overall variation in the dependent variable. The F-value (833.198) which is calculated by dividing the mean square of the regression by the mean square of the residual indicates the ratio of explained variance to unexplained variance in the dependent variable. Thus, the F-value is highly significant with a p-value (significance level) of .000, indicating that the regression model is statistically significant. Overall, the ANOVA results suggest that the regression model, which examines the relationship between the libraries' current methods of marketing e-resources and low student usage of e-resources, is highly significant in explaining the variation in students' intention to use e-resources.

5.7.2 Hypothesis Testing of latent Construct of factors influencing behavioural intentions to use e-resources.

Additionally, the investigator performed hypothesis testing on the latent construct. The null hypothesis stated that there is no significant linear relationship or association between each factor level (ISB1-ISB10). and students' intention to use e-resources. The alternative hypothesis stated that there is a significant linear relationship or association between each factor level (ISB1-ISB10) and students' intention to use e-resource usage. This test was used to determine whether the identified factors have a statistically significant impact on students' intentions to use e-resources.

> *Ho4 -* No significant linear relationship or association exists between each factor level (ISB1-ISB10) and students' intention to use e-resources.

> *Ho4 -* The factor levels have a significant linear relationship or association between each factor level (ISB1-ISB10) with students' intention to use e-resources.

To test these hypotheses, regression analysis was conducted to examine the relationship between the factors predicting behavioral intentions (independent variables) and the intention to use e-resources (dependent variable). The correlation analysis aimed to answer the research question regarding the relationship between predicted factor levels and students' intention to use e-resources.

Table 5.33: Correlation Matrix for factors influencing behavioural intentions to use e-resources.

	ISB 1	ISB 2	ISB 3	ISB 4	ISB 5	ISB 6	ISB 7	ISB 8	ISB 9	ISB 10
ISB 1	1									
ISB 2	.889**	1								
ISB 3	.931**	.904**	1							
ISB 4	.925**	.910**	.947**	1						
ISB 5	.924**	.920**	.932**	.934**	1					
ISB 6	.934**	.911**	.942**	.959**	.926**	1				
ISB 7	.916**	.901**	.928**	.928**	.936**	.921**	1			
ISB 8	.921**	.918**	.947**	.975**	.941**	.958**	.927**	1		
ISB 9	.937**	.892**	.923**	.944**	.930**	.955**	.934**	.940**	1	
ISB 10	.905**	.916**	.948**	.937**	.929**	.939**	.932**	.942**	.913**	1

The correlation analysis in Table 5.33 examines the correlations relationships between examine the relationship between the factors predicting behavioral intentions (independent variables) and the intention to use e-resources (dependent variable). the contemporary and emerging marketing strategies (independent variables) and the dependent variable, which is students' utilisation of e-resources. In the Table the correlations between these variables shows a matrix of correlations, with the variables labeled as ISB1, ISB2, ISB3, up to ISB10. Each cell in the table represents the correlation coefficient between two variables. The correlation coefficient ranges from -1 to 1 and indicates the strength and direction of the relationship between two variables.

Looking at the results of correlations between the variables (ISB1-ISB10), it can be seen in Table 5.34 that the pairs of variables have highly positive correlations. For instance, the correlation between ISB1 and ISB1 (which is the correlation of ISB1 with itself) is 1, which indicate a perfect correlation. The correlation between ISB2 and ISB3 have a correlation of .934** (where ** indicates statistical significance), similarly, correlation between ISB4 and ISB5 is .947**. Similarly, all other results indicate strong positive correlations.

Based on the results, we can conclude that the correlations analysis to explores the correlations between the variable (ISB1 – ISB10) measuring influence on behavioral intention to use e-resources indicate strong and positive significant relationships. Now since the correlations are positively strong there is no need to conduct regression to determine the level of contributions of each of the variables to students' intention to use e-resources from the libraries. This indicate that structural equation model is feasible and thereby considered to examine the level of contributions of each variable to students utlisation of e-resources from the TU libraries. In this regard, Smart PLS analysis is conducted through structural equation modeling. Figure 5.2 illustrates the estimated variables and their relationships in the structural equation model amongst 33 examined, variables to demonstrate the statistical significance the relationships.
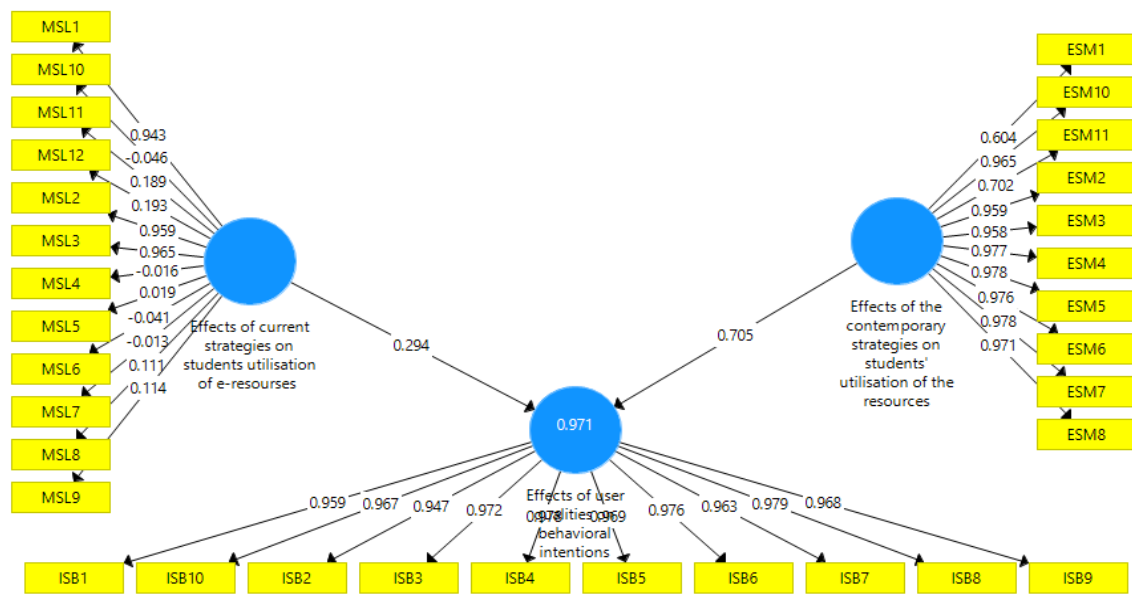
Figure 5.2 Constructs' relationships (Table 5.14, Table 5.22, and Table 5.31)

Based on the Smart PLS analysis conducted through structural equation modeling, Figure 5.2 illustrates the estimated variables and their relationships in the model. Out of the total 33 factors examined, 20 of them demonstrate statistical significance at or above the 0.05 level, as indicated by the correlations presented in Figure 5.2. Figure 5.2 illustrates the estimated variables and their relationships in the model shows the estimation of variables in according to structural equation modelling, in the Smart PLS pairs of relationships in the model significant influence is seen at

MSL10(0.943), MSL12(0.959), and MSL3(0.965). These findings showed that the structural linkages between posters and banners (MSL3), social media and web 2.0 tools (MSL10), and text messaging (MSL12) were substantial. This suggests that marketing e-resources through the placement of posters and banners in strategic locations within and outside of libraries, the use of social media and web 2.0 tools, and regular SMS messages sent to students will promote the resources among students to boost their usage of the e-resources from the libraries.

The Smart PLS analysis regarding the influence of contemporary and emerging strategies on the success of libraries' marketing initiatives reveals significant impact within the pairs of relationships in the model. Notably, considerable influence can be observed at ESM1 (0.604), EMS10 (0.965), and EMS11, as depicted in Figure 5.2, which is based on structural equation modeling (0.702). Additionally, EMS3 (0.958), EMS2 (0.959), EMS4 (0.978), and so on, demonstrate strong structural relationships. These results emphasize the importance of various variables (ESM1-EMS10) in shaping the success of marketing e-resources.

The findings suggest that implementing strategies such as social media marketing (ESM1), instant SMS messages (ESM11), URL links to relevant databases in student inboxes (ESM12), showcasing resources on institutional or library websites (ESM2), utilizing digital monitors or screens (ESM3), employing Web 2.0 technologies (ESM4), dedicated webpages for e-resources (ESM5), as well as providing video and audio tutorials, can significantly contribute to effective marketing of e-resources. By leveraging these strategies, libraries can enhance their marketing initiatives and effectively promote the usage of e-resources among students, ultimately leading to greater success in providing access to valuable resources and supporting students' needs.

In the Smart PLS pairs of relationships in the model on factors influencing behavioural intentions of students to use e-resources., considerable influence is found at all the components, according to structural equation modelling (ISB1 -1BS10). Take ISB1 (0.959), ISB10 (0.967), and ISB2 (0.947), for instance. These results demonstrated the strong structural connections between them.

This implies that there is a strong relationship between the factor levels and the way in which students intend to use e-resources. Through structural equation modeling in Smart PLS, the pairs of relationships in the model that influence the behavioral intentions of students to use e-resources have shown significant impact across all components. Notably, considerable influence can be observed in ISB1 (0.959), ISB10 (0.967), and ISB2 (0.947). These findings highlight the strong structural connections between these factors, indicating a robust relationship between the levels of these factors and students' intentions to utilize e-resources. In other words, the results suggest that the identified factors (ISB1, ISB10, and ISB2) play a vital role in shaping students' behavioral intentions towards e-resource usage. The strength of the relationships indicates that these factors have a substantial influence on determining how students intend to engage with e-resources.

Based on the Smart PLS analysis through structural equation modeling, the findings reveal significant relationships between various factors that influence students' behavioral intentions to use e-resources in university libraries.

The current marketing strategies that demonstrated substantial influence on students' e-resource usage intentions are social media and web 2.0 tools (MSL10), text messaging (MSL12), posters and banners (MSL3). Additionally, contemporary and emerging strategies that showed significant impact on the success of libraries' marketing initiatives are: social media marketing (ESM1); instant SMS messages (ESM10); URL links to relevant databases in student inboxes (ESM11); showcasing resources on institutional or library websites (ESM2); utilizing digital monitors or screens (ESM3); employing Web 2.0 technologies (ESM4); dedicated webpages for e-resources (ESM5); providing video and; audio tutorials (ESM12).

Furthermore, the factors that have a considerable influence on students' behavioral intentions to use e-resources are, Marketing of the resources (ISB1), Information retrieval skills (ISB10); Awareness of the resources (ISB2) Efficacy with technology in use (ISB3), Perceived ease of, access to resources (ISB4), Perceive quality/value of resources (ISB5), Support from library staff

(ISB6), Perceived quality of the IS system (ISB7), Perceived relevance of resources (ISB8), and Influence from peers and lecturers (ISB9). The findings emphasize the importance of effective marketing strategies and contemporary approaches in promoting e-resources among students. Social media, instant SMS messages, and innovative technologies play a crucial role in enhancing marketing initiatives and increasing e-resource usage. The analysis indicates that 10 factors (ISB1-ISB10 referenced in Fig 5.2) significantly influence students' behavioral intentions to utilize e-resources.

Strengthening these factors can positively impact students' engagement with e-resources in university libraries. Libraries can rely on the findings to tailor their marketing and promotion strategies, as well as focus on enhancing essential factors to better support students' needs and maximize the usage of valuable e-resources.

In addition to the quantitative findings on factors influencing the behavioral intentions of students to use e-resources, the study explored the perspectives of 21 library and information professionals regarding these influences to gain more insights from the field via interviews. These professionals, with their expertise and experience, provided valuable perspectives on the factors influencing students' behavior towards e-resource usage. The following discussion delves into their insights, shedding light on the various influences identified by these professionals. By incorporating qualitative perspectives alongside quantitative findings, a comprehensive understanding of the complex dynamics surrounding the utilization of e-resources among students emerges. This holistic approach facilitates a more nuanced and insightful analysis of the factors that shape students' behavior and engagement with e-resources in university libraries. The major themes that emerged during the interviews are enumerated in the following:

The accessibility and convenience of use of the e-resources played out as a significant factor in influencing student usage. Factors such as 24/7 availability, remote access, user-friendly interfaces, and quick search functionalities contribute to the perceived accessibility and convenience are the predominant themes. For instance, a participant noted that *"students need to be able to easily find*

and access the e-resources they need" (Participants 12). Also, a participant mentioned *"user-friendly interfaces, easy search functionalities, and clear labelling of e-resources are critical factors that influence the usage of e-resources by students."* (Participants 3, 7, and 10).

Furthermore, the provision of adequate infrastructure also emerged as a significant factor in influencing students' access and use of e-resources effectively. Library professionals interviewed highlighted the lack of adequate modern IT infrastructure to facilitate students access of the resources in their facilities. For instance, a participant mentioned *"provision of adequate infrastructure is critical factor that influences students' intentions toward e-resources usage."* (Participants 20). This includes having access to a reliable internet connection, computers, and other electronic devices.

Additionally, library professionals interviewed highlighted the importance of providing training and support to students on the use of e-resources. This can be achieved through online tutorials, workshops, and personalized training sessions. For instance, a participant mentioned that *"Students who are familiar with and comfortable with technology are more likely to use e-resources effectively"* (Participant 15). The relevance and quality of e-resources are also critical factors that influence students' behaviour towards usage. Library professionals interviewed emphasized the importance of ensuring that e-resources are up-to-date and of high quality to encourage students to use them. *"Students are more likely to use e-resources that are relevant to their studies and provide high-quality content." (*Participant 11).

Furthermore, factors such as intrinsic interest in technology, self-efficacy beliefs, and a positive attitude towards digital tools can impact students' willingness to explore and utilize e-resources. For instance, one participant stated, *"Individual motivation and attitudes toward technological resources, for instance, can affect usage''* (participant 21).

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The results suggest that the adoption and usage of e-resources by students can be influenced by several factors, including ease of access, availability of adequate infrastructure, familiarity and comfort with technology, relevance, and quality of content, and perceived value.

5.8 Competencies of library professionals in marketing e-resources to students

The study examined the competencies required of librarians to influence students to use electronic resources from the library. The purpose of the research questions was to elicit responses from survey participants who ranked a set of skills that library staff could require for successful marketing of e-resources to students. The study assessed the library staff's competencies on a Likert scale from ranked from 1 to 5, and described as 1: very low, 2: low, 3: average, 4: high, and 5: very high. The study's results on the competencies required of librarians to market e-resources to students are presented in Table 5.34 after data was gathered from the field and analyzed. The results after the data were gathered and analysed are presented in Table 5.34.

Table 5.34: Library staff competencies in marketing e-resources to students (N=706)

COMPETENCIES	Mean	Std. Dev.	Variance	Skewness	Std. Error
Academic/Professional	3.97	1.282	1.643	-.851	.092
Information Literacy skills	3.92	1.286	1.654	-.768	.092
Reference and Research	1.90	1.774	.728	1.167	.092
Tech and ICTs user skills	3.30	1.758	.574	.782	.092
Positive Attitudes towards users	3.93	1.797	.635	1.205	.092
Marketing/Promotion	3.80	1.795	.631	.704	.092
Communication & interpersonal skills	3.77	1.819	.671	.883	.092
Technical Knowledge of e-resources	3.75	1.900	.810	1.324	.092
Customer service skills	3.77	1.829	.687	1.046	.092
social media & Web 2.0 proficiency	3.81	1.254	1.573	-.512	.092

Source: Field work, 2022.

Table 5.34 depicts the results of the assessment of the competencies required of librarians to market e-resources to students. The competencies were ranked by the survey respondents on a Likert scale from 1 to 5. The results indicate that academic and professional competencies had a mean score of 3.97, indicating that the surveyed respondents perceived them as relatively high. The standard

deviation was 1.282, suggesting some variation in responses while the skewness value of -0.851 indicates a slightly negative skew, meaning that the responses were somewhat skewed towards higher values. Additionally, the results show that information and digital literacy skills had a mean score of 3.92, and this competency was also perceived as relatively high. The standard deviation was 1.286, indicating some variation in the responses. The skewness value of -0.768 suggests a slightly negative skew, like the previous competency.

Furthermore, the results also show that respondents rated social media and web 2.0 application skills highly with a mean score of 3.81, indicating a relatively high perception by the participants. The standard deviation was 1.254, suggesting some variability in the responses. The skewness value of -0.512 indicates a slight negative skew, meaning that the responses were somewhat skewed towards higher values. Likewise, Tech and ICTs user skills had a mean score of 3.30, indicating a lower perceived level compared to the previous competencies. The standard deviation was 1.758, suggesting a higher degree of variability in the responses. The positive skewness value of 0.782 indicates a slight skew towards higher values, but it is important to note that this competency had the highest standard deviation among all competencies.

The results further show positive attitudes towards users, with a mean score of 3.93, which is relatively high. The standard deviation was 1.797, suggesting some variability in the responses, with a positive skewness value of 1.205 indicating a skew towards higher values, meaning that the responses were somewhat positively skewed. Also, marketing and promotion scored a mean score of 3.80, indicating a relatively high assessment, with a standard deviation of 1.795, indicating some variability in the responses, and a positive skewness value of 0.704, suggesting a slight skew towards higher values.

Communication and interpersonal skills had a mean score of 3.77, indicating a relatively high perception by the participants. The standard deviation was 1.819, suggesting some variability in the responses. The positive skewness value of 0.883 indicates a slight skew towards higher values.

Technical knowledge of e-resources recorded a mean score of 3.75; this competency was perceived as relatively high. The standard deviation was 1.900, indicating some variability in the responses. The positive skewness value of 1.324 suggests a skew towards higher values. Customer service skills had a mean score of 3.77, indicating a relatively high perception among the participants. The standard deviation was 1.829, suggesting some variability in the responses. The positive skewness value of 1.046 indicates a slight skew towards higher values. In comparison to the other competencies, research and reference received the lowest mean score (1.90), indicating a lower perceived level. The standard deviation was 0.774, indicating that there was little variation in the answers. A skew toward higher values can be seen by looking at the positive skewness value of 1.167.

The results of the survey show that, except for reference and research abilities, which were seen as less important, student respondents generally agreed with the competencies list supplied for the evaluation of library employees who needed to promote e-resources for the benefit of students. These results emphasise the significance of a variety of skills in effectively marketing e-resources to students, and they offer helpful guidance for librarians and library staff on how to prioritise and acquire the skills required to engage and effectively promote electronic resources to the student population.

Given the survey results (referenced in Table 5.34) and given the study's aim of identifying the competencies of library professionals in marketing e-resources to students, it was determined that additional research, consisting of individual interviews with 21 library professionals, was required. A few key themes regarding their evaluation of the library professionals' abilities to market the e-resources from the libraries to students came out of the interviews with the 21 library and information professionals. In the paragraphs that follow, the results of the one-on-one interviews with librarians and information specialists are organised according to the key themes that emerged from the discussions with the 21 participants.

Participants predominantly underscored the need for *"proficient knowledge of the library's e-resources and their specific features, as well as knowledge of the needs and preferences of the student population"* (participant 13). Such knowledge assists the information professional to understand the features of the e-resource platforms, such as search interfaces and authentication methods.

Another emerged key theme is "creative and efficient use of modern digital technologies and ICT tools in the information provision of e-resources may influence the marketing of e-resources by library professionals at Ghana's TUs to increase students' acceptance and use of the resources. For instance, a participant stated, *"I notice that there is a high level of student exposure to smart phones and other computer devices; I also notice that such ICT devices enable the provision of e-resources, thus being competent in the usage of these tools will make the library professionals position themselves to provide resources."(participant 8).*

From The findings, it emerged that the participants predominantly underscored the need for *"familiarity with digital marketing techniques and platforms, such as social media, email campaigns, and website design, to reach different student segments and promote different types of e-resources was recognized as a needed skill."* (Participants 11 and 17). From the responses, it was deduced that the majority, of participants understood the relevance of the application of modern digital technologies and ICT tools in the information provision of e-resources to their students, but they did not have the experience of using such digital technology and media regarding provision of e-resources before.

Another important theme that emerged is "communication and interpersonal relationship skills and customer service." An interviewee, for example, indicated that *"the library professionals must have good customer service and interpersonal relationship management skills, which they have studied in school and learned on the job"* (Participant 21). This revelation suggests that interviewees recognised the importance of positive customer relationships couple with strong

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written and verbal communication skills needed to present the rightful information about e-resources to students and others. Strong interpersonal skills to effectively respond to questions and concerns about e-resources will help the library professional build and maintain relationships with students and other stakeholder groups to promote the library's e-resources. Another important skill predominantly recognized as required of a library professional is *"Knowledge of copyright and licensing laws related to e-resources is important, as that will help the professional provide resources in line with fair use, Creative Commons, and other copyright exemptions."* (Participant 3).

Another key theme that emerged from the interview results is *"marketing and promotional competencies."* According to the interview results, participants predominantly referred to the marketing and promotion competencies of library and information professionals, as they indicated that they had sufficient knowledge and competencies in marketing. For instance, a participant indicated that *"advocacy and promotion are key skills that information professionals should possess."* Another participant mentioned that *"marketing competency is critical to the success of information provision and that is why it is taught in the librarianship school; however, a lack of practise in libraries hinders librarians from possessing adequate knowledge of marketing concepts."* The results suggest that library professionals have gained some form of formal, subject-based training in marketing skills during their education, as well as in-service training on marketing skills, digital literacy, public relations, and customer relationship management. However, the lack of marketing courses in library school curricula may hinder librarians from possessing adequate knowledge of marketing concepts. Therefore, continuous professional development training in marketing skills, public relations skills, and customer relationship management skills is essential for librarians. These skills are crucial for ensuring successful marketing and the evolution of creative and efficient marketing techniques to increase students' use of e-resources in the libraries of TUs in Ghana.

Another key theme that emerged from the interview results is "traditional LIS skills, extended to the electronic environment." A participant indicated that "even though we now operate in the electronic era, library professionals must possess competencies to perform traditional library activities in an electronic environment." (Participant 17) Another participant mentioned *that "library professionals need to have adequate traditional LIS competencies extended to the electronic environment to provide e-resources to students effectively."* These competencies, according to participant 18, include *"managerial skills, selection dissemination, digital collection development, digital acquisition, conservation and preservation, digital preservation, and remote access user management."*

The results suggest that the library professionals need to engage in a continuous professional development (CPD) training to sharpen their skills in areas that position them to in marketing skills. The predominant views by the majority, of the participants of the study on the competency required of library staff towards the marketing of e-resources to students in TUs in Ghana indicate that the majority, of the participants converged on common reasoning. It was observed that the participants predominantly believed that for the libraries within the TUs to be successful improve students' patronage of e-resources there was the need for the library staff to possess some basic marketing skills including formal subject-based training in schools for library and information science students, in-service training on marketing skills for library staff, digital literacy skills, public relations (PR), and good customer relationship management skills.

Knowledge of the e-resources available through the library and their specific features and benefits understanding of the current trends and developments in e-resources and their impact on library services. Understanding the needs and preferences of the student population Strong communication and interpersonal skills are needed to effectively present information and respond to questions from students, staff, and faculty. familiarity with digital marketing techniques and platforms, such as social media, email campaigns, and website design. the ability to analyse and evaluate the

effectiveness of marketing efforts. Strong organisational and project management skills are needed to plan and implement marketing campaigns. Understanding the features and benefits of the library's electronic resources, including databases, e-books, and other digital resources familiarity with the library's e-resource platforms, such as search interfaces and authentication methods. knowledge of how e-resources can support the research and learning needs of students. The section that comes next presents the results on innovative strategies for marketing e-resources to students.

5.9 Innovative strategies for marketing e-resources to students

The sixth objective (1.5.6) of the study was to propose innovative strategies for marketing e-resources to increase their usage among students in technical universities in Ghana. In Chapter 1, Section 1.6.6, the research questions were formulated to explore such strategies, and a survey was conducted with 706 student respondents. The respondents were presented with a pre-listed set of strategies in Appendix A, Part VI, where they were asked to rate their effectiveness on a Likert scale of 1 to 5, where 1 represented very low effectiveness, 5 represented very high effectiveness, and 3 represented average effectiveness. Table 5.36 in the study presents the survey results, including the mean, standard deviation, skewness, and standard error values for each evaluated factor. The purpose of this analysis was to identify the most effective marketing strategies for promoting e-resource usage among students at technical universities in Ghana.

Table 5.35: Proposed strategies for marketing e-resources to students

	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Std. Error
Social Media and virtual platforms *(p1)*	4.29	1.571	.301	.092
Targeted Messaging and mails *(p2)*	4.16	1.549	.258	.092
Offer Incentives or Rewards *(p3)*	4.29	1.533	.269	.092
Visibility of resources on institutional website *(p4)*	4.62	1.523	.269	.092
Use Web 2.0 tools *(p5)*	4.63	1.530	.270	.092
Personalized Recommendations (p*6)*	3.58	1.534	.270	.092
robust exhibition of e-resources at events *(p7)*	3.57	1.524	.255	.092
Multiple communication channels *(p8)*	4.17	1.538	-.273	.092
Promote resources via campus radio *(p9)*	3.31	1.517	-.298	.092

Source: Field Data, 2022.

Table 5.35 presents the results on proposing innovative strategies for marketing e-resources to increase their usage among students in technical universities in Ghana. The results show that Visibility of Resources on Institutional Website (p4) had the highest mean score of 4.62, indicating a very high level of perceived effectiveness, and a standard deviation of 1.523, suggesting some variability in the responses, with a skewness value of 0.269 indicating a slight positive skew. Social media and virtual platforms (p1) received a mean score of 4.29, indicating a high level of perceived effectiveness, with a standard deviation of 1.571, suggesting some variation in the responses. The skewness value of 0.301 indicates a slight positive skew, suggesting that the responses were slightly skewed towards higher effectiveness ratings. The results show targeted messaging and e-mails (p2) had a mean score of 4.16, indicating a high level of perceived effectiveness, with a standard deviation of 1.549, which suggests some variability in the responses. The skewness value of 0.258 indicates a slight positive skew.

The results further indicate that offers of incentives or rewards (p3) received a mean score of 4.29, indicating a high level of perceived effectiveness, and a standard deviation of 1.533, suggesting some variation in the responses, with a skewness value of 0.269 indicating a slight positive skew. Also, Use Web 2.0 Tools (p5) recorded a mean score of 4.63, indicating a very high level of perceived effectiveness, with a standard deviation of 1.530, suggesting some variability in the responses, and a skewness value of 0.270, indicating a slight positive skew.

The rest of the results show personalised recommendations (p6) with a mean score of 3.58, a standard deviation of 1.534, and a skewness value of 0.270; robust exhibition of e-resources at events (p7) with a mean score of 3.57, a standard deviation of 1.524, and a skewness value of 0.255; and multiple communication channels (p8) with a mean score of 4.17, a standard deviation of 1.538, and a skewness value of -0.273; while marketing via the campus radio station (p9) received a mean score of 3.31, with a standard deviation of 1.517, and a skewness value of -0.298.

The findings suggest that several strategies can be effective in marketing e-resources to students at technical universities in Ghana. The findings further indicate that a multifaceted approach is crucial for marketing e-resources effectively to students in technical universities in Ghana. Institutions should consider leveraging social media and virtual platforms, targeting messaging, offering incentives and rewards, and optimising the visibility of resources on their website. By utilising these strategies, institutions can increase student engagement and utilisation of e-resources, thereby enhancing their overall learning experience.

To provide additional context and depth to the data and highlight important factors that may not have been captured through the survey on the issues related to proposing innovative approaches to marketing e-resources from TU libraries to influence optimal students' usage of the resources, 21 library and information professionals were interviewed one-on-one to gather their perspectives. The perspectives of the library professionals are incorporated to provide valuable insights and help validate the findings from the survey results. The findings were, to a large extent, consistent with the initial survey findings (as referenced in Table 5.30) regarding the study's proposed strategies for effective marketing of e-resources to students in Ghanaian TUs. The following salient themes emerged from the one-on-one interviews with the 21 library and information professionals:

5.9.1 Policy direction for the collection and management of e-resources.

It was profoundly gathered from the interviews with the library professionals the need for policy direction for the collection and management of e-resources. Tt was mostly observed from the responses that the libraries studied lacked collection development policies (CDPs). For example, an interviewee indicated that *"the library has no CDP to guide the* acquisition and *collection of e-resources."* (Participant 10). It was further discovered that six of the 10 libraries studied had no collection development policies to guide the acquisition of their general library collections, while four out of the 10 libraries indicated they had CDPs to guide the collection of only traditional or conventional library resources. Furthermore, it emerged from the data that only three (3) libraries

had some form of combined or hybrid CDPs that covered both conventional and electronic collections, while six of the libraries had no collection development policies at all. The results suggest that the majority, of the libraries in the TUs in Ghana do not acquire information resources under the guidance of collection development policies. Meanwhile, a collection development policy is highly relevant to the marketing of library e-resources. It forms a critical component of the marketing of library e-resources. By having a clear understanding of the types of e-resources being acquired, the library can more effectively promote these resources and increase student patronage. The results imply that TU libraries need collection development policies dedicated to the collection and management of electronic library resources.

5.9.2 Strategic marketing planning/written marketing plans.

It was further discovered during the analysis that the libraries in the TUs did not have written marketing plans for marketing their collections. it was against this backdrop that the interviewees dominantly recognised the need for the libraries to design and implement marketing plans to guide their marketing practices. For instance, one participant reckoned that *"relying on a marketing plan will guide effective marketing and promotional initiatives regarding e-resources in the TU libraries".* (Participant 20). Another participant mentioned that *" strategic marketing planning is not given serious attention and that he has forgotten the marketing principles he learned in school for lack of practice."*(Participant 16). An interviewee (17) mentioned *"our library has no marketing plan therefore there is the need to design written marketing plans to guide future marketing campaigns".* The findings suggest that the lack of written marketing plan is leading to failure by the libraries to provide any structured approach to marketing the library resources. The findings further suggest there is need for measures to tackle marketing with a strategic planning approach and that there is the need for data-driven decisions about future marketing efforts.

5.9.3 Marketing via Web 2.0 tools.

The findings further underscored the relevance of deploying various emerging and contemporary Web 2.0 tools for lunching marketing campaigns regarding e-resources to students. The majority (17) of interviewees predominantly recognised the potentials of Web 2.0 tools in marketing e-resources to boost students' usage of the resources. The participants predominantly mentioned the names of various Web 2.0 technologies (social media networking sites, wikis, blog pages, RSS feeds, podcasting, etc.). For instance, a participant indicated that *"The library was poised to adopt such Web 2.0 tools and other emerging technologies for providing and marketing e-resources to students, but with the required provision of IT infrastructure and technical assistance."* *(Participant 21).* In the view of another interviewee *" the library could tap on students' high use of smart devices and internet services to disseminate information on awareness creation and education."* (Participant 1)**.** Another interviewee further indicated *"The libraries may create demonstrative videos and audios and URL links promoting the use of e-resources." Such videos, audios, and links may be uploaded onto such platforms as the library webpage, the institutional website blog page, YouTube pages, and podcasting pages".* (Participant 11).

Dominantly mentioned among Web 2.0 tools was social media. For instance, an interviewee indicated *"Social media networks like WhatsApp, Facebook, Twitter, Pinterest, YouTube, TikTok, Instagram, Telegram, Snapchat, etc. are good examples of contemporary and emerging digital tools that libraries could leverage on to maintain online presence".* This revelation suggests that the library professionals are aware of the benefits of the various emerging ICT and digital tools even though they do not seem to take full advantage of them to market their resources to their users. One major reason for this could be lack of adequate IT infrastructure and the needed technical knowledge in deploying them to provide and market the e-resources. This therefore suggest that there is the need to provide the needed infrastructure and some training for the library staff. These revelations suggest that the interviewees believed that, when leveraged for the provision of e-resources, these ITC tools would boost students' interest in patronising the resources. These revelations above demonstrate the interviewee's recognition that students nowadays have access to smart devices and internet connectivity, which can be leveraged by the library to

disseminate information and increase awareness of their e-resources. The results further suggest that participants believed that the adoption of ICTs and digital technologies would significantly boost the marketing efforts of library and information professionals.

Additional themes that emerged from the interviewees' findings regarding innovative strategies for marketing e-resources to students at TU libraries are summarized in Table 5.36.

Table 5.36: Summary of innovative approaches for marketing e-resources.

Strategies	Summary of innovative approaches for marketing e-resources
1) Professional development and training of library staff	✓ *"Managements of the libraires should facilitate the provision of providing professional development and training for library staff on marketing strategies"* (Participant 10).
2) conventional methods of marketing library resources	✓ *"Conventional methods including the notices, signage, brochures, flyers, banners, newsletters, orientations, word of mouth engagements with students." (Participant 1).*
3) Information literacy (IL) skills and library instruction sessions for students	✓ *mandatory information literacy and library instruction sessions for all students can lead to successful marketing of e-resources to students by a library. They increased awareness, improve understanding, usage, and satisfaction, as well as encourage positive word-of-mouth promotion.*
4) User-friendly website for promoting e-resources	✓ *"Ensure that the library's website is user-friendly and provides easy access to all e-resources available, with clear instructions on how to use them." Mobile app: "Develop a mobile app that allows students to access e-resources on the go, making it more convenient for them to use the library's resources." (Participants 1, 3…)*
5) Image of quality service	✓ providing a welcoming library atmosphere, a clear representation of high-quality service at events where students may connect with library staff, and quick customer service are just a few examples. (Participants 13)
6) Leveraging Emerging technologies/new media	✓ *Web 2.0 tools (social media, wikis, library blogs, zoom conferencing, Microsoft Teams, RSS feeds)* ✓ *Social media handles (Facebook/Meta, WhatsApp, YouTube, Tick Tock, Pinterest, Twitter, Instagram, Telegram)* ✓ *virtual worlds, D-Space, and OPACs, an institutional repository* ✓ *The library website or page, faculty, institutional, and college websites to provide notifications, Using pre-designed templates.* ✓ *library mobile Apps on the Play Store or Apple Store for notifications, mobile library apps for updates,* ✓ *Listserv mailings, direct emails, and targeted SMS messages to students.* ✓ *Online tutorials and demonstrational videos via the various social media handles of the library*

7)	RM and promotional activities	✓ *Walk-in sessions, workshops, and word-of-mouth promotion and marketing* ✓ *Personal librarian programmes and research consultation* ✓ *Radio and TV programmes and talk shows on the university and community media spaces.* ✓ *Meet the Librarian events and library days.* ✓ *Library liaison programmes* ✓ *Heritage month events and library publicity events* ✓ *Students' library club's activities* ✓ *Freshmen and women events and students' orientation events* ✓ *Vendor provided promotional stuff.*
8)	Library displays and exhibitions activities for publicity	✓ *e-resources expositions, or exhibition at college, faculty, department, SRC /hall week celebrations and at other special events of students* ✓ *featured e-resources displayed at important gatherings and vantage locations to woo the attention of students.* ✓ *digital displays and signages within and around the library premises* ✓ *Bookmarks, billboards, banners, brochures, zines, newsletters, displaces in open show rooms, displays and demonstrations in the library website,*
9)	Incentives and giveaways marketing	✓ *Branded Mugs, pens, pencils designed with catchy phrases regarding e-resources,* ✓ *brochures and flyers, and handouts,* ✓ *branded T-Shirts* ✓ *branded flash drives, DVDs and CD-ROMS with some databases stored for giveaways to students.*
10)	Collaboration with academic departments, colleges, and faculties	✓ *collaboration with academic departments, colleges, and faculties is crucial for the successful marketing of e-resources to students by a library*. (Participants 16)
11)	Student surveys	✓ *"Conducting of surveys to gather feedback from students on what e-resources they would like to see added to the library's collection and how the library can improve its current offerings"*. (Participants 15…)

Source: Field Work, 2022.

The views shared by the interviewees as well as those from the quantitative results provide a comprehensive list of strategies for marketing e-resources to students. The results suggest that the libraries can adopt a combination of conventional and digital marketing tools and strategies for successful e-resources marketing campaigns. By adopting such strategies, libraries could improve students' access and usage of e-resources, thereby enhancing their academic experience. The following section provides a summary of Chapter 5 of the study, which presented the results of the empirical data analysis.

5.10 Summary of Chapter 5

The fourth chapter of this study presented the empirical data analysis results as well as an interpretation of those results to reach the desired conclusions. In Chapter 5, the empirical data collected through questionnaires, interviews, and secondary sources is analysed and interpreted to reach the conclusions of the study. The results were presented in line with the objectives of the study. The study's first objective found limited knowledge and familiarity with e-resources, leading to low usage due to various factors. The study second objective findings also revealed some inadequacies with the libraries' current ways of marketing e-resources as they mostly rely on few conventional approaches with little focus on contemporary and emerging approaches of marketing the resources. The findings of the study's third objective thus presented several contemporary approaches for marketing e-resources to students, while the fourth study's objective findings revealed several factors influencing the behavioural intentions of students to use e-resources. The fifth objective findings revealed the competencies needed by library professionals to market e-resources to students, while the sixth study objective found and innovative strategies for marketing to optimise students' use of e-resources. The results of the study are further discussed in Chapter 6.

CHAPTER 6:

INTERPRETATION AND DISCUSSION OF THE FINDINGS

6.1 Introduction

The previous chapter (5) was an empirical data analysis and presentation of the study's results and findings. The previous chapter presented an analysis of qualitative data collected from 19 senior university libraries and information professionals, as well as results from a document analysis, as well as quantitative data obtained from a questionnaire survey of 932 registered student users of TU libraries. This chapter presents the interpretation and discussion of the findings in accordance with the findings presented in Chapter 5. According to Hart (2018:15), the discussion and interpretation of research findings should be done separately from the section or chapter where the findings are presented so that readers can examine how the researcher made sense of the findings. The interpretations and discussions of the findings were presented in this chapter in accordance with the thematic areas of the study. The primary goal of this study was to investigate strategies for marketing electronic resources to students at Ghanaian TUs. The study had six (6) specific objectives, which were to:

1) Identify causes of students' low usage of e-resources in technical universities (TUs) libraries in Ghana.

2) examine the present status of marketing e-resources to students in Ghanian TUs

3) Explore contemporary and emerging marketing strategies required for influencing students' patronage of e-resources in the TUs' libraries.

4) Determine factors influencing the behavioural intentions of students to use e-resources.

5) determine the competencies of library professionals in marketing e-resources to students in TU libraries.

6) propose innovative marketing measures to influence optimal students' usage of e-resources in the TUs' libraries.

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A survey and interviews were used to gather quantitative and qualitative data, respectively. The findings from each of the objectives were presented, interpreted, and discussed. The interpretations and discussions for each of the objectives were situated within the context of the literature and theories discussed in Chapters 3 and 2, respectively. The chapter was then summarised.

6.2 Causes of low students' utilisation of e-resources from TU libraries.

The first study's objective (1.5.1) was to identify the causes of students' low utilisation of e-resources from TU libraries in Ghana. The focus was to determine factors that contribute to the phenomenon of low student usage of e-resources from the academic databases available at TU libraries from the perspectives of registered student users of the libraries and the library and information professionals working in these libraries.

The findings of the first study's objective (referenced in Section 5.4 of Chapter 5) revealed a combination of factors that contributed to low student utilization of resources from the libraries of TUs in Ghana. The quantitative findings (cited in Table 5.5 in Chapter 5) provide context regarding the causes of low student usage of the e-resources from academic databases at TU libraries in Ghana. By demonstrating significant differences in the means of the factors under investigation, the descriptive statistical data for the quantitative study results (Table 5.5) provided a preliminary indication of the factors that may have contributed to the low utilization of electronic resources by TU students from the library. The alternative hypothesis *(Ha1)* was supported by the results of the testing of the hypothesis, which showed a significant linear relationship or association between the factors (poor awareness and knowledge of how to use the databases, lack of marketing the resources, poor student searching abilities, poor library staff support for students, and poor computer availability in the library) and low student usage of electronic resources.

Further evidence of a statistically significant relationship between the levels of the indicated factors and low e-resource utilization came from the ANOVA test. Further quantitative data analysis

revealed a positive correlation between seven independent variables (poor database awareness and knowledge, lack of resource marketing, poor student search skills, poor library staff support for students, and poor computer availability in the library) and low student usage of electronic resources (shown in Table 5.8).

The Structural Equation Models (SEM) statistical technique was used because of the study's survey results, which showed a significantly different coefficient matrix (referenced in Table 5.9), which led to the discovery of the connections between the measures model and structural model as well as the relationships between the variables. This made it possible to evaluate the connections between each independent variable and the low levels of student e-resource usage. According to the SEM values, there were significant associations between five components from 0.528 to 0.875 (referenced in Fig. 5.1). The resulting significant variables are insufficient awareness and knowledge of how to use the databases, insufficient e-resource marketing, insufficient searching and navigational skills, insufficient staff support, and insufficient access to computer devices in the library. All these significant variables are significantly associated with low usage, as shown in Figure 5.1. Based on the comprehensive survey results, it is evident that several critical factors significantly contribute to the low usage of e-resources among students. These factors include insufficient awareness and knowledge of how to use databases, inadequate e-resource marketing, deficient searching and navigational skills, limited staff support, and inadequate access to computer devices within the library. These findings, supported by the empirical data presented in Table 5.5 and further validated through the insightful structural modelling relationships of the SMART PLS analyses illustrated in Figure 5.1, underscore the importance of addressing these issues to improve students' utilization of e-resources from the libraries.

Notably, the survey results in Table 5.5 align remarkably well with the qualitative data collected, substantiating the robustness and reliability of the study's conclusions. However, the qualitative

findings offer an additional layer of depth and richness to the understanding of the underlying challenges faced by students regarding e-resource usage.

The interviews conducted during the qualitative phase unearthed profound insights that shed light on the root causes of the identified issues. One significant revelation was the lack of user training due to the absence of library instruction in the core academic curricula of the schools. This deficiency leaves students ill-equipped to harness the full potential of available e-resources, resulting in suboptimal usage. A notable underlying theme in the qualitative findings was the lack of emphasis on e-resources within the academic curriculum. This dearth of attention prevents students from developing essential information literacy skills, which are essential for navigating digital resources effectively. Additionally, students' heavy reliance on their lecture notes as a primary source of information hinders their inclination to explore e-resources, limiting their exposure to the wealth of knowledge available through digital platforms. Moreover, the scarcity of specific e-resources tailored to fields or topics further diminishes students' motivation to utilise these resources in their academic pursuits.

The presence of alternative sources, especially Google, also poses a challenge, as students often opt for easy access to ready-made information, leading to the detrimental habit of copying without discernment. This trend directly impacts their information literacy skills, which are crucial for discerning credible sources and effectively utilising e-resources. Furthermore, the findings from the interviews revealed that lecturers' distribution of materials, such as lecture notes and handouts, often contained the necessary information for students' assignments. This situation inadvertently diminishes the perceived need to explore e-resources, perpetuating the cycle of underutilization.

Compatibility issues with some databases emerged as another obstacle faced by students, preventing them from accessing the information on their preferred platforms or devices. Such technical limitations hinder the seamless integration of e-resources into their academic routine. Time constraints, arising from other academic and personal commitments, were identified as a

critical factor affecting students' ability to access e-resources adequately. Insufficient time for in-depth research and accessing all necessary materials curtails the extent to which students can benefit from the resources available.

The results show that there were several reasons at play in the students' poor use of e-resources from TU libraries in Ghana. When considering Ghana's status as a developing country, the results are particularly noteworthy. The results are in line with reports from earlier research (Tetteh, 2018:316; Yebowaa & Plockey, 2018; Dukper et al., 2018) on other tertiary institutions in Ghana, where limited student utilisation of library resources and services was linked to comparable factors. For instance, Yebowaah's (2018:6) investigation into the awareness and use of electronic resources in university libraries at the University for Development Studies Library in Tamale, Ghana, discovered that despite the university's significant investment in the subscription to the e-resources database, approximately 67.5 percent of students did not use the e-resources. The findings further show that the factors contributing to students' limited use of the library's resources and services were connected to factors found in research from other parts of Africa and not particular to Ghana, especially when compared to those of other African experts. Several studies (Ternenge & Kashimana, 2019; Hindwa et al., 2019; and Iqbal et al., 2021) reported difficulties faced by students, including restricted access, and have uncovered evidence across Africa, demonstrating that the phenomenon is only unique to the developing world.

The study's comprehensive survey results, buttressed by the qualitative data, elucidate the multifaceted challenges contributing to students' low e-resource usage. To enhance students' engagement with e-resources in libraries, educational institutions must address issues related to awareness, knowledge, and marketing of e-resources. Equipping students with proper training and emphasising information literacy skills within the curriculum is crucial to fostering a generation of adept users who can capitalise on the vast potential of e-resources in their academic endeavors. Additionally, addressing technical compatibility and time constraints will ensure seamless access

and utilisation of e-resources, empowering students to excel in their research and academic pursuits.

The research reveals that low student utilisation of e-resources in TU libraries in Ghana is due to factors such as insufficient awareness, marketing, a lack of searching and navigation skills, staff assistance, computer availability, and less motivation. Addressing these issues through targeted interventions can improve students' access and utilisation of e-resources, enhancing their learning experience and academic outcomes. Libraries can promote information literacy, enhance database awareness, provide staff assistance, ensure computer availability, and improve internet connectivity. Structural equation modelling using PLS can guide institutions in developing effective strategies to overcome barriers and improve student engagement with e-resources.

Discussions and interpretations of the study's findings regarding certain findings are included in the subsections that follow. These additional insights further provide a critical window into the factors that contribute to students' poor e-resource usage at TU libraries. The subsection 6.2.1 that comes next presents discussion of the findings on students' usage of databases at libraries to access and/or utilise electronic resources.

6.2.1 Students' access to and/or use of e-resources from libraries' databases.

The research findings shed light on students' access to and utilisation of electronic resources from databases at TU libraries, uncovering underlying issues that hinder their usage. These results confirm the challenges faced by students in accessing and using these resources, ultimately leading to low utilisation rates. The quantitative data in subsection 5.4.1, as shown in Table 5.9, shed light on the extent of students' engagement with various electronic resources. Surprisingly, the utilisation of academic databases, online e-journal articles, and e-reference databases—crucial resources for scholarly research and learning—was found to be low.

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The findings of the present study align with the conclusions drawn by earlier researchers (Abiodun-Asanre, 2023:36; Frempong-Kore & Samuel, 2023; Joshua & King, 2020:47), who observed problems related to the access of electronic resources, such as difficulties downloading content and intermittent internet connectivity. Poor internet connectivity and difficulties downloading information are among the issues that Frempong-Kore and Ameyaw's (2023) investigation reveals. Furthermore, the research conducted by Eze et al. (2018:1) shows that barriers to successful adoption of electronic resources include user attitudes, inadequate internet infrastructure, and inadequate training. In terms of accessibility and e-resource utilisation, these results clearly show that African universities—including Ghanaian universities—do not operate on the same footing as their counterparts in developed information societies. This further implies that the problems that patrons are facing might need to be quickly resolved by library administration. The findings underscore the significance of tackling concerns associated with database accessibility and internet connectivity to augment the user experience in its entirety.

The study's conclusions also show that there are significant differences between students' access to and use of different resources. Students were found to have widespread access to and heavy use of material that was copied from the open internet, text that was sourced from Google, and multimedia files that were downloaded from YouTube. Reports by researchers (Chandra, 2021:16; Baayel & Asante, 2019:136) highlight the fact that a lot of students use Google search engines to obtain e-resources, which raises questions regarding the reliability of the materials they come across.

In this regard, the study reveals a notable discrepancy between the use of openly accessible online resources and the underutilization of crucial academic resources that are made available by the library. This discrepancy emphasises how crucial it is for libraries to raise awareness and put into practise efficient marketing techniques to close this gap. The results highlight the necessity of

educational activities meant to raise students' knowledge of trustworthy and legitimate online sources.

The study also highlights the dynamic nature of student preferences and the significance of resolving issues related to the use of electronic resources in educational settings, drawing attention to the changing landscape of information access. All things considered, these observations highlight how complex information access is in today's classrooms and how proactive approaches must be adjusted to meet changing student requirements.

The study's qualitative data supported and enhanced the quantitative conclusions, demonstrating a consistent trend of students using the library's e-resources rarely, especially for academic and scholarly research. Consistent findings from earlier research in the Ghanaian setting are in line with this, including works by Okyere-Kwakye and Nor (2020:69) and other authors like Acheampong et al. (2019:30), Dukper et al. (2018:1), Yebowaah, and Plockey (2018). The little adoption of e-resources at Ghanaian colleges was a consistent finding across all this research.

The overall underutilization of e-resources within academic institutions, especially among students, can be attributed to several factors. These include inadequate marketing efforts, a lack of awareness among the student body, and the absence of necessary skills to access and effectively utilise these valuable resources. These findings emphasise the immediate need for targeted interventions to address these challenges and improve the integration of e-resources into the academic landscape, thereby enhancing research and learning outcomes.

Considering these research findings, there is an urgent call for libraries at Ghanaian technical universities to reassess their awareness-creation and marketing strategies and policies. To bridge the utilisation gap, libraries must actively promote and increase awareness of their extensive collection of academic databases, e-journal articles, e-reference materials, institutional repositories, image collections, CD-ROM/DVD-ROM-based resources, e-theses and project

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works, e-magazines and newspapers, and e-books. Such proactive measures aim to generate greater interest and engagement among students, maximising their utilisation of these valuable resources for academic growth and research endeavors.

Moreover, it is crucial to delve into the reasons behind students' underutilization of electronic resources. This may involve exploring barriers such as lack of awareness, unfamiliarity with access procedures, or perceptions of inadequate content relevance. Identifying and addressing these challenges will be pivotal in enhancing students' utilisation of library e-resources and fostering a culture of comprehensive academic exploration.

In conclusion, the research findings highlight a significant gap in the access and usage of e-resources by students at Ghanaian technical universities. While readily available internet sources are widely tapped, critical scholarly resources within the library remain underutilized. The implications of these findings necessitate a revitalization of libraries' marketing and promotional strategies, coupled with a thorough investigation of the barriers hindering students' engagement with e-resources. Through proactive measures to enhance awareness and user-friendliness, libraries can play a pivotal role in transforming students into informed and proficient users of valuable academic materials, thereby promoting a culture of scholarly excellence.

6.2.2 Students' awareness and familiarity with the libraries' academic databases

The research findings on students' awareness of and familiarity with academic databases accessible at TU libraries emphasise the different knowledge levels among students, as indicated in Table 5.10. (Subsection 5.4.2). The results provide intriguing insights into the students' knowledge of different databases. While popular search engines like "Google Search," "Wikipedia Database," and "Google Scholar" are well-known among students, subscribed databases from the consortium of academic and research libraries in Ghana (CHARLIGH) and other renowned open-access databases related to subject disciplines within the TUs are not as familiar. This discrepancy

emphasises the importance of implementing information literacy and library instruction programmes to educate and raise awareness among students about these valuable academic databases. Interestingly, the survey findings indicate that students are more familiar with resources from open-access databases, such as Google Search and Google Scholar, compared to those from subscribed databases. These findings align with earlier studies conducted by researchers (Okyere-Kwakye & Nor, 2020; Yebowaah and Plockey, 2018; Dukper et al., 2018; Baayel & Asante, 2020; Bawa et al., 2018), which also reported low utilisation of e-resources in Ghanaian tertiary institutions. These studies have linked this phenomenon to various reasons, including a lack of awareness among students about the availability of these resources. For instance, Dukper, et al., (2018) found that a significant percentage of students were unaware of electronic resources, and Moyo (2017) discovered that despite efforts to increase user awareness, a substantial number of students remained ignorant of the resources' existence at UNISA. Moreover, the study's findings imply that awareness alone may not be the sole determining factor for the underutilization of e-resources by students, as suggested by the contradictory results from other researchers' studies (Frempong-Kore & Samuel, 2023; Amoo, 2018; Acheampong et al., 2020; Ankamah & Gyesi, 2022). Additional underlying causes might contribute to students' lack of engagement with library e-resources. The qualitative data collected from library professionals highlights the need for targeted guidance to help students navigate and access databases that align with their academic disciplines. Providing personalised support can significantly improve students' utilisation of e-resources, enabling them to harness the full potential of the library's scholarly collection. Several studies cited in the literature further support the prevalent issue of students' inadequate awareness of library resources in Ghana and other higher institutions. For instance, Baayel and Asante's (2019) study on first-year students at Koforidua Technical University revealed very low awareness about the availability of academic electronic resources and databases. Yebowaah and Plockey's (2018) study on faculty use of e-resources at the University for Development Studies, Ghana, found a high level of user awareness but low levels of resource utilisation. In conclusion, the research

findings regarding students' awareness and familiarity with libraries' academic databases highlight the varying levels of knowledge among students. While widely accessible open-access resources are well known, important subscribed databases remain less familiar. To address this issue, implementing information literacy and library instruction programmes is essential. Additionally, it is crucial to recognise that other factors beyond awareness alone may influence students' underutilization of e-resources. Collaborative efforts from stakeholders are necessary to ensure students' awareness and effective utilisation of these valuable resources, ultimately enriching their academic journey and research pursuits.

6.2.3 Sources students consult for e-resources.

The study's results, presented in Table 5.11 (Subsection 5.4.9), offer valuable insights into the sources commonly used by students to seek e-resources. The data revealed that Google search is the most widely used source, followed by YouTube and the Wikipedia online encyclopedia. These findings highlight the dominant role of general search engines and popular online platforms in students' quest for e-resources. On the other hand, the study found that the use of e-journals and open-access databases is relatively low among students. Google Scholar and academic databases were identified as the least utilised sources for seeking e-resources. Additionally, subject gateways and CD- or DVD-based e-books were also found to be relatively underutilised. The results underscore the heavy reliance of students on general search engines like Google when searching for e-resources, while specialised databases and subject gateways are infrequently accessed. This preference for general search engines may be attributed to their familiarity and ease of use, making them the go-to option for quick information retrieval.

Notably, the study revealed that students demonstrated limited familiarity with subscribed e-journals and academic databases available in Ghanaian technical university libraries. This lack of awareness may result in students missing out on valuable scholarly resources and research materials essential for their academic growth. Furthermore, the findings indicated that students

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perceived Google, YouTube, and Wikipedia as more trustworthy sources of e-resources. This perception might be influenced by the widespread popularity and accessibility of these platforms, leading students to rely on them without considering their potential limitations in terms of academic credibility. Enhancing the awareness and familiarity of students with subscribed e-journals, academic databases, and specialised resources is crucial. Academic institutions and libraries can play a pivotal role in promoting and educating students about the rich collection of resources available to them. Implementing information literacy programmes that demonstrate the value and reliability of scholarly databases will encourage students to explore these specialised sources for their research needs. Additionally, raising awareness about the credibility of subject gateways and academic databases will help students make informed decisions when seeking e-resources. By showcasing the benefits of using trustworthy and reputable sources, educational institutions can instil critical thinking skills and research integrity among students.

In conclusion, the study's results illuminate the prevalent usage patterns of students when seeking e-resources. While general search engines like Google dominate, specialised databases and academic resources receive limited attention. By addressing this imbalance through targeted awareness campaigns and information literacy initiatives, academic institutions can empower students to access a broader range of reliable and scholarly e-resources, enriching their learning experience and promoting academic excellence.

6.2.4 Purpose for which students patronised e-resources from the libraries' databases.

The study's findings, as presented in Table 5.12 (Subsection 5.4.3 of Chapter 5), shed light on the purpose for which students patronise e-resources from the libraries, highlighting the predominant motivation behind their usage. The primary purpose for which students access the library's electronic resources is to complete assignments. This finding underscores the significance of assignments as a driving factor for students when utilising e-resources. It reflects the practical relevance of these resources in supporting their academic requirements and deadlines. However,

the results also reveal that beyond assignment completion, there is little motivation among students to prioritise e-resources as strategic tools for achieving broader academic success. The data suggests a relatively low level of importance attributed to other purposes, such as research, exam preparation, recreational reading, preparing lecture notes, personal discoveries, collaborative studies research, and citation and referencing.

To link the current findings with early research, Kwafoa, Barfi, and Agyapong's (2019:9) study, which determined the use of electronic resources by postgraduate students at the University of Cape Coast, reported that the purpose for which students used the electronic resources was to complete their assignments, write project work, update lesson notes, conduct research, and update themselves on new information in their fields of study.

The study's findings bring to light more insights that offer a crucial glimpse into the motivations and priorities of students regarding their usage of electronic resources in the library. While completing assignments is a key driver, other academic activities seem to be perceived with less significance. This finding can prompt academic institutions and libraries to explore ways to encourage students to engage more comprehensively with e-resources for research, exam preparation, and other educational pursuits. The significance of the study's findings thus lies in their potential to guide strategic efforts in optimising students' utilisation of library e-resources. By understanding students' preferences and priorities, educational institutions can develop targeted interventions and support systems to enhance their awareness and use of e-resources for a broader range of academic purposes. From the findings, one can see the need for improvement in encouraging students to view e-resources as valuable tools for research, exam preparation, and other academic activities. By addressing this aspect, institutions can empower students to harness the full potential of e-resources, contributing to their overall academic achievement and learning experience.

6.2.5 Information/digital literacy and searching skills of students.

The study investigated students' information literacy and digital literacy skills in relation to their use of academic databases at TUs in Ghana, as presented in Table 5.13 (Subsection 5.10 of the chapter). The findings indicate that, while students have average computer and digital skills, they lack the necessary searching and navigation techniques to effectively utilise e-resources. Their limited knowledge of formulating search terms, evaluating relevant sources, and using advanced searching tools calls for training and support to improve their information literacy skills and enhance their utilisation of e-resources. Their proficiency in combining special characters and using Boolean logic operators for precise database searches was notably low, hindering their ability to access valuable scholarly materials and limiting the quality of their academic research and learning experiences.

This aligns with existing literature on the subject within the Ghanaian context. For instance, Kwafoa, Barfi, and Agyapong (2019) found that poor information literacy skills among post-graduate students at the University of Cape Coast resulted in low access to and usage of e-resources. Other researchers (Israel & Nsibirwa, 2018; Horsfall, 2020; Adeniran & Onuoha, 2018; Abdullahi, 2021) have also reported a strong relationship between the use of e-resources and the level of users' information literacy skills. In Uganda, low levels of information literacy skills were found to be the leading cause of low accessibility and utilisation of e-resources in higher education institutions (Abdullahi, 2021). In a similar vein, Adeniran and Onuoha (2018) found that postgraduate students' use of electronic resources in private university libraries in the southwest of Nigeria is more heavily influenced by their information literacy skills, which in turn leads to an underutilization of information resources. Additionally, according to Omoefe and Echedom, university students' digital literacy skills have a beneficial impact on how often they use electronic resources and library databases in Nigeria (2021).

To address these challenges, it is essential to close the digital divide and invest in information literacy training and ICT facilities. Oseghale's (2023) findings emphasise the importance of users' proficiency in digital information literacy, access to the internet, training, support, consistent database subscriptions, and the availability of local content in databases housing e-resources. Establishing a system that ensures long-term access and provides adequate local content from subscribed digital sources is crucial to empowering scholars and students to effectively utilise e-resources.

The study's results underscore the significance of comprehensive information literacy programmes in educational institutions. Equipping students with the necessary skills through training and workshops will enhance their ability to conduct effective searches, critically evaluate information sources, and use advanced searching tools. By improving students' information literacy skills, they can access a broader range of scholarly resources and achieve better research and learning outcomes. The study findings further highlight that the digital literacy and searching challenges faced by students in utilising academic databases are significant. While their computer and digital skills are average, their lack of essential information literacy skills hampers their effective use of e-resources. Implementing targeted training and support will empower students to enhance their searching capabilities and make more fruitful use of available resources, ultimately enriching their academic pursuits at TUs in Ghana.

Based on the comprehensive findings from the first study's objective, it is evident that multiple interconnected variables contribute to students' limited utilisation of e-resources available from TU libraries. Among these factors are students' poor searching abilities, insufficient marketing leading to a lack of adequate awareness and understanding of how to use databases, insufficient support from library employees, and a scarcity of computers within the library. Additionally, time constraints, lack of motivation, unfamiliarity with subject-specific databases, and limited access to

technology, particularly for students from lower socioeconomic backgrounds, were identified as contributing factors to the low usage of e-resources.

These findings underscore the need for greater awareness and education on specialised databases and subject gateways for students at Ghanaian technical universities. By improving access to e-resources and fostering critical evaluation skills among students, academic libraries and educational institutions can elevate the quality of academic work and research. To address these challenges, it is imperative to incorporate e-resource training and instruction into the curriculum and provide information literacy education and training. Promoting the value and benefits of e-resources to students, ensuring access to technology, and enhancing the quality and reliability of the internet connection are also crucial steps to increase students' awareness and utilisation of e-resources, leading to improved academic performance and research output.

The study's findings highlight the importance of marketing and promoting the use of electronic resources and addressing the various factors that contribute to low utilisation in a comprehensive manner. These findings can serve as valuable insights to develop strategies and interventions aimed at increasing students' awareness and utilisation of e-resources available in TU libraries in Ghana, thereby supporting their academic and research endeavors.

The following section delves into an interpretation and discussion of the findings from the third study objective, which investigates the current strategies employed by libraries to raise students' awareness of e-resources. Building on the insights gained from the previous sections, this discussion will further shed light on the efforts made by libraries to bridge the awareness gap and enhance students' engagement with valuable e-resources. By analysing the strategies in place and their effectiveness, this study aims to provide actionable recommendations to further improve students' access to and utilisation of e-resources in the academic setting.

The section that follows presents the discussions and interpretation of the findings of the second study objective, which investigated existing strategies employed for marketing e-resources at TU libraries.

6.3 Current strategies employed for marketing e-resources to students.

The second study's objective (1.5.2) was to establish the strategies currently employed by TU libraries to market available e-resources to students, with the aim of determining more effective marketing techniques. The findings in Section 5.5 of Chapter 5 revealed that TU libraries primarily rely on conventional marketing methods to promote e-resources among students. The most used methods (referenced in Table 5.14 in subsection 5.5.1) are brochures, flyers, notices, signage in libraries, posters, banners, and orientation talks. These traditional methods are well-known to students and have been widely used by libraries to promote e-resources. However, the use of more modern strategies, such as social media, email marketing, and text messaging, is relatively low and perceived to be less effective. Additionally, certain marketing methods, including user manuals, campus bulletin boards, and library newsletters, are perceived as less positive or less effectively used by the libraries to promote the resources to students, indicating weaknesses in the current marketing approaches. The data analysis and discussion on the current marketing strategies used by TU libraries provide valuable insights into the effectiveness of these methods.

The study's regression analysis and ANOVA results (as referenced in Table 5.17 and Table 5.18) show significant relationships between the current marketing methods and low student usage of e-resources. Only a few marketing methods have a positive impact on students' e-resource utilisation, emphasising the need for TU libraries to explore more effective and modern marketing strategies to increase awareness and encourage students to use e-resources. The survey results on how students learned about e-resources they had previously used (as referenced in Table 5.17 in subsection 5.5.2) reveal that being directed by lecturers and informed by colleagues were the most effective methods, highlighting the significant role played by faculty and peers in raising awareness

among students about available resources. This suggests that the current marketing methods employed by libraries may be lacking in their effectiveness in influencing students.

The study's results align with previous research (Mohammed & Ibrahim, 2021; Agyei & Ngulube, 2022) in Ghanaian university libraries, which often rely on traditional marketing approaches like orientation for new students. The findings are consistent with other studies that highlight the use of user manuals, notices, and signage as popular marketing strategies. Similarly, a study (Abdelrazig, 2018) in Sudan on academic institutions found that libraries primarily rely on traditional marketing approaches, with little attention paid to new media technologies as a tool for marketing.

The study's findings resonate with earlier results indicating that the present marketing techniques used by libraries within the Ghanaian context are insufficient in generating the desired awareness and encouraging students to utilise e-resources. Similar findings were reported by Mohammed and Ibrahim (2021:1), who investigated ways to promote library service usage in Ghanaian technical universities. The study revealed that more than 75 percent of respondents followed traditional strategies, such as presentations and tours during orientations, to introduce students to the library's resources. In a similar vein, Agyei and Ngulube (2022:16) found that none of the analysed libraries had dedicated marketing departments or allocated budgets for marketing plans, relying instead on informal marketing strategies.

It is suspected that many African university libraries had electronic information resources (EIRs) available, but most failed to implement effective marketing strategies to inform users about the benefits of these resources and services (Mohammed and Ibrahim, 2021). This lack of marketing resulted in low usage of the libraries' resources. Similar findings from Abdelrazig's (2018) research at the University of Gezira library in Sudan found that marketing practises were limited, despite the library's provision of information resources and services. The study's findings emphasise the importance of integrating contemporary and emerging digital technologies into marketing

strategies to enhance students' engagement and utilisation of e-resources. Modern marketing techniques, such as leveraging social media platforms, hosting electronic resource fairs, and creating electronic resource guides, offer ample opportunities to increase awareness of e-resources among students.

The lack of marketing effectiveness observed in this study is not isolated; it aligns with similar findings in the existing literature. Other studies in African universities also highlight the need for effective marketing strategies to promote library resources and services, including digital and social media strategies. Following the study's findings, TU libraries may need to enhance their existing approaches by adopting more effective marketing techniques in line with contemporary trends. Considering this, Olorunfemi and Ipadeola's (2018) research suggests various marketing strategies for libraries and information services, such as developing a welcoming attitude among staff members, organising exhibitions and displays of new arrivals, utilising web 2.0-based tools, and planning user education. The findings of the study, therefore, have implications for TU libraries. Based on the data shown in Section 4.5 of the preceding Chapter 4, it is evident that TU libraries in Ghana may require the adoption of a multi-faceted marketing approach. While traditional methods have shown some success, libraries must complement these strategies with more modern and digital techniques to reach a wider audience. Emphasizing faculty and peer influence can also play a vital role in promoting e-resources among students.

Furthermore, the study's second objective results raise interesting questions for further research, including the need for investigating the reasons behind the low utilisation of certain marketing methods and understanding students' preferences and expectations from library promotions, which can provide valuable insights for developing targeted marketing strategies. Taking a cursory look, the study's second objective finding underscores the importance of effective marketing techniques in promoting e-resources to students in TU libraries in Ghana. The results highlight the need for a balanced approach that incorporates both traditional and modern marketing strategies. By addressing students' digital literacy challenges and understanding their awareness sources, libraries

can enhance students' utilisation of e-resources and improve their overall academic experience. The section that comes next presents the interpretation and discussion of the results for contemporary and emerging strategies for marketing e-resources to students.

6.4 Contemporary and emerging strategies for marketing e-resources to students

The third objective of the study (1.5.3) aimed to explore contemporary and emerging approaches for effectively marketing e-resources to students within TU libraries in Ghana. Embracing modern and cutting-edge techniques for e-resource marketing holds the potential to enhance student utilisation of the resources offered by TU libraries in Ghana.

The findings derived from the quantitative data analysis (as detailed in Section 5.6, Chapter 5) unveiled dominant contemporary and emerging strategies and tools. These strategies, when implemented, can successfully promote e-resources to students, thereby increasing awareness, engagement, and usage.

The research employed a Likert scale spanning from 1 to 5 to gauge the perceived effectiveness of diverse contemporary and emerging marketing approaches for e-resources. The survey outcomes, showcased in Table 4.21 of Section 4.6 in Chapter 4, unveiled certain strategies that garnered highly positive acceptance, featuring mean ratings ranging from 4.40 to 3.86. This indicates that respondents viewed these strategies as considerably effective in marketing e-resources to students. Notably, strategies such as social media marketing, instant SMS messages, URL links, institutional website projection, video and audio tutorials, and Web 2.0 technology-based marketing received the highest mean ratings, signifying their potential as robust tools for effective promotion.

Furthermore, the study identified other Web 2.0 strategies that, while not achieving the same high ratings as the first set, were still perceived as effective marketing approaches. These strategies encompassed dedicated e-resource webpages, video and audio tutorials, blogging and podcasting, wikis and RSS feeds, and direct updates via student mailing lists. These strategies garnered mean

ratings ranging from 3.79 to 3.82, reflecting a moderate level of perceived effectiveness. The study's robust reliability and internal consistency were affirmed through the Cronbach's alpha internal consistency test (Table 5.22), showcasing a high coefficient of 0.978. This coefficient highlights the internal consistency and reliability of data pertaining to contemporary and emerging marketing strategies for e-resources, bolstering the credibility and validity of the data assessment.

Hypothesis testing was employed to examine the correlation between modern marketing strategies (independent variables) and the successful marketing of e-resources to students (dependent variables). The results from the one-way ANOVA test (Table 5.23) demonstrated a significant relationship between the adoption of contemporary strategies by libraries and the effectiveness of marketing e-resources to TU students. Rejecting the null hypothesis (Ho2) in favour of the alternative hypothesis (Ha2) confirmed the statistically significant impact of contemporary and emerging marketing strategies on successful e-resource promotion for students. The correlation matrix analysis (Table 5.24) further elucidated the strong positive correlations between various marketing methods, indicating the potential mutual reinforcement of multiple strategies in effectively promoting e-resources.

In summary, the quantitative findings from the third study objective underscore the importance of contemporary and emerging marketing strategies, with a specific focus on social media marketing and instant SMS messages, in promoting e-resources effectively to students within TU libraries in Ghana. These insights offer valuable guidance for libraries aiming to bolster their marketing efforts and enhance students' engagement with e-resources. The robust reliability and internal consistency of the study's results enhance the credibility of the findings and endorse the future application of these measures in assessing e-resource marketing strategies.

The interview findings aligned closely with the survey results, highlighting various contemporary and emerging methods and tools. These findings echo the survey outcomes and present promising avenues for TU libraries to augment their marketing strategies and foster student interaction with

their resources. These insights align with earlier research findings, emphasising the significance of employing cutting-edge technologies in library resource promotion. By embracing modern strategies, libraries can ensure optimal utilisation of their resources and services.

In their initial findings, Ansah, Oppong, and Kwame (2023:19) and Cheng et al. (2020) highlighted that the emergence of the latest technologies, including Web 2.0 and mobile services, has ushered in innovative avenues for conducting marketing in a more efficient and cost-effective manner. It is imperative that libraries fully embrace these cutting-edge technologies to comprehensively promote their resources and services to all stakeholders. To ensure optimal utilisation of library resources, funding agencies should proactively devise guidelines for marketing these invaluable assets. Frazer-Arnott (2023:337) asserted that libraries have the capacity to adopt novel promotional strategies, spanning both print and digital formats of books and journals, to ensure that each piece of content finds its reader in this new era. Highlighting the significance of modern innovations for the promotion and use of library resources, Jesubright and Saravanan (2019) argued for innovations in the design and marketing of information services, and Jones and Harvey (2019) suggested implementing Library 2.0, emphasising social media as a powerful marketing tool for libraries in academic institutions. To meet changing user requirements and ensure optimal resource use, librarians must adapt by developing their abilities, attitudes, and skills, as highlighted by Hamad et al. (2018:438). The following subsection delves into a comprehensive discussion of the marketing potential offered by Web 2.0 technologies and tools.

6.4.1 Marketing e-resources using Web 2.0 technologies.

The study's findings illuminate the potential effectiveness and feasibility of utilising Web 2.0 tools to market electronic resources to students. Within this context, various Web 2.0 tools emerge as viable options for integration into TU libraries' marketing strategies, with the potential to kindle students' interest and foster their exploration of library resources.

An analysis of the survey data, detailed in Chapter 4.6, Table 4.29, showcases the descriptive statistics concerning the viability ratings of diverse Web 2.0 technologies in marketing e-resources to students. The findings reveal that social media networking sites stand out as the most widely accepted Web 2.0 tool for promoting e-resources to students. Other tools, such as virtual instant messaging platforms, wikis, and Google Meet and Classroom, are perceived as moderately effective in enhancing e-resource visibility. These results signify that these Web 2.0 technologies hold promise for bolstering e-resource marketing. Respondents exhibit favourable inclinations toward these tools, implying that students might find them valuable for accessing e-resources. The findings underscore the potential role of Web 2.0 tools in driving e-resource marketing among students. However, a nuanced perspective is essential, warranting a thorough exploration of how these technologies can be optimally integrated into library marketing strategies to enhance students' engagement with e-resources.

Further delving into the correlation matrix analysis (Table 5.26), strong positive correlations among most Web 2.0 technologies come to light. This suggests that if one technology is deemed viable, there is a substantial likelihood that others will be perceived similarly. This consistency in respondents' assessments across various technologies accentuates the significance of harnessing multiple Web 2.0 tools for effective e-resource marketing for students. Confirming the appropriateness of the data for factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Significance (Table 5.27) underscore the perceived viability of Web 2.0 technologies, alluding to a shared underlying factor.

Further insights are gleaned from the component matrix (Table 5.28), revealing a strong correlation between all variables (Web 2.0 technologies) and the extracted component. This points towards a single factor underpinning participants' perceptions of viability. In-depth interviews with library professionals offer additional valuable insights into the efficacy of Web 2.0 technologies in marketing e-resources to students. Interviewees acknowledge the imperative of embracing

advanced technologies and recognise the potential of various Web 2.0 tools such as social media, blogs, wikis, podcasts, and webinars in engaging students and promoting e-resources effectively. These tools are seen as pathways to create interactive and immersive learning experiences that not only highlight the value of library resources but also foster collaboration among students. The research findings align with existing literature advocating for libraries to adopt new tools, particularly Web 2.0, to enhance service delivery. For instance, Ansah et al. (2023:1) and Cheng et al. (2020) emphasised the role of the latest technologies, like Web 2.0 and mobile services, in efficient and cost-effective marketing strategies. This is particularly pertinent considering the challenges faced by libraries in developing countries in conducting outreach programmes to market their resources and services. Similarly, Jones and Harvey's (2019:3) study on marketing library services through Facebook groups indicated that using Web 2.0 tools establishes a positive connection between the library and users.

In conclusion, the study's findings underscore the potential of Web 2.0 technologies, especially social media networking sites and virtual instant messaging platforms, as highly viable means for marketing e-resources to students, according to Johoran and Somaratna (2021). Wikis, Google Meet, and Classroom also display moderate promise. Conversely, technologies like Vokis, Flickr, RSS feeds, blogging pages, and podcast/video casts are regarded as less practical options. The strong positive correlations among these technologies highlight the efficacy of employing multiple Web 2.0 tools to maximise their impact on e-resource promotion. The insights garnered from one-on-one interviews further substantiate the value of these technologies in engaging students and augmenting library marketing endeavors.

6.4.2 social media and related tools for marketing e-resources to students

The study's findings provide valuable insights into the potential efficacy and feasibility of harnessing social media tools for effectively marketing electronic resources to students. The data showcased in Table 5.29 of subsection 5.6.2 within Chapter 5 highlights a range of social media

platforms that hold promise for TU libraries to enhance their marketing strategies. Integrating these social media networking technologies into library marketing approaches offers the prospect of piquing students' interest and stimulating their exploration of library resources.

Subsequent sections delve into specific preferred social media networking tools for marketing e-resources, as indicated by survey participants. Noteworthy choices include WhatsApp, YouTube for demonstrations and tutorials, Facebook for demonstrations and tutorials, and TikTok for tutorials. These platforms garnered substantial acceptance, with a noteworthy interest in receiving regular updates via the library's Twitter handle, Instagram, Pinterest, and Telegram. In contrast, LinkedIn, Myspace, blogging, Snapchat, and Tumblr received lower preference, with fewer respondents indicating familiarity. Overall, the findings suggest a preference for social media strategies emphasising visual content like videos and images, as well as platforms extensively used by students for social interaction, such as WhatsApp and Pinterest.

The results of this study are consistent with those of previous studies that were similar in nature. At the Nigerian Association of Library and Information Science Educators' research conference in Rumuolumeni, River State, Baba (2019) did a study at the Ignatius Ajuru University of Education (Nalise). The study concentrated on using Web 2.0 technologies to promote knowledge sharing and library information products and services. The study addressed impediments to information distribution by highlighting the value of social networking sites like Facebook for marketing events and resources. In addition, Rahoo et al. (2018:1) emphasised Twitter's ability to collect insightful data on library patrons, which may be used to improve resource and service planning on Web 2.0 sites like blogs, Facebook, Twitter, YouTube, and Wikis. The results additionally validate other studies (Chanetsa & Ngulube, 2016; Boateng & Quan, 2014) that have demonstrated the significance of Web 2.0 technologies in advancing library resources and services. For example, prior research (Boateng & Quan, 2014; Rahoo et al., 2018; Baba, 2019) has discovered that social media networking sites, blogs, and wikis can be incorporated into libraries to promote their goods

and services, offer two-way communication channels for patrons to share ideas and opinions, and build subject guides and knowledge bases. Web 2.0 tools that libraries frequently utilise to advertise their services include social networking platforms like Facebook and Twitter, as well as instant messaging, RSS, and podcasts.

Beyond survey results, in-depth interviews further underscored the importance of adopting social media networking sites. The platforms mentioned by participants encompass WhatsApp, Facebook, Twitter, Pinterest, YouTube, TikTok, Instagram, Telegram, and Snapchat, among others. These insights underscore the growing recognition of social media's role in engaging students and facilitating access to e-resources.

Interviewees acknowledged the significance of embracing cutting-edge information and communication technologies (ICTs) and digital tools to augment marketing endeavors. They acknowledged social media platforms' potential for disseminating e-resource information to students, underscoring the necessity for libraries to establish a presence on these platforms. The subsequent subsection delves into the discussion of findings pertaining to the utilisation of institutional and library websites as avenues for e-resource marketing. The subsection that comes next presents a discussion of findings regarding the use of institutional and library websites as a place to market e-resources.

6.4.3 Enhancing visibility of e-resources through library and institutional websites.

The study's findings strongly emphasised the pivotal role of library and institutional websites as potent platforms for effectively marketing e-resources (as cited in Section 5.6.4 of Chapter 5). The findings overwhelmingly demonstrate the rationality of leveraging both library and institutional websites as ideal conduits for e-resource marketing. For instance, a participant succinctly captured this sentiment, stating, "I strongly agree with the idea of using the library page and institutional website for marketing and promotional activities for the e-resources available from the subscribed

academic databases." This recognition stems from the cost-effectiveness and wide reach of websites in promoting e-resources to students.

The study's findings revolve around enhancing e-resource visibility and awareness through these websites. Among the suggestions are posting direct links to e-resources and informative videos that can captivate student attention and enhance their awareness of available resources. Notably, the findings highlight the necessity of creating universal resource locator (URL) links to e-resources on library websites. Additionally, the concept of dedicated webpages explicitly designed and promoted for the marketing of library resources emerged as a potent strategy. This approach effectively addresses the challenge of students' underutilization of subscribed electronic databases by simplifying access and offering training. The findings echo Bwadj and Jain's observation (2016:120) that the library website serves as an indispensable tool for sharing vision, yearly plans, new additions, and initiatives, thereby providing a structured channel to market and deliver subscribed e-resources.

Similar studies further support the significance of effectively utilising library websites for marketing endeavors. Kaur and Rani (2008:515) proposed that libraries should organise regular orientation programs, publicise resources, and maintain personal contacts with users. They also advocated for libraries to possess a functional website for advertising and disseminating library products and services. Meanwhile, Islam and Hossain's study (2014) of 57 university libraries in Bangladesh indicated underutilization of websites for marketing library resources and services. Similarly, a study by Kaur and Rani (2008) within Malaysian libraries revealed inadequate utilisation of websites for promotional activities among user groups. The findings align with those of other previous studies by Uzuegbu, Chukwu, and Ibegwam (2012) and Scholastica and Njoku (2018), which emphasised the importance of a strong online presence through library websites. Libraries can promote e-resources on their websites, which is a cost-effective marketing method, especially for those with limited budgets. A dedicated e-resources page on the library or

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institution's website that is easy to navigate, visually appealing, and provides clear descriptions of each resource can help. Libraries can also promote e-resources prominently on their homepage and showcase real-life examples of students who have benefited from them. In summary, libraries and academic institutions should prioritise the use of their websites as a primary marketing tool for e-resources based on the study's findings.

To sum up, the findings underscore the significance of optimising library and institutional websites for marketing e-resources. These platforms provide a streamlined means to disseminate e-resource information systematically to users. The study's insights align with past research, urging libraries to capitalise on websites to foster engagement, awareness, and effective delivery of library resources and services.

6.4.4 Targeted SMS messages and email communication with students

The findings of the research, outlined in subsection 5.6.5 of Chapter 5, highlight the significance of utilising targeted SMS messages and email communication as robust strategies for effectively marketing e-resources to students. Through the study, it was revealed that sending targeted SMS messages represents a contemporary approach to directly engaging students on their mobile devices, providing them with valuable insights into new e-resources. The wide prevalence of SMS messaging empowers libraries to establish direct communication channels with students, enriching their access to and interaction with e-resources. This strategy leverages the immediacy of mobile devices, facilitating the efficient dissemination of timely updates concerning new resources. By harnessing the potential of SMS messaging, libraries can proficiently seize students' attention and cultivate heightened utilisation of e-resources (Nwabugwu, Nwobodo, & Okoro, 2019:161; Bwadj and Jain, 2016:120). Notably, the use of SMS messaging stands as an essential tool for sharing information to market and deliver subscribed e-resources. Nwabugwu, Nwobodo, and Okoro (2019:161) affirm that SMS-based services provide a versatile and cost-effective means of marketing library resources. Additionally, Reddy and Aswath's (2018) study highlights the

emerging trends in library marketing and engagement through digital media and demonstrates that SMS-based services can effectively cater to users' information needs. Abrams and Tidal's (2020) research underscores the significance of SMS-based services in marketing library resources. The study also underscores that longer SMS messages might need to be split into shorter ones for greater effectiveness. SMS services are found to be particularly effective for the timely and economical delivery of informational resources to users (Baba et al., 2019:420).

In conclusion, the research findings emphasise the contemporary significance of targeted SMS messages and email communication as potent avenues for promoting e-resources to students. By strategically employing these methods, libraries can leverage the power of direct engagement and timely information dissemination, ultimately encouraging increased usage of valuable resources among students.

6.4.5 Emailing lists to alert and update students about e-resources.

The study's findings, as discussed in subsection 4.6.6 of chapter 5, shed light on the effectiveness of employing email alerts to update and inform students about e-resources. The research highlights that sending email alerts serves as a powerful method to keep students abreast of newly available resources. This observation corroborates the insights obtained from the survey, as outlined in Table 5.21 in Section 5.7.1. The results underscore the potential of email communication to effectively inform students about the latest e-resource offerings. The findings underscore the value of email communication in conveying information about e-resources to students. Effective email strategies involve incorporating direct links, crafting visually appealing content, and crafting compelling subject lines. The study underlines the utility of building email lists comprising interested students. This can be accomplished through online sign-up forms or by gathering email addresses during orientation events. By consistently sending newsletters to these lists, libraries can succinctly present clear and engaging descriptions of available e-resources, accompanied by access links. This approach fosters heightened awareness and utilisation of valuable digital resources, ultimately

contributing to students' academic success. Furthermore, the findings highlight the importance of segmenting the email list based on students' interests and academic programs. This targeted approach ensures that communication reaches specific groups of students who are most likely to be interested in certain e-resources. As a result, libraries can maximise the efficacy of their communication efforts and ensure that students receive information that aligns with their academic pursuits. The research findings underscore the potential of targeted email messaging and email communication as contemporary and dynamic strategies for effectively marketing e-resources to students. By directly engaging students on their mobile devices and leveraging email platforms, libraries can effectively convey the value and availability of these resources. The immediacy and personalization inherent in these approaches contribute to heightened student engagement and utilisation of resources. Similar studies that have explored the use of email lists to engage library users include Rahoo, Baladi, Arshad, Nagar, and Rustamani (2018). Their research revealed that various Web 2.0 tools, including Facebook, Twitter, Wikis, RSS, LinkedIn, blogging, YouTube, and email groups, are considered suitable and widely used for marketing and promoting various library services and resources in university libraries. Similarly, other studies (Muneja, 2023; Reddy & Aswath, 2018) have highlighted the significance of such new trends in ICTs, including emailing and SMS usage, to target library users to augment service delivery. Nwabugwu et al.'s (2019) study to examine awareness and use of e-resources among public extension personnel in Anambra State, Nigeria; Reddy and Aswath's (2018) study to examine emerging trends in library marketing and engagement through digital media; and Abrams and Tidal's (2020) study to assess how to optimise library marketing with short URLs have all highlighted the importance of adopting email targeting as a strategy to market library resources.

The findings of these studies have unveiled compelling potential for promoting e-resources to Ghanaian TU students through mobile apps (as cited in subsection 5.6.6 of Chapter 5). These findings underscore the capacity of mobile apps to serve as a supportive platform for e-resource provision. Introducing a dedicated mobile app for marketing e-resources emerges as an innovative

strategy to enhance accessibility for students. A participant concisely noted, *"the high use of smart and mobile devices makes mobile apps an effective way to promote e-resources among students."* The surge in mobile app popularity, facilitated by the convenience of smartphones and tablets, enables users to swiftly access information on the go. By creating a specialised mobile app for e-resources, students gain convenient access to the resources anytime and from anywhere, eliminating location constraints. Moreover, mobile apps can incorporate features that heighten engagement and interactivity with e-resources. The findings strongly emphasise that academic libraries can leverage the widespread usage of mobile devices among students to both market and facilitate the provision of electronic-based resources, thereby enhancing student satisfaction. These modern tools and technologies, such as SMS-based services, exhibit versatility and cost-effectiveness, catering to users' information needs effectively.

To conclude, the study's findings illuminate the promising avenue of utilising mobile phones and mobile apps for e-resource marketing. The resonance between these findings and previous research underscores the potential for academic libraries to harness mobile technology for effective e-resource provision and engagement, aligning with the changing technological landscape and users' preferences.

6.4.6 Leveraging universal resource locator (URL) links on library computers' desktops.

The qualitative findings of the study, as indicated in Subsection 5.6.8 and reinforced by the survey outcomes (as outlined in Table 5.21 in Section 5.6), underscore the importance of harnessing Universal Resource Locator (URL) links on library computers. One of the emerging and contemporary strategies to effectively market e-resources to students involves the creation of Universal Resource Locator (URL) links to access databases of e-resources directly from library computers' desktops. This strategic approach serves as a potent solution to tackle students' underutilization of subscribed electronic databases. By facilitating easier access to these databases

and offering instructional support, students are more inclined to fully utilise these invaluable resources.

A participant noted, "Creating links to a universal resource locator on the monitors of library desktop computers is a useful strategy to improve students' underutilization of subscribed electronic databases at the institution" (Participant 5). Moreover, another participant highlighted the benefits of posting links to e-resources along with demonstrative videos that guide users on how to access them. These actions effectively capture students' attention and heighten their awareness of the library's resource offerings (Participant 21). The strategy of creating Universal Resource Locator (URL) links on library computers' desktops emerges as a proactive approach to address the issue of underutilization of subscribed electronic databases by students. This approach streamlines the accessibility of databases and supplements it with relevant training, enhancing the likelihood of students tapping into these valuable resources. The study's findings underscore that this strategy resonates with the observations made by Abrams and Tidal (2020), which highlight the optimization of library marketing with short URLs. Additionally, the study conducted by Nwone and Mutula (2019) emphasises the positive impact of providing links to e-resources along with demonstrative videos to capture student attention and heighten their awareness of available library resources.

In conclusion, the study's findings emphasise the efficacy of integrating Universal Resource Locator (URL) links on library computers' desktops as a strategic solution to enhance the utilisation of e-resources by students. This approach aligns with the aim of promoting effective resource access and utilisation within academic settings.

6.4.7 Utilising digital display screens within and outside libraries

The study's findings, as unveiled in Subsection 5.6.9 of Chapter 5, shed light on the efficacy of employing digital display screens strategically positioned within and outside libraries. These

contemporary findings highlight the value of harnessing emerging technologies to present e-resources through digital display screens, strategically positioned within and outside library premises, as a progressive approach to marketing and promoting e-resources to students in technical universities in Ghana.

The outcomes of the study underscore the effectiveness of digital display screens in bolstering the utilisation of e-resources. Specifically, the findings illuminate that these screens can serve as potent tools to significantly enhance the usage and adoption of e-resources. The multifaceted capabilities of digital display screens are well-evidenced in their capacity to showcase the wide array of e-resources available, encompassing e-books, online journals, databases, and diverse digital content. By introducing users to previously undiscovered resources, these screens foster curiosity and further exploration.

Furthermore, digital display screens contribute to enhancing the accessibility of e-resources for users. They offer clear guidance on accessing these resources, providing crucial login information and pertinent website links. This streamlined access simplifies the intricate landscape of e-resources, thereby facilitating users' initial engagement and interaction. In addition, digital display screens serve as real-time conduits for updates on newly added e-resources or modifications to existing ones, allowing users to stay well-informed about the latest developments in the realm of e-resources.

The implications of the study's findings resonate with earlier research conducted by Yi (2016), Eze et al. (2018), Ifijeh (2020), and Yusuf (2020), aligning with their observations on the potential of digital display screens to showcase a broad spectrum of e-resources. These screens function as dynamic platforms to communicate the accessibility, convenience, and searchability features of e-resources, ultimately fostering users' appreciation of their value and motivating their integration into academic research and learning endeavors. In conclusion, the study's findings accentuate the pivotal role of digital display screens placed strategically within and outside libraries as a forward-

looking approach to marketing and promoting e-resources. These screens not only amplify resource utilisation but also engage users through dynamic and real-time information sharing, thus playing a pivotal role in modern library settings.

6.4.8 Offering online tutorials and webinars.

The study highlighted the efficacy of offering online tutorials and webinars to enhance students' utilisation of e-resources. Online tutorials and webinars provide valuable support to students in navigating complex e-resources. These learning opportunities enable students to gain proficiency in using these resources effectively, saving time and facilitating easier access to the information they need. The interactive nature of online tutorials and webinars fosters personalised learning experiences, allowing students to ask questions and receive immediate feedback, thereby clearing any doubts or misconceptions they might have. Librarians can leverage blogs to discuss and promote student engagement with e-resources. Blogs serve as platforms for librarians to share insights, tips, and updates related to e-resources. By creating a blog, librarians can engage with students in an informal setting, helping them navigate the intricacies of e-resources. Popular blogging platforms like WordPress, Blogger, and Medium offer user-friendly interfaces and tutorials to assist librarians in setting up their blogs. Podcasting and video sharing are additional avenues for librarians to discuss student utilisation of e-resources. Podcasts provide an audio format for librarians to share their expertise and insights on e-resources, while video sharing platforms like YouTube or Vimeo enable librarians to create and share instructional videos. These videos can demonstrate how to use specific e-resources, offer tips on accessing and searching for them, and highlight their benefits for academic research. Promoting podcasts and videos through social media, email newsletters, and other communication channels ensures that students and faculty are informed about these resources. Overall, the study emphasised that a multi-faceted approach involving online tutorials, webinars, blogs, podcasts, and videos can effectively enhance students' engagement with and utilisation of e-resources. These strategies not only provide support

but also facilitate a dynamic and interactive learning environment, ultimately contributing to students' academic success.

In conclusion, the findings of the third study's objective (1.5.3), highlighted in Chapter 5, Section 5.6, underscore the comprehensive nature of the study's results, shedding light on the efficacy of various contemporary and emerging strategies for effectively marketing e-resources. By harnessing the potential of web 2.0 technologies, including social media, institutional and library websites, SMS messaging, email communication, mobile apps, URL links, digital display screens, and email alerts, libraries can significantly enhance e-resource utilisation and student engagement. Through the integration of these technologies, libraries can elevate the visibility, accessibility, and utilisation of e-resources, ultimately contributing to heightened student engagement and improved academic achievement. These findings resonate with prior research, such as Chanetsa and Ngulube (2016) and Boateng and Quan (2014), which emphasise the pivotal role of web 2.0 technologies in promoting library services and resources. The study's conclusions highlight the holistic approach of leveraging a combination of Web 2.0 technologies and techniques to effectively engage students and promote resource utilization. This synthesis fosters a dynamic environment that nurtures collaborative learning and knowledge sharing among students, thus contributing to their academic success. Importantly, the study underscores the significance of adequately training library staff to adeptly deploy these tools and technologies for effective e-resource marketing. As the utilisation of Web 2.0 technologies necessitates digital literacy skills, educators and researchers should actively cultivate proficiency in various tools to facilitate collaborative learning and knowledge exchange. However, despite the wealth of contemporary and emerging tools and approaches, the effectiveness of these methods can be further amplified through the complementation of traditional approaches. Addressing funding and resource challenges is pivotal for implementing these strategies and fostering a culture of robust e-resource utilisation among students. The study's findings align with several reports (Uzuegbu et al., 2012; Scholastica and Njoku, 2018), highlighting the pivotal role of library websites in e-resource marketing. In the evolving landscape

of library services, prioritising website utilisation emerges as a cost-effective marketing avenue, especially for institutions with limited budgets. Libraries are well-positioned to leverage the potential of their websites to promote e-resources through dedicated pages, clear descriptions, and relatable examples that resonate with students' needs. Therefore, the study's conclusions underscore the critical role of website utilisation in modern e-resource marketing strategies.

6.5 Factors influencing students' behavioral intentions to use e-resources in libraries.

The research findings on the factors influencing students' behavioural intentions to use e-resources in university libraries (fifth study objective) provide valuable insights into the perceptions and attitudes of students towards these resources. The data collected from respondents and analysed in Chapter 5 (Table 5.31, Section 5.6) was presented in descriptive statistics, Cronbach's alpha (Table 5.32), and structural equation modelling (Fig. 5.2) to assess the reliability and internal consistency of the data and determine the relationships between different factors. The study utilised Venkatesh's et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Acceptance Model (TAM 1, 2, and 3) as the underlying theories to explore the relationships between different factors (Davis & Bagozzi, 1989; Venkatesh & Davis, 2000).

The results indicate that students generally perceive the factors influencing their behavioural intentions to use e-resources as moderately important. The findings align with the UTAUT (Venkatesh et al., 2003) and TAM 1, 2, and 3 (Davis & Bagozzi, 1989; Venkatesh & Davis, 2000), which suggest that users' perceptions of the importance and usefulness of technology influence their behavioural intentions. The descriptive statistics, including the mean and standard deviation, indicate that the responses for each factor were relatively consistent and close to the mean, highlighting the consistent attitudes towards these factors among respondents. This consistency in perceptions is important, as it indicates that students across different backgrounds and disciplines share similar views on the factors affecting their intentions to use e-resources.

The high Cronbach's alpha coefficient value of 0.992 (referenced in Table 4.32, Section 4.6) demonstrates the internal consistency and reliability of the data, indicating that the items in the questionnaire consistently measured the same underlying construct of behavioural intentions to use e-resources. This reinforces the validity of the study's findings and strengthens the link to the UTAUT and TAM, which emphasise the importance of reliability in measuring users' intentions and attitudes.

The significant impact of the factors predicting behavioral intentions (referenced in Table 4.33, Section 4.6), as supported by the one-way analysis of variance (ANOVA), further underscores the relevance of the UTAUT and TAM in understanding user behavior. The strong positive correlations between the variables that measured the influence on behavioral intentions to use e-resources validate the assumption of the TAM that perceived usefulness and ease of use are crucial determinants of behavioral intentions.

The Smart PLS analysis through structural equation modelling (referenced in Fig. 4.2 of Section 4.6) provided further insights into the relationships between the identified factors and students' intentions to utilise e-resources. This analysis reveals significant relationships between various factors, including marketing strategies, information retrieval skills, awareness of resources, efficacy with technology, perceived ease of access, perceived quality or value of resources, support from library staff, perceived quality of the information system, perceived relevance of resources, and influence from peers and lecturers. These findings closely align with the elements of the UTAUT and TAM, which posit that factors like social influence, facilitating conditions, and perceived usefulness and ease of use influence user behavior.

The qualitative interviews with library and information professionals (referenced in Section 4.6 of the previous Chapter 4) further highlighted additional factors influencing students' behavioural intentions to use e-resources. These factors include accessibility and convenience, infrastructure, user awareness and education, relevance and quality of content, intrinsic interest in technology,

attitudes toward digital tools, the environment in which resources are provided, training, the efficacy of internet connectivity, the availability of computer devices, the stability of power supplies, and marketing strategies. These qualitative insights complement the quantitative data and provide a more comprehensive understanding of the complex factors influencing students' intentions.

Overall, the study's findings, supported by both quantitative and qualitative approaches, offer a comprehensive understanding of the factors influencing students' behavioural intentions to use e-resources in university libraries. By linking these findings to the UTAUT and TAM, the research provides a solid theoretical foundation for explaining and predicting user behaviour in the context of e-resource utilization. The results offer valuable guidance for libraries in tailoring their marketing strategies, improving infrastructure and support, and enhancing the relevance and usability of e-resources to promote greater usage among students, ultimately contributing to a more efficient and productive learning experience.

6.6 Competencies of library professionals in marketing e-resources to students

The fifth objective of the study was to examine the competencies of library staff in marketing e-resources to TU students in Ghana to promote their optimal use. The study survey findings revealed several competencies (section 5.8 in chapter 5 Tables 5.28 refers) required by library professionals in marketing e-resources to students, as evident in the findings of Yadav (2022) when the study examined the essential skills and competencies of LIS professionals in the digital age, which are presented under different sub-headings, regardless of their order of importance.

6.6.1 Academic and professional competencies

The study's findings emphasise the importance of academic and professional competencies for library professionals in marketing e-resources to students at Ghanaian Tertiary Institutions (TUs). The results indicate that library professionals in the Ghanaian TUs possess a high level of education

and professional qualifications, with many holding post-graduate and terminal degrees such as MPhil, Ph.D., MLS, and their equivalents. This educational background enables them to gain the necessary exposure and experience to effectively market library resources to students. The study's survey results demonstrate that respondents perceive the library and information professionals in TUs as highly qualified, particularly in terms of their academic credentials. This finding is further supported by earlier biographical data from the study, which revealed that most senior library professionals in TUs hold advanced degrees, reinforcing their academic and professional expertise to contribute to e-resource marketing efforts. Furthermore, the study highlights the significance of academic qualifications in enhancing the intellectual exposure of librarians. As Raju (2014) pointed out, higher levels of education lead to increased intellectual exposure among librarians, which can contribute to their effectiveness in their roles, including marketing e-resources. The study also suggests that the complex nature of university libraries and their pivotal position within the university environment necessitate specific academic qualifications and professional certifications for core professional staff, including librarians. This aligns with the idea that people with higher levels of education are more likely to be innovative, as mentioned in the study by Raju (2017). Moreover, there is an emerging trend that calls for professional librarians to possess academic qualifications equivalent to those of their teaching counterparts. This trend acknowledges the academic status granted to librarians and underscores the importance of ensuring that they have qualifications on par with teaching faculty members (Nnadozie & Onah, 2016).

6.6.2 Information literacy skills

According to the survey results presented in Tables 5.35 and 5.8 of Section 5.8 of Chapter 5, information literacy skills are considered crucial for library and information professionals in assisting students in accessing and utilising electronic resources. Successful marketing initiatives by library professionals necessitate staying updated on their information literacy skills in line with the standards set by the Association of College and Research Libraries (ACRL), as published in

the Information Literacy Competency Standards for Higher Education (2000), as cited in Vidal et al. (2021:542; George & Chandrasekara, 2022), and by the American Library Association (ALA) (2019). These standards were originally formulated to provide a framework for evaluating and promoting information literacy skills among students in colleges and universities. The survey findings emphasise the significance of information literacy skills for library professionals, which aligns with the outcomes of interviews conducted during the study. The professionals were found to possess a high level of competency in information literacy skills, further validating the importance of this aspect.

These findings are consistent with previous studies, such as those conducted by Yadav (2022) and Dulle (2015), which highlight the challenges faced by users in transitioning from print to electronic sources and stress the need to enhance information literacy skills to overcome them. Various studies (Odunewu & Aluko-Arowolo, 2018; Olayode, 2023; and Yadav, 2022) have established a direct relationship between the use of electronic resources and users' information literacy skills. Insufficient information literacy skills among students have been identified as a primary obstacle to the accessibility and utilisation of electronic resources in higher education institutions. In some libraries, users exhibit a lack of information-seeking skills, resulting in underutilization of available information resources. Hence, equipping students with information literacy competencies is crucial to empowering them to identify, locate, and effectively utilise information resources.

6.6.3 Research and reference skills

In today's digital age, the role of library and information professionals has transformed significantly from traditional bookkeeping to becoming facilitators of e-resources for students. It is paramount for these professionals to possess high levels of reference and research skills to effectively support students in accessing and using electronic resources, ensuring they have access to reliable and accurate information for their academic endeavours. The study's qualitative data highlights the significance of reference and research skills as an eminent requirement for library

professionals in providing e-resources to students at tertiary institutions (TUs). However, the survey findings, as referenced in Chapter 5, Section 5.8, Table 5.35, reveal a contrasting perception among respondents. The relatively low mean score of 1.90 implies that respondents might perceive these skills as less important for library staff in TUs. This discrepancy could be attributed to a lack of full appreciation of research and reference skills in relation to e-resource provision and marketing.

Nonetheless, several compelling reasons emphasise the criticality of reference and research skills for librarians in the digital age. Librarians must possess excellent reference and research skills to identify and choose the most relevant and credible e-resources for students. They need to evaluate the quality of these resources to ensure students have access to reliable and accurate information. Librarians should have a proficient understanding of how to access and navigate various electronic resources. They must be able to guide students in effectively accessing and utilising e-resources to support their academic needs. Librarians are expected to assist students in their research endeavours. This necessitates strong research skills to help students identify relevant and trustworthy sources. Additionally, librarians should have referencing skills to ensure students adhere to the required citation and referencing formats. Librarians need to possess skills in database management, record keeping, and digital preservation to maintain and manage electronic resources effectively. Ensuring the availability and accessibility of these resources is crucial for supporting students' learning and research. The study thus underscores the importance of reference and research skills for library and information professionals in providing e-resources to students. While the survey findings may indicate a potential perception gap, the significance of these skills remains undeniable. Librarians' proficiency in selecting, accessing, evaluating, and managing e-resources plays a vital role in empowering students with reliable information, enhancing their academic experiences, and fostering their success in the digital era.

6.6.4 Knowledge of contemporary and emerging ICTs/digital technologies

The survey results, as referenced in Chapter 5, Section 5.8, Table 5.35, revealed that there is a high endorsement of the need for library staff to possess social media and Web 2.0 skills for effective marketing of e-resources to students. Respondents perceived these skills as highly required competencies for library professionals engaged in e-resource marketing. The qualitative data from interviews provided additional endorsement for the significance of social media and Web 2.0 tools in promoting e-resources effectively. Social media platforms like Twitter, Facebook, and Instagram offer libraries direct channels to communicate with students and actively promote e-resources. Additionally, blogs, wikis, and podcasts present additional opportunities for libraries to create engaging and interactive content that fosters interest in e-resources. These tools can help libraries build stronger connections with their student audience, foster engagement, and contribute to a more effective and efficient learning environment.

To effectively assist students in accessing and using e-resources, library, and information professionals in TUs must strike a balance between technology/ICT skills, reference skills, and research skills. By continuously developing their competencies and staying up-to-date with technology and e-resource advancements, library staff can provide the best possible support to students in their academic pursuits. By embracing digital literacy and harnessing social media and Web 2.0 tools, libraries can foster a thriving information environment, empowering students to make the most of available e-resources for their educational growth and success. According to Swapna and Biradar's (2016) study, there is a need for library professionals to be aware of emerging technologies and develop certain basic skills to understand new technologies. This includes knowledge of database management, document management, content management, indexing, and database technologies, as well as network technology, library software, programming knowledge, up-to-date IT skills, continuous monitoring of emerging technologies, web-based skills, and web technology.

The research emphasises the need for library professionals to stay abreast of emerging technologies and continuously develop their digital literacy skills. As technology constantly evolves, librarians and information specialists must be well-versed in database management, document management, content management, indexing, database technologies, network technology, library software, programming knowledge, and web-based skills. Continuously monitoring emerging technologies and web technology will ensure that library staff can effectively support students in accessing and using the latest e-resources, providing essential technological support and guidance.

6.6.5 Practical knowledge of marketing and promotional activities

According to the survey results as reported in Chapter 5, Section 5.8, and Table 5.28, the study found the need for marketing and promotion competencies of library and information professionals to be relatively high. The interviews with library and information professionals presented a similar perspective, as the respondents confirmed the relevance of sufficient knowledge and competencies around marketing. There are several studies that have identified marketing, advocacy, and promotion as key skills that information professionals should possess. The findings of Agyei and Ngulube's (2022) study and Singh's (2017) study align with this, revealing that marketing competency is critical to the success of information professionals. Library professionals need to have adequate marketing skills to effectively promote and increase the usage of e-resources among students, and therefore, a deeper understanding of the marketing competencies of library professionals is crucial to improving the delivery of library services, as reported by several authors (Inyang & Ekpang, 2019; Osinulu et al., 2017; Singh, 2017). Agyei and Ngulube's (2022) study reported that one of the critical skills needed to succeed as information professionals is adequate marketing skills to effectively promote and increase the usage of library resources. The findings from the survey phase of this study are in line with reports by Ofori et al., 2020, and Agyei and Ngulube's (2022) studies, which established that the libraries within the TUs in Ghana lacked formal marketing training to be able to launch successful marketing campaigns to improve

students' patronage of e-resources. The lack of adequate knowledge of marketing concepts by librarians could cause the phenomena of low user awareness, lack of promotion, and low usage of e-resources. It is recommended that library professionals receive formal, subject-based training in marketing skills during their education, as well as in-service training on marketing skills, digital literacy, public relations, and customer relationship management. However, the lack of marketing courses in library school curricula may hinder librarians from possessing adequate knowledge of marketing concepts. Therefore, continuous professional development training in marketing skills, public relations skills, and customer relationship management skills is essential for librarians. These skills are crucial for ensuring successful marketing and the evolution of creative and efficient marketing techniques to increase students' use of e-resources in the libraries of TUs in Ghana.

6.6.6 Traditional LIS skills, extended to the electronic environment.

The study highlights the importance of traditional library and information science (LIS) skills extended to the electronic environment. In today's digital landscape, library professionals must possess competencies to perform traditional library activities in an electronic environment. Swapna and Biradar (2016) suggest that library professionals need to have adequate traditional LIS competencies extended to the electronic environment to provide e-resources to students effectively. These competencies include collection development and acquisition, conservation and preservation, digital preservation, and remote access user management. Additionally, librarians must develop capabilities for evidence-based librarianship, including acting as evidence locators, resource providers, information filterers, educators, disseminators, project leaders, literature searchers, document suppliers, data extractors, data synthesizers, and report writers. They must also possess knowledge of resources and tools such as metadata and MARC format for information organization, search capabilities, effective information search strategies, analysis, interpretation, and presentation of information, and integration and evaluation of information sources for information searching and reference services. Further, librarians should have internet knowledge

and awareness, understand users, and have reference interview skills to provide quality service (Swapna and Biradar, 2016).

6.6.7 Communication, interpersonal relations, and customer service

As per the survey results presented in Chapter 5, Section 5.8, Table 5.28, respondents viewed the library staff communication and interpersonal skills and customer service skills to be relatively low, with a mean score of 1.77. However, the interviews with library professionals portrayed a different picture, suggesting that the staff had effective communication, interpersonal skills, and customer service abilities while promoting e-resources to students. The finding presented in the paragraph suggests a contradiction between the survey results and the interviews conducted with library professionals regarding the communication, interpersonal skills, and customer service skills of library and information professionals in promoting e-resources to students. The survey results indicate that the mean scores for these skills were relatively low, whereas the interviews showed that the staff had effective communication, interpersonal skills, and customer service abilities. It is worth noting that the staff's responses in the interviews might have been influenced by social desirability bias (Edwards, 1969:351), as they appeared to provide more favourable answers than their authentic attitudes towards the subject. Social desirability bias occurs when participants in a study respond in a way that they perceive to be socially acceptable, rather than providing honest and accurate answers (Edwards, 1969:351). In this case, the library professionals may have provided more positive responses during the interviews due to the perceived desirability of having good communication and interpersonal skills and providing excellent customer service. Another possible explanation for the discrepancy is that the survey questions may not have adequately captured the nuances of the library professionals' communication, interpersonal skills, and customer service abilities. Overall, the findings suggest the importance of considering potential biases when interpreting research results, as well as the value of incorporating qualitative methods such as interviews to complement quantitative data.

To conclude, the findings of the fifth study's objective outline the essential proficiencies demanded of library professionals in TU libraries to adeptly market e-resources to students. This comprehensive spectrum of competencies encompasses academic and professional acumen, adeptness in computer utilisation and digital literacy, and a solid foundation in information literacy skills. The roster further encompasses honed research and reference capabilities, a nuanced grasp of both contemporary and emerging ICTs and digital technologies, practical familiarity with marketing and promotional techniques, and the ability to seamlessly transpose traditional library and information science (LIS) proficiencies into the dynamic electronic environment. Not to be overlooked are the pivotal skills of effective communication, fostering interpersonal relations, and delivering top-notch customer service. These multifaceted competencies amalgamate to empower library professionals in TU libraries with the prowess needed for a targeted and impactful marketing campaign tailored for e-resources.

6.7 Innovative strategies for marketing e-resources to TU students

The aim of the study's sixth objective was to investigate innovative marketing techniques for libraries at Ghanaian TUs to pique students' interest in using the electronic resources from the data databases the libraries belong to. The study's findings revealed several strategies that the libraries at TU may use to spark students' interest in using the electronic resources that are available through the databases to which the libraries have subscriptions.

The study's findings (referenced in Section 5.9 of Chapter 5) revealed several innovative strategies that can be effective in promoting e-resource usage among students in technical universities in Ghana through the analysis of qualitative and quantitative data. Particularly intriguing among the study's findings are those emanating from the interviews with 21 library and information professionals, which added valuable insights to complement the survey findings, with some key themes emerging. The findings are discussed in the succeeding subsections.

6.7.1 Collection development policy for electronic resources

The study's findings, as presented in Section 5.9.1 of Chapter 5, shed light on the significance of a well-defined collection development policy (CDP) focusing on electronic resources in university libraries. The qualitative data provided valuable insights, revealing that such a policy is essential in ensuring that e-resources align with the needs and interests of users, making them more relevant and valuable in the academic context. In the digital environment, a collection development policy serves as a written statement of goals and evaluative parameters, guiding decision-making when acquiring and managing electronic materials within the library's collection (Baruah and Chanda, 2022:1). It is important to note that previous studies, such as Okogwu and Ekere's (2018) research, have indicated that a considerable number of university libraries (80.2%) lack formal collection development policies for their electronic collections. This highlights the pressing need for libraries to develop and implement well-structured written electronic resource CDPs. These policies will act as essential manuals, references, and points of continuity for librarians responsible for e-resource acquisition. Numerous studies focusing on the collection development policy for electronic resources in university libraries (Srivastava, Parabhoi, and Sonkar, 2016; Okogwu and Ekere, 2018; Baruah and Chanda, 2022; Shukla & Mishra, 2011; Natarajan, 2018; Okogwu and Ekere, 2018) have emphasized certain key components that should be included in the policy. These elements typically encompass:

a) Clearly define the objectives and purpose of the CDP for e-collections, aligning it with the overall goals of the library and the university.

b) Establish a criterion for evaluating and selecting e-resources to ensure they meet the academic and research needs of users effectively.

c) Implement a transparent process for allocating financial resources to acquire electronic resources and sustain the collection.

d) Address the licensing and access arrangements for e-resources, including terms of use, subscription models, and considerations related to copyright.

e) Outline methods and procedures for regular evaluation of the effectiveness and relevance of the e-collection.

f) Consider opportunities for collaboration with other libraries or consortia to leverage collective resources and provide a broader range of e-resources to users.

g) Develop strategies for educating users on the availability and effective use of e-resources, including training sessions and user support services.

h) Specifying a periodic review process to ensure the policy remains up-to-date and aligned with evolving user needs and technological advancements.

By incorporating these crucial components, the CDP can effectively guide the acquisition and management of electronic resources in the university library. It will provide a strategic framework for decision-making, ensuring that the library's e-resource collection remains relevant and valuable to the academic community. In conclusion, the study's findings underscore the importance of having a well-structured and comprehensive collection and development policy for electronic resources. Such a policy serves as a roadmap for libraries to efficiently acquire and manage e-resources, aligning them with users' needs and institutional goals. As technology and user needs continue to evolve, periodic reviews of the policy will ensure its continued effectiveness and relevance in supporting the academic and research missions of the university library. The integration of a robust collection development policy for electronic resources is crucial for libraries to adapt to the changing landscape of information access and enhance their ability to meet the diverse needs of their users. By proactively addressing these challenges and leveraging the insights from this study, university libraries can strengthen their collection development efforts and elevate the quality of services they offer to their academic community.

6.7.2 Marketing planning

A notable theme that emerged from the qualitative data is the need for strategic marketing planning for Ghanaian TU libraries. The findings revealed the need for the libraries to develop written marketing plans to guide their marketing practices. A marketing plan helps ensure a structured approach to marketing efforts, allocate resources effectively, and measure campaign success (Nagra-Kanu, 2019:115). In recent years, the need for marketing planning for libraries has been variously championed in the literature of library and information science as an effective solution to the effective marketing of library resources and services. Bhardwardj and Jain's (2016:119) study recognised that libraries need to formulate a marketing plan along with a financial budget on a yearly basis so that library resources can be optimally utilised. According to Nagra (2017:8), a marketing strategy for library resources involves the methods and pathways to achieve the established goals and objectives.

The need for a marketing policy to guide strategic marketing planning was a particularly intriguing revelation for the success of the marketing practises of TU libraries. The findings of previous research (Agyei and Ngulube, 2022:1) have found that Ghanaian academic libraries lacked formal policies or structures to market their products and services. Additionally, Ndungu's (2018) research indicated that while Kenyan academic librarians were conducting some marketing activities, they were not taking a strategic marketing approach. Bhardwaj and Jain (2016:125) also discovered that libraries lacked a marketing culture, although librarians recognised the value of marketing to their patrons. To address this, the study recognised the need for developing a strategic marketing plan for e-resources to guide the library's campaigns for marketing these resources and services. The establishment of a formal, user-centric marketing plan for libraries, with regular allocation of funds to support marketing efforts, to ensure optimal utilisation of library resources and services (Bhardwaj and Jain, 2016:199), will be of immense help. The study's findings reinforce the need for written marketing plans to guide the library's campaigns for marketing e-resources and services

in TU libraries (Dubicki's 2007). Essential components of the strategic marketing plan for e-resources in academic libraries outlined in Nagra's (2019:8) study are adapted in this study for libraries, as depicted in Figure 6.1. The key elements of a marketing strategy for university libraries' electronic resources are depicted in Figure 6.1. (inspired by Grede, 2005; Nagra, 2017).
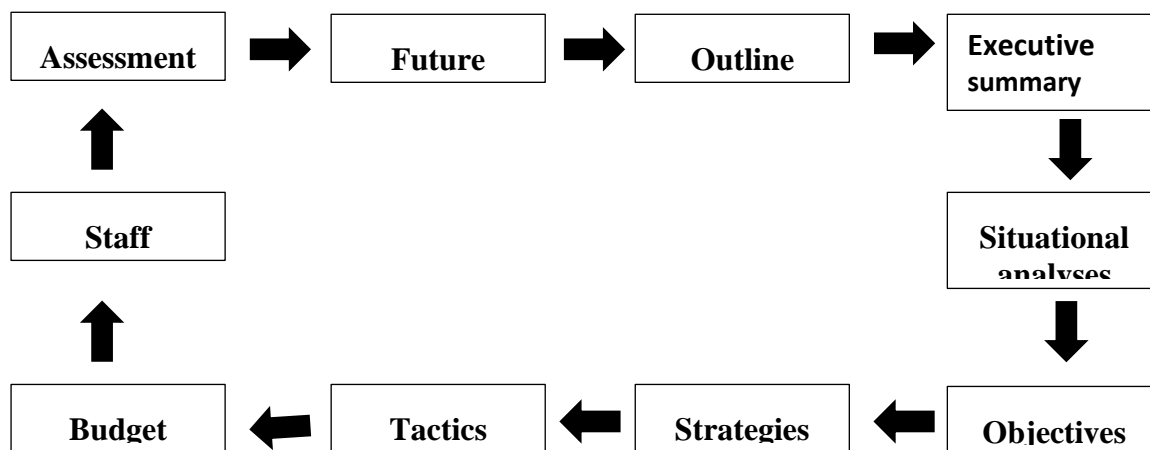
Figure 6.1: Basic elements for e-resources' marketing plan (Adapted from Nagra, 2017; Grede, 2005)

Each component, as shown in Figure 6.2, is elaborated in detail in the following:

1) **Outline:** The outline section of a strategic marketing plan for academic library e-resources serves as an index and table of contents for the plan. It outlines the main headings and sections of the marketing plan, providing an overview of its contents.

2) **Executive summary:** The executive summary of a strategic marketing plan for academic library e-resources is a concise summary of the plan, outlining its purpose, goals, and strategies. It should include background information on the library's e-resources, its current situation, and any challenges or opportunities it faces. The executive summary should also provide an overview of the entire plan and its sections, including the situational analysis, objectives, strategies, tactics, budget, staff, assessment, and future steps. It is essentially a snapshot of the complete plan.

3) **Situational analysis:** The Situational analysis section forms the foundation of the strategic marketing plan for academic library e-resources. To describe the current

situation, one of the methods recommended by Kennedy (2014) is SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, although it may not represent the complete situation. Grede (2005) suggests gathering information based on three factors: "US," "THEM," and "ENVIRONMENTAL SCAN," depending on the country where the library operates. In the case of the academic library e-resources marketing plan, "US" represents the library, while "THEM" refers to the stakeholders. An environmental scan may involve assessing the institutional setting's background and current state, community college library enrollments, library collaborations, e-resource collection, the college's technology infrastructure, and the library's contributions to academic success.

4) **Objectives:** The objectives section of the marketing plan outlines the library's desired outcomes and how to achieve them. The objectives should be specific, measurable, achievable, relevant, and time-bound (SMART). The objectives could include launching new e-resources in specific disciplines, increasing usage statistics for e-resources, promoting unique features of an e-resource, and so on. The objectives should have a clear timeline for implementation and evaluation to ensure they are quantifiable and measurable.

5) **Strategies:** Strategies are the means of achieving the defined objectives in a marketing plan. There are various routes available within libraries and academic units to accomplish these objectives strategically. For instance, the following could form the strategies: presenting a clear image of quality service to students through interactions with library team members, participating in Freshman Initiative programs, offering College Ready/College Prep Workshops, enhancing the library's presence on college TV and radio shows, conducting library instructional classes, participating in student orientations and admission open houses, and collaborating with various student clubs.

6) **Tactics:** Tactics are the specific actions that are taken to achieve the objectives set in the marketing plan. According to Nagra (2017), tactics can be implemented using traditional media, digital media, and social media, all of which have the potential to connect with a cohesive user group, such as students or faculty who use the library. For example, libraries can use social media to promote their services and facilitate student-to-student interactions. There are both cost-free and cost-based tactics available for marketing library e-resources, and the library's budget will determine which tactics it can afford to use. Investing time, energy, and resources in creative ways can lead to excellent results. Table 1 provides an extensive list of resources, both paid and unpaid.

7) **Budget:** The budget section of a strategic marketing plan for academic library e-resources should include the cost of the resources that the library is purchasing, and the expenses associated with implementing the plan. When planning the budget, it is important to consider the cost of employing new staff, if necessary, and to include it in the annual budget for e-resources. Nagra (2017) reported that her library was able to receive new staff lines because of their marketing plan. If the library is not successful in obtaining all the requested funds, it is advisable to work towards requesting them again in the next cycle. Once the funds are allocated, a continuous flow of funds for subsequent years can be expected, barring any budget cuts.

8) **Staff:** To achieve pre-defined goals, a marketing plan serves as a unified approach and a written document for the library team to consult. It ensures that everyone on the team is working towards the same objectives. However, as marketing plans require a collective effort to reach stakeholders, Kennedy (2014) recommends forming a marketing team in the library to work on the plan, as it is not feasible for one individual to do all the work. Additionally, it is important to provide training and cultivate relationships with academic departments and other units of the institution to promote and market e-resources.

9) **Assessment:** To ensure the success of a marketing plan, it is crucial to evaluate and assess its effectiveness. One approach to assessment is to conduct surveys on the library website to gather both qualitative and quantitative feedback on e-resources. Additionally, usage data from the library website and vendor-supplied data can provide insight into the success of the marketing plan in meeting its objectives. The objectives themselves should be measurable and well-defined from the outset to facilitate effective assessment. Ultimately, the feedback gathered through assessment should be used to inform future marketing efforts and refine the marketing plan as needed.

10) **Future steps**: It's important to continuously review and revise the marketing plan based on feedback and results. This ensures that the library is always adapting to the needs of its users and staying relevant in the ever-changing landscape of academic resources.

The findings of the study demonstrate the importance of a strong marketing plan for e-resources in academic libraries cannot be overstated. A well-crafted marketing plan provides numerous benefits for all stakeholders involved, including the library and the wider institution. By establishing clear goals and objectives, a marketing plan helps to build institutional memory and ensure that everyone is working towards the same objectives. It fosters a sense of commitment, better communication, and coordination both within and outside the library, leading to significant performance improvements. Furthermore, the implementation and assessment of a marketing plan helps to increase awareness of e-resources among stakeholders, leading to increased usage and value for money justification to management. By measuring success rates against pre-defined objectives, libraries can make informed decisions about future steps for improving their marketing efforts, resulting in even greater success. Overall, a well-designed marketing policy and marketing plan is essential for academic libraries looking to promote their e-resources effectively and efficiently. By continually evolving and aligning with the changing needs of patrons, the academic environment, and the nature of e-resources, libraries can ensure that their marketing efforts remain relevant and impactful in the long run.

6.7.3 Marketing via contemporary and emerging Web 2.0 tools

The study's findings regarding the use of contemporary and emerging Web 2.0 tools for library marketing underscore the importance of embracing modern communication channels to effectively engage students in the evolving digital landscape. The survey results presented in Table 4.36 of Section 4.9 in Chapter 4, along with the qualitative data, clearly demonstrate that TU libraries in Ghana can significantly enhance their marketing strategies by incorporating Web 2.0 tools to increase students' utilisation of e-resources.

A key finding of the study is the effectiveness of various Web 2.0 technologies, including social media networking sites, blogs, wikis, RSS feeds, and podcasting, in promoting e-resources to students. The study emphasises the significance of visual content, such as videos and images, on popular social media platforms like WhatsApp, TikTok, YouTube, and Facebook as preferred tools for engaging students and promoting the access and usage of e-resources. Leveraging these platforms allows libraries to showcase the value of their e-resources and create engaging content that resonates with students' preferences and habits. Additionally, the study highlights the use of digital display screens as an effective strategy to increase the visibility and adoption of e-resources. By using digital displays, libraries can attract more users and effectively promote e-books, online journals, databases, and other digital content in high-traffic areas.

These findings align with previous research studies (Boateng and Quan, 2014; Rahoo et al., 2018; Baba, 2019) that have also emphasised the potential of Web 2.0 technologies in enhancing library marketing efforts and fostering two-way communication with users. Social media networking sites have proven to be effective channels for promoting library services and resources, as they enable direct engagement with the library's target audience (Waral, 2020:15). These platforms provide opportunities for real-time interactions, content sharing, and feedback collection, which can significantly contribute to building stronger relationships between libraries and their users.

Furthermore, the study's findings support the idea that the adoption of Web 2.0 technologies is essential for staying relevant and effectively reaching today's tech-savvy student population.

The study's findings provide valuable insights into the potential benefits of incorporating Web 2.0 tools into library marketing strategies to increase students' usage of e-resources. By leveraging social media platforms, blogs, podcasts, and digital display screens, libraries can effectively engage students in the digital age and promote their valuable e-resources. These contemporary approaches complement traditional marketing efforts and enable libraries to foster meaningful interactions with their users, ultimately enhancing the overall user experience and increasing the patronage of e-resources. As technology continues to evolve, it will be crucial for libraries to adapt and harness the power of Web 2.0 technologies to remain at the forefront of effective library marketing in the digital era.

6.7.3.1 Marketing via websites and webpages

The findings of the study's sixth objective regarding innovative strategies for enhancing libraries' e-resource marketing efforts shed light on the participants' positive perception of using dedicated websites and webpages for the promotion of e-resources. Notably, the study revealed that participants expressed a favourable inclination towards using both the library website and the institution's website as effective avenues for marketing e-resources to students. This underscores the importance of utilising these websites as essential tools for effectively reaching and engaging students with the library's digital resources.

The recommendation to prioritise library websites as the primary marketing tool for e-resources aligns with the views of Bhardwaj and Jain (2016:121), who emphasise that library websites play a vital role in sharing the vision and mission of the library. A well-designed and regularly updated library website can serve as a convenient platform to announce yearly plans, new additions to the

collection, and new library initiatives. By building and maintaining a user-friendly website, libraries can systematically deliver information about subscribed resources to their users.

Abrams and Tidals (2020) further emphasise the importance of having a library website as a tool for advertising library products and services and disseminating information to users. In addition to traditional marketing efforts such as orientation programmes and personal contacts, having a website allows libraries to extend their reach and promote their resources and services to a wider audience. By utilising their websites, libraries can provide online literacy resources, online help, and copyright documents, enhancing the user experience and meeting the information needs of students in the digital age. However, the study also highlights that not all libraries fully utilise their websites for marketing library resources and services (Ruzegea & Msonde, 2021; Adomaa, 2021). Marketing of Special Library Services in Ghana: The Case of Ghana Atomic The study conducted by Kay (2019) toward improving access to e-resources for users at the University of Derby found that many university libraries did not fully leverage their websites for marketing purposes. Some websites lacked features such as online literacy resources, online help, and copyright documents, indicating missed opportunities to enhance user engagement and satisfaction. Additionally, the study revealed that a significant number of libraries did not conduct online surveys or engage in networking activities through their websites, missing out on valuable tools for gathering user feedback and building a strong online presence.

The study's findings and summary underscore the significance of utilising dedicated websites and webpages, including the library's website and the institution's website, as effective marketing tools for e-resources. Library websites provide an essential platform for communicating the library's vision and mission, promoting resources and services, and engaging users in the digital era. To fully capitalise on the potential of websites for marketing, libraries should prioritise regular updates, incorporate user-friendly features, and actively use the websites for online surveys and networking activities. By embracing these recommendations, libraries can enhance their e-resource

marketing efforts, effectively reach students, and provide them with valuable and engaging digital resources and services.

6.7.3.2 Mobile phone marketing and tailored mobile apps.

The study's findings on mobile phone marketing as an innovative strategy for enhancing libraries' e-resource marketing efforts reveal a positive perception among participants. The study's findings revealed that developing mobile apps for the dissemination of library resources and services will facilitate engagement with students to effectively market e-resources. Mobile apps will offer real-time communication through push notifications, personalised experiences for users, and convenient access to resources on the go. Integrating chatbots or live chat features within mobile apps can also enhance user support services, enabling easy communication between students and librarians.

These findings are in line with previous research by Burudi (2023), which found that mobile-based services have become extremely popular among users, especially among younger populations. Mobile technology has been successfully used to start library alert services, providing instant responses and contact with users. The study also confirms the economic effectiveness of SMS-based services for marketing library resources, as shown in Rivo and Umer (2022), which examined academic libraries' use of mobile devices in the provision of e-resources. Utilizing SMS-based services and shorter messages can efficiently deliver prompt information resources to users in a cost-effective manner, catering to users' information needs effectively, as highlighted by Abrams and Tidal's (2020) study on optimising library marketing with short universal resource locators (URLs).

Furthermore, the study emphasises the significance of email marketing, creating email lists, and sending newsletters to students to boost awareness and usage of e-resources. Incorporating URL links on library computers' login interfaces is also highlighted as an effective strategy to address

students' underutilization of electronic databases, making these resources more accessible and user-friendly. Additionally, the study underscores the importance of having dedicated webpages and web links for electronic resource access. Creating directories and instructional videos can effectively market e-resources and increase students' awareness of the available resources, aligning with previous research by Kennedy (2014) and Merande et al. (2021) on designing professional library websites optimised for marketing purposes to engage users effectively. In conclusion, the study's findings reveal the significant potential of contemporary and emerging information and communication technologies (ICTs) and digital marketing tools in promoting e-resources to students. By adopting these strategies, Ghanaian TU libraries can enhance their marketing efforts, increase students' engagement with e-resources, and raise awareness about the valuable resources available to them. To maximise the impact, libraries should tailor marketing messages to specific student segments and ensure that their websites and mobile apps are user-friendly and optimised for effective engagement. Ultimately, these efforts will support the academic success of students and contribute to the overall mission of the university.

6.7.4 Leveraging relationship management (RM) for marketing e-resources.

The study's findings on innovative strategies and tools for enhancing libraries' e-resource marketing efforts highlight the importance of relationship management (RM). In Section 5.9 of the previous chapter, the dominant views of respondents emphasised the need to consider e-resource provision as a service, guided by the 7Ps Marketing Mix model, which had a positive impact.

The study proposes that RM utilise ICT to facilitate easier contact and communication with library users and potential users, as suggested by Bhardwaj and Jain's (2016) study. Adomaa (2021) conducted a study at the Atomic Energy Commission in Ghana on the marketing of special library services. The study focused on identifying users' information demands, providing customer service satisfaction activities, and highlighting the importance of relationship management. The necessity of marketing, creating suitable library products and services, and a few marketing ideas are

examined in relation to libraries. According to the findings, users were dissatisfied with the library's collections because they were out of date, and 71% of them claimed that the irrelevancy of the items made it impossible for them to get the information they required. It was suggested that management set aside money for the development of the collection and that librarians use relationship marketing and social media as powerful marketing tools to promote the library's offerings. For libraries to adopt the RM approach effectively, they may need to align themselves with the 7Ps Marketing Mix for better guidance in establishing and managing relationships with students regarding the marketing of e-resources. These findings are consistent with Agyei and Ngulube's reports (2022). The study identified seven significant themes, including product, price, place, promotion, physical evidence, user satisfaction, and service quality. Four of these themes were validated by Kotler et al. (2018) and align with five of the 7 Ps Marketing Mix Model variants used in the study. The product, according to Kotler et al. (2018), can be a tangible or intangible good that satisfies customer needs. For libraries, it means providing the resources that users need and encouraging customer loyalty by consulting with faculty and students to determine the necessary resources for the academic year.

Pradhan (2014) emphasises that for librarians to effectively promote library resources, they must consider the four elements of marketing (the 4Ps): product, price, promotion, and place. However, Jamaludin et al. (2015) introduce the concept of the Product Service Value Marketing Mix Matrix, where service marketing, elements of marketing, and interaction are interwoven to achieve library goals. Librarians can utilise the 7Ps Marketing Mix as a guide in marketing their e-resources to students, focusing on elements such as product, price, place, promotion, physical evidence, user satisfaction, and service quality. By leveraging the 7Ps Marketing Mix, library professionals can prioritise communication and interpersonal relationships to create a culture of awareness and engagement around e-resources, leading to increased patronage and usage by students. Employing multiple communication channels can ensure that promotional messages reach a wide audience and generate higher engagement with e-resources. Personalized communication tailored to

students' interests, needs, and preferences can also enhance the effectiveness of library marketing efforts.

6.7.5 Outreach and exhibition programmes

The study's findings on innovative strategies and tools for enhancing e-resource marketing in TU libraries highlight the importance of leveraging outreach and exhibition programs. The study revealed, as part of the findings of study objective 5, the need for the library to devise user-friendly and innovative outreach and exhibition methods to market its electronic resources and services effectively. An effective strategy for promoting library resources to students is through exhibitions, as highlighted in studies by Harlow and Hill (2020) and Lasher and Denzer (2020). Exhibitions offer excellent opportunities for librarians to engage with the university community, including faculty, students, and researchers, while also entertaining, educating, and promoting the library's e-resources and facilities.

To maximise outreach efforts, libraries should develop programmes that align with various events such as seminars, symposia, sporting activities, lectures, debate competitions, local campus radio broadcasts, hall week celebrations, and students' representatives' (SRC) week celebrations. These events provide ideal platforms for mounting exhibitions to effectively promote the use of e-resources. When the university organises special events both on and off campus, the library must actively participate and demonstrate interest in promotional activities. Kay (2019) suggests that the library should use portable display booths at these events, just like other departments do, to showcase their resources and services. An analysis by Anslem (2018:13) revealed that some librarians declined invitations to university events, indicating the importance of librarians showing interest and awareness whenever any department organises a promotional event. By following the lead of other departments and actively participating in marketing events, librarians can emphasise their interest and increase their chances of being invited to future events.

Library outreach events, such as book clubs and author talks, can showcase e-resources and engage students. Encouraging feedback and testimonials builds trust, while incentives like gift cards and study aids enhance interest. Personalized recommendations, robust exhibitions, and campus radio promotion can enhance e-resource use. Utilizing user feedback helps libraries improve marketing strategies and identify areas for improvement. By embracing such innovative outreach and exhibition methods, TU libraries can enhance their e-resource marketing efforts, leading to increased awareness, engagement, and utilisation of the valuable resources and services they offer to the university community.

6.7.6 Collaboration and partnerships with faculty

The study's findings on innovative strategies and tools for enhancing e-resource marketing in TU libraries further highlight the importance of collaboration and partnerships with faculty. The study's findings showed that university libraries must start working together and forming alliances with faculties. This can assist libraries in promoting their e-materials and services to a larger audience by utilising the networks and resources of their partners. Such collaboration can help the library share its expertise and resources, as well as pool their resources and efforts together to create innovative marketing campaigns. Such partnerships can also lead to joint marketing initiatives and joint training programs, which can help improve awareness and use of e-resources among students. The results of this study are in line with those of earlier studies (Merande et al., 2021; Anslem, 2018), which stressed the importance of academic libraries working in partnership with other institutions and organisations to promote and make better use of e-resources. To make sure that everyone engaged is dedicated to the collaborative marketing initiatives, these collaborations and partnerships should be institutionalised through memoranda of understanding (MOUs) or other official agreements.

6.7.7 Provision of information literacy (IL)skills training for students

The findings of the study's sixth objective emphasise the importance of academic libraries offering information literacy skills training to students. This training should be made mandatory and recognised for academic credit, aiming to educate students on how to access and effectively use the available e-resources. The study's recommendations align with those made by Mirende et al. (2018), emphasising the need for teaching basic search skills and educating users on access policies.

To facilitate this training effectively, library teams can organise frequent training sessions, including one-on-one, virtual, and scheduled training requests. Involving faculty, staff, and students from various courses in these sessions can help raise awareness about the wealth of electronic resources available to students. Despite the potential benefits of the proposed strategies and tools for enhancing e-resource marketing efforts in Ghana's TUs, library and information professionals expressed concerns about the lack of resources and facilities needed to support the realisation of these goals. Addressing these concerns is crucial for library administrators to ensure the success of their marketing efforts.

6.7.8 Continuous training and development for library staff.

The findings of the sixth objective in the study shed light on the critical need for further training of library staff to effectively market library collections and services, particularly in the context of e-resources at technical universities in Ghana. One of the key and profound findings of the study was the recognition that continuous training and development of library staff on new and emerging marketing techniques is essential. This implies that to keep up with the ever-changing landscape of marketing and digital resources, library professionals need to be equipped with the latest strategies and tools. The study's results, as presented in Section 5.9 and summarised in Table 5.36 of the previous chapter 4, were further substantiated by qualitative data, emphasising the significance of providing professional development and training opportunities for library staff. By

enhancing their marketing skills through such initiatives, staff members can play a pivotal role in effectively promoting e-resources to students.

The technical university libraries in Ghana should give priority to funding ongoing training programmes for their employees, considering these findings. The emphasis of these programmes should be on providing librarians with modern marketing strategies and innovative ideas for efficiently interacting with accessible e-resources. Technical university libraries can establish a more dynamic and creative approach to marketing e-resources by giving library staff members more freedom through training and professional development. This will lead to enhanced student engagement and better e-resource promotion, which will ultimately result in greater use and appreciation of the priceless materials and services provided by the libraries.

The results of the sixth study's objective point out that varied, creative strategies are required if e-resources are to be successfully marketed to students in Ghana's technical universities. Libraries should employ both traditional and digital marketing techniques, including social media and Web 2.0 tools, use numerous channels of communication, and provide incentives to encourage students to use e-resources. Successful e-resource promotion also depends on a strategic marketing strategy, clear collection development policies, and ongoing staff professional development. Libraries can improve student learning overall by implementing these cutting-edge tactics to boost student engagement and e-resource usage.

Based on the findings, a framework of creative marketing strategies for e-resources, which the study proposes to achieve optimal student usage of the resources, will be necessary for the successful implementation of marketing campaigns. This study suggests a coherent and structured marketing strategy for e-resources. Not only will the suggested framework of strategies increase e-resource marketing among TU libraries in Ghana but also among other academic libraries throughout the world. The framework of the proposed tactics would further enhance the marketing of both e-resources and services, as well as other library resources. The study's proposed

framework might also be useful for libraries in other African nations with comparable operational environments to Ghana. A suggested framework of strategies for marketing e-resources is presented in the section that follows.

6.8 Proposed framework of strategies for marketing e-resources in academic libraries

The increasing adoption of electronic resources (e-resources) in academic libraries to meet the demands for digital access to information presents a unique challenge: effectively marketing these resources to students. This challenge arises from the absence of comprehensive theories and models tailored to marketing socially valuable information resources like e-resources in libraries. To address this gap, we propose an enhanced multilevel framework that draws from existing theories in library and information science research. The theoretical foundations of this framework stem from the Technology Acceptance Model (TAM 1, 2, and 3), the Unified Theory of Acceptance and Use of Technology (UTAUT), social marketing theory, and the 7 Ps Marketing Mix Model.

The theoretical underpinnings of the proposed enhanced framework are based on theories and models in library and information science research that are already in use, and they offer a reliable framework for promoting e-resources to students in higher education institutions. This framework offers a thorough and connected approach to improving the marketing of e-resources, ultimately enhancing students' academic experiences and research capacities. It does this by integrating the theoretical foundations of TAM, UTAUT, social marketing theory, and the 7 Ps marketing mix model. It is envisaged that this framework would open the door for additional study and development in the field of marketing library materials and services in international higher education institutions.

The foundation for comprehending users' acceptance and adoption of technology is the Technology Acceptance Model, which Davis et al. (1989) first proposed. TAM 1, 2, and 3 provide important details about the variables affecting students' opinions and attitudes toward e-resources. By

incorporating TAM into our framework, we can examine how helpful and user-friendly e-resources are considered by students and develop tactics to improve these aspects, thereby boosting acceptability and utilisation. Venkatesh et al.'s (2000) Unified Theory of Acceptance and Use of Technology (UTAUT) expands on TAM by including new components like performance expectancy, effort expectancy, social influence, and enabling factors. The intricate interplay of factors influencing students' intention to use and actual utilisation of e-resources can be better understood thanks to the proposed framework. By utilising UTAUT, we gain the ability to create customised interventions that address adoption hurdles, enhancing both the overall user experience and utilisation rates. Social Marketing Theory, introduced by Kotler (1975) and further developed by Andreasan (1997), emphasises applying marketing principles to promote socially beneficial behaviors. By incorporating this theory into our framework, we can develop compelling campaigns positioning e-resources as invaluable assets in students' academic and personal lives. The 7 Ps Marketing Mix Model, formulated by Zeithaml, Bitner, and Gremler (2013), offers a comprehensive approach to marketing strategy. The model encompasses product, price, place, promotion, people, process, and physical evidence. Integrating this model into our framework allows us to tailor strategies that cater to students' needs, preferences, and the unique academic environment.

The objective of the proposed framework is to provide a robust and comprehensive guide for future research in marketing e-resources in academic libraries, not only in Ghana but also beyond. By drawing from the theoretical foundations of TAM, UTAUT, Social Marketing Theory, and the 7Ps Marketing Mix Model, this framework aims to enhance the marketing of e-resources to students, fostering greater acceptance and optimal utilisation of these valuable resources. The components of the enhanced multilevel framework for marketing e-resources to students in institutions of higher learning comprise interconnected strategies to achieve the overarching objective of increasing e-resource acceptance and utilisation among students. Each component plays a crucial

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role in strengthening the marketing efforts of academic libraries. Figure 6.2 is a proposed framework for strategic marketing of e-resources to students in institutions of higher learning.

1) Strategy Planning

1) Set Goal	6) budgeting.
2) Understand	7) Timelines.
3) Target-audience	8) M and E
4) SWOT analysis	
5) Dev't Strategy	

2) Strategy development & implementation

a) User qualities

1) digital literacy
2) IL literacy skills
3) database navigation skills

b) Facilitating conditions

1) Social Influence
2) User experience
3) User environment

c) System qualities

1) Easy to navigate.
2) User Friendly interface
3) Search functionalities

3) **Influence perceive usefulness.**

4) **Influence perceive ease of use**

5) Positive reaction

1) Intention to use

6) Sustained improvement

1) **Improve use of resources**

Figure 6.2: Proposed framework of strategic for marketing e-resources to students in academic libraries (Researcher's construct, 2023).

6.8.1 Planning:

As depicted in the proposed strategic framework (referenced in Figure 6.2) for marketing e-resources in libraries, "planning" is the initial component that sets the foundation for the entire marketing approach. The planning phases involve the systematic process of defining goals, objectives, strategies, and actions necessary to achieve successful marketing outcomes for e-resources (Nagra's 2015:115). It lays the groundwork for a well-coordinated and effective marketing campaign, ensuring that all efforts are aligned with the overall objectives of the library and the needs of the target audience, i.e., the students in this case. Planning forms a crucial component of the proposed strategic framework for marketing e-resources in libraries, and the elements are explained as follows:

1) **Goal setting**: The planning phase begins with clearly defining the overarching goals of the marketing campaign. These goals could be to increase e-resource usage, improve student awareness about available resources, enhance the user experience, or boost student engagement with library services. These goals provide direction and purpose for the marketing efforts.

2) **Understanding the target audience:** Effective planning requires a thorough understanding of the target audience, in this case, the students. This involves gathering information about their preferences, needs, challenges, and digital behaviours related to accessing and using e-resources. Understanding the target audience helps in tailoring marketing strategies to resonate with their interests and requirements.

3) **SWOT analysis:** A SWOT (strengths, weaknesses, opportunities, and threats) analysis of the library's e-resources can be conducted during the planning phase. This analysis helps identify the strengths and unique selling points of the e-resources, potential weaknesses that need to be addressed, opportunities for improvement and expansion, and potential threats or challenges that may hinder successful marketing.

4) **Strategy development:** Based on the goals, target audience insights, and SWOT analysis, the planning phase involves developing a comprehensive marketing strategy. This strategy outlines the key approaches and tactics to promote e-resources effectively. It defines how the library will leverage its strengths, address weaknesses, capitalise on opportunities, and mitigate threats.

5) **Budget and resource allocation:** Planning also involves determining the budget and allocating the necessary resources for implementing the marketing strategy. This may include funds for advertising, technology, training, staffing, and any other essential requirements.

6) **Timeline and milestones:** During the planning phase, a timeline is established to set the pace of the marketing campaign. It includes specific milestones and deadlines for each stage of the marketing process, allowing for progress tracking and ensuring that the marketing activities stay on schedule.

7) **Monitoring and evaluation:** Planning also includes defining metrics and indicators to measure the success of the marketing efforts. These can include metrics like website traffic, resource usage statistics, student feedback, and engagement levels. Regular monitoring and evaluation help in identifying what strategies are working well and what might need adjustments or improvements.

8) **Flexibility and adaptability:** Lastly, a good planning process acknowledges the need for flexibility and adaptability. The marketing landscape is dynamic, and unforeseen challenges or opportunities may arise during the campaign. A well-thought-out plan allows for adjustments and modifications to optimise the marketing approach as needed.

In conclusion, planning is a crucial component of the proposed strategic framework for marketing e-resources in libraries. It provides a structured and organised approach to guide the marketing

efforts, ensuring they are purposeful, targeted, and capable of achieving the desired outcomes in reaching and engaging the student audience effectively.

6.8.2 User qualities

User qualities regarding students' utilisation of e-resources refer to the specific characteristics, skills, and competencies possessed by students that influence their ability and willingness to access and use digital library resources effectively. These qualities play a crucial role in determining how students interact with e-resources, their level of engagement, and the overall success of e-resource utilization. It is apt that the marketer understands and address user qualities to cater for the needs and preferences of the student population. Some user qualities of focus are as follows:

1) Develop and enhance students' digital literacy skills through training sessions, workshops, and tutorials.

2) Promote information literacy among students to enable them to critically evaluate and effectively use e-resources.

3) Provide training on database search techniques and familiarize students with available search tools.

4) Students who are self-motivated and curious about expanding their knowledge are more likely to explore e-resources extensively. They actively seek out information and resources that complement their studies, fostering a proactive approach to e-resource utilisation.

Addressing user qualities involves providing appropriate training, workshops, and support services to enhance students' digital and information literacy skills. It also involves making e-resources user-friendly and easily accessible to students of varying technological proficiency. By understanding and considering user qualities, libraries can optimise their e-resource marketing strategies and tailor their offerings to meet the diverse needs of the student population effectively.

6.8.3 Facilitating conditions.

Facilitating conditions in the context of marketing e-resources refer to the various factors and elements that create an enabling environment for students to access, engage with, and utilise digital library resources effectively. These conditions play a crucial role in encouraging and supporting students in their e-resource usage journey. By addressing these facilitating conditions, libraries can enhance the overall user experience, increase user satisfaction, and ultimately drive higher adoption and utilisation of e-resources among students.

1) Libraries should use communication channels like email newsletters, social media, websites, posters, and campus announcements to raise awareness and inform students about e-resource availability.

2) Create a conducive environment within the academic library that encourages students to explore and use e-resources.

3) Continuously improve the user experience by seeking feedback, addressing issues promptly, and making the interface user-friendly.

4) Tailor marketing approaches based on the characteristics and preferences of the student population (demographic Features)

5) Awareness campaigns emphasize e-resources' importance in academic pursuits.

6) Remote access to e-resources is crucial for students' remote access to campus resources.

6.8.4 Social influence

Social influence, as a component of the framework for marketing e-resources in libraries, refers to the impact of interpersonal relationships, recommendations, and support from various social sources on students' decisions and behaviours regarding the use of digital library resources. Leveraging social influence can significantly enhance the adoption and utilisation of e-resources among students, as individuals tend to be influenced by the opinions and experiences of others within their social circles.

a) Train library staff to assist students effectively, answering questions and guiding them in using e-resources.

b) Encourage lecturers to recommend specific e-resources relevant to their courses.

c) Promote e-resources through positive experiences and influencer marketing, involving academic bloggers, experts, and students to generate interest and word-of-mouth promotion.

d) Sharing testimonials or success stories from students who have benefited from using specific e-resources can be a compelling form of social influence. Positive feedback from peers can motivate others to explore and utilize similar resources.

By leveraging social influence, libraries can create a network effect, where students' positive experiences with e-resources lead to further recommendations and usage among their peers. This organic spread of interest and engagement can contribute to the sustainable growth and utilisation of digital library resources. Additionally, fostering a sense of community and support around e-resources can enhance students' overall satisfaction and encourage them to view these resources as valuable assets in their academic journey.

6.8.5 Qualities of the information system

Qualities of the information system, within the context of the framework for marketing e-resources in libraries, refer to the features, attributes, and capabilities of the digital platform or system through which e-resources are accessed and utilized. These qualities directly impact the user experience, ease of access, and overall satisfaction of students when interacting with e-resources. Ensuring that the information system meets certain standards and user expectations is essential for successful marketing and utilisation of e-resources. The following outlines a few examples of maintaining the qualities of the information system.

a) Ensure the reliability, accessibility, and responsiveness of the e-resource platform.

b) An intuitive and easy-to-navigate interface that enhances the overall user experience.

c) Reliability of the IS, ensuring that e-resources are available and accessible to students consistently without frequent downtimes or technical glitches.

d) Accessibility: easily accessible to all users, including those with disabilities.

e) User-Friendly Interface: A user-friendly interface such as visually appealing

f) Effective search functionalities such as filters, and sorting options to refine search results.

g) Providing personalized features, such as, saved preferences, and recommendations based on past usage, can enhance students' engagement with e-resources.

h) Responsive Design to ensure a consistent and experience across different platforms.

By focusing on the qualities of the information system, libraries can create a positive and seamless experience for students when accessing and utilising e-resources. A well-designed and user-friendly information system enhances the perceived value of e-resources, encourages repeated usage, and supports the overall success of marketing efforts to promote digital library resources effectively.

6.8.6 Perceived usefulness of e-resources

Perceived usefulness of e-resources, in the context of the framework for marketing e-resources in libraries, refers to students' subjective evaluation of the extent to which these digital resources are beneficial and helpful in supporting their academic pursuits and research needs. It is a critical factor that influences students' intentions to use and continue using e-resources. When students perceive e-resources as valuable and advantageous, they are more likely to actively engage with them and integrate them into their learning and research processes. The practical benefits and real-world applications of e-resources to demonstrate their relevance to students' academic pursuits are realised when the following are ensured:

a) Relevance to academic needs

b) Quality and credibility

c) Breadth of coverage

d) Ease of access

e) Timesaving

f) Effectiveness in problem solving.

It is important for libraries and institutions to actively promote the perceived usefulness of e-resources through targeted marketing efforts and educational initiatives. By emphasizing the practical benefits and advantages of these resources, addressing students' specific needs, and providing ongoing support, libraries can enhance the perceived usefulness and encourage greater adoption and utilization of e-resources among students. Additionally, seeking feedback from users and continuously improving the quality and relevance of the resources can further reinforce their perceived usefulness and contribute to a positive user experience.

6.8.7 Perceived ease of access and use of resources

Perceived ease of access and use, in the context of the framework for marketing e-resources in libraries, refers to students' subjective evaluation of how effortless and straightforward it is to find, access, and utilise digital library resources. This perception plays a significant role in determining students' willingness to engage with e-resources. When students perceive the access and use of e-resources as easy and convenient, they are more likely to embrace these resources as valuable assets in their academic journey. Simplifying access to e-resources through streamlined authentication processes, user-friendly interfaces, and the offer of guidance and support will ensure students can easily navigate and utilise e-resources from the library. These are some of the ways to ensure that there is perceived ease of access.

6.8.8 Expected outcomes (improve use of resources)

1) Implementing the framework is expected to positively influence students' intentions to use e-resources from the academic libraries, leading to improved access and utilisation.

2) A well-implemented strategy will result in sustained improvements in marketing e-resources to students in technical universities and similar institutions of higher learning in Ghana.

6.8.9 Conclusion

This comprehensive framework offers a guideline for enhancing the marketing of e-resources to students in institutions of higher learning. By implementing this strategy, stakeholders involved in the provision of library and information resources in Ghana can significantly improve the usage of e-resources among students, leading to enriched learning experiences and academic achievements. The successful implementation of this framework requires collaboration and involvement from various stakeholders, including librarians, faculty, administrators, and students themselves. Ongoing monitoring and evaluation of the marketing strategies and user feedback are essential to refine and adapt the approach as needed. Additionally, a context-fit strategy that considers the specific challenges and opportunities of the institution and its student population is crucial for the sustained improvement of e-resource marketing efforts.

By embracing this framework, libraries in institutions of higher learning can empower students with the necessary skills, support, and motivation to fully utilise the available e-resources. This, in turn, enriches the learning experience, supports academic success, and contributes to the overall advancement of knowledge sharing in the academic community. The proposed strategic framework lays the foundation for sustainable improvement in marketing e-resources and fosters a culture of knowledge exploration and utilisation among students in technical universities and similar institutions of higher learning.

6.9 Summary of Chapter 6

Chapter 6 presents a comprehensive discussion and interpretation of the research findings obtained from the data analysis and presentation in Chapter 5. The chapter is organised around the objectives stated in Chapter 1, with reference to the relevant theories and literature discussed in Chapters 2

and 3, respectively, and the data presented in Chapter 5. The first objective of the study, which aimed to identify the main causes of students' low use of e-resources, was thoroughly examined and interpreted. The findings shed light on various factors contributing to this issue, including students' inadequate searching abilities, a lack of awareness and understanding of database usage, limited support from library staff, and insufficient access to computers within the library. Time constraints, lack of motivation, unfamiliarity with subject-specific databases, and limited access to technology, especially among students from lower socioeconomic backgrounds, were also found to influence low e-resource utilisation.

The second objective delved into the prevailing methods of marketing e-resources to students by TU libraries in Ghana. The findings revealed common approaches used for promoting e-resources, providing insights into the current marketing practises within the academic setting. Furthermore, the third objective explored contemporary and emerging strategies and approaches for promoting and marketing e-resources to students. The study discussed innovative strategies that could be adopted by TU libraries to effectively engage students and enhance e-resource usage.

The fourth objective focused on understanding the factors influencing students' behavioural intentions to use e-resources. The findings provided valuable insights into students' perceptions and attitudes towards e-resources, shedding light on the determinants of their utilisation behavior. Additionally, the chapter discussed the skill sets and abilities required by library professionals to effectively market e-resources to students. It emphasised the importance of having well-trained library staff with the necessary expertise to support and guide students in accessing and utilising e-resources effectively. The study also proposed innovative strategies for TU libraries in Ghana to approach their marketing efforts, aiming to improve students' awareness and utilisation of valuable e-resources.

Chapter 6 generally presents a comprehensive analysis and discussion of the research findings, addressing each study objective in detail. The chapter provided valuable insights into the factors

influencing e-resource utilisation among students and discussed strategies to enhance their engagement with academic databases. The subsequent chapter, Chapter 7, provides a summary of the study's findings, recommendations, and conclusion, drawing on the insights gained throughout the research.

CHAPTER 7:

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The preceding Chapter 6 extensively presented interpretations and discussions of the study's findings. The findings were presented and analysed in the context of the study's objectives, using the collected data as presented in Chapter 5. In Chapter 7, a thorough, consolidated overview of the study's main findings, conclusions, and recommendations is provided. This chapter is critical because it summarises the findings of the study, highlights the salient conclusions, and makes recommendations.

7.2 Summary of the findings of the study

This section presents a summary of the findings of the study. The main aim of the study was to explore appropriate strategies and tools for the marketing of e-resources to students in technical university libraries in Ghana to improve the students' utilisation of these resources. The study found various findings regarding each of the study objectives and each research question. The study's findings encompassed each research question and objective.

The study's findings underscored the prevalence of students' limited utilisation of e-resources from available academic databases within Ghana's technical university libraries. Key contributors to the low student utilisation include insufficient awareness, inadequate marketing efforts, deficient information literacy skills leading to ineffective searching and navigation of the databases, unfamiliarity with relevant databases, and limitations in computer availability for concurrent use at the libraries. Additionally, students' overreliance on lecture materials rather than e-resources further contributed to the trend of low utilisation of the resources. Also, students encountered distinct challenges in using e-resources, including difficulties in navigation, search functionality, query formulation, resource valuation, and employing specialised characters like Boolean search

operators. The primary motivation for students accessing e-resources was assignment completion, with a smaller number engaging in academic research, self-study, special project research, and final-year projects. The main sources for e-resource access were open internet platforms such as Google, Wikipedia, and other similar sites.

The study's findings also emphasised the prevailing use of traditional and conventional marketing methods within technical university libraries. These approaches to marketing predominantly revolved around print-based avenues, such as the dissemination of information via notices, posters, signage, print-oriented user manuals, and the incorporation of these tactics into new student orientation programmes.

Nonetheless, the study notably illuminated the substantial potential inherent in embracing contemporary strategies alongside emerging technologies and tools, all of which constitute a powerful arsenal for effectively promoting and marketing e-resources to students. Notable among these strategies and technological advancements is the strategic utilisation of both library and institutional websites as robust platforms for immersive marketing engagements. Equally noteworthy are a multitude of ICT-driven and digitally anchored approaches, including the dynamic realm of Web 2.0 technologies and the expansive landscape of social media networks. This is further enriched by avenues like online-based webinars, captivating videos, illuminating demonstrational tutorials, engaging podcasts, and a strategic foray into mobile phone marketing. The latter particularly accentuates the development of tailored mobile apps, meticulously crafted to impeccably market these digital resources. Complementing these methods are the strategic curation of targeted email lists catering to students, the seamless integration of SMS messaging, and the artful placement of URL links thoughtfully positioned on library desktop monitors.

Moreover, the study unveiled several factors influencing students' intentions to use e-resources, encompassing marketing efforts, social influences, information system characteristics, personal IT and information literacy skills, self-motivation, ease of use, and perceived resource usefulness.

Students' perceptions of library staff support played a role in their resource usage plans, while social influences also shaped their intentions. To effectively market e-resources, library staff required competencies such as information retrieval and information literacy skills, effective interpersonal and communication abilities, academic and professional proficiency in promoting e-resources, research and reference skills, and strong customer service aptitude.

The findings further emphasised the crucial necessity for TU library professionals to possess a range of proficiencies to effectively promote e-resources. This skill set includes academic and professional expertise, digital literacy, information literacy, research skills, contemporary ICT knowledge, marketing familiarity, and the adaptability of traditional LIS skills to the digital landscape. Moreover, effective communication, relationship-building, and exceptional customer service are key. These combined competencies empower TU library professionals to orchestrate targeted and impactful e-resource marketing campaigns, enriching the digital-age learning experience.

The study further explored innovative approaches for effectively marketing available e-resources. The findings of the study's sixth objective shed light on creative mechanisms to invigorate e-resource marketing within TU libraries, including the adoption of robust collection development policies, calculated marketing plans, and smart utilisation of Web 2.0 technologies consisting of social media and dedicated digital platforms in the likes of blogs, wikis, RSS feeds, and podcasts. Among these, relationship management (RM) emerged as a potent instrument for propagating the relevance and merits of e-resources. Libraries will also harness strategic partnerships with the faculties and departments, initiate outreach programs, and foster both student and staff competencies, which have the potential to solidify and enrich TU libraries' academic experiences through comprehensive e-resource provision. These findings are further comprehensively summarised in subsequent subsections based on the study's objectives.

7.2.1 Summary of findings of the study's first objective

The first objective of the study was to assess the causes of low student utilisation of e-resources from TU libraries in Ghana. The research aimed to identify factors contributing to the phenomenon of low student usage of e-resources from academic databases available at TU libraries. The study gathered perspectives from registered student users of the libraries and library and information professionals working in these institutions.

The findings revealed a combination of factors contributing to this phenomenon, including inadequate awareness and knowledge of how to use databases, a lack of e-resource marketing, poor searching and navigational skills, insufficient staff support, and limited access to computers in the library. Additionally, user training, curriculum integration, relevance of e-resources, compatibility issues, and reliance on alternative sources like Google were identified as contributing factors.

The research findings indicated that the identified factors contributing to low student utilisation were not unique to TU libraries in Ghana but were consistent with reports from earlier research at other African universities. Lack of user awareness, information literacy skills, and integration of e-resources into the academic curriculum were common challenges faced in the developing world. The findings underscored the critical factors affecting e-resource usage among students, emphasising insufficient awareness, marketing, searching abilities, staff support, and computer availability. The qualitative insights provided a deeper understanding of the root causes of the identified issues.

The study's findings are significant in guiding future efforts to improve students' access to and utilisation of e-resources in Ghanaian technical universities. By addressing the identified factors, academic libraries and institutions can enhance students' academic experience, research capabilities, and overall academic performance.

7.2.2 Summary of the findings of the study's second objective

The second study's objective was to assess the current marketing strategies employed by technical university libraries. The study's findings revealed a significant dependence on traditional and conventional methods (marketing via print-based communication channels, orientation talks and tours, and referrals from colleagues and lecturers) of marketing e-resources to students within Ghana's TU libraries. Examples of the predominant print-based communication channels are notices, posters posted at vantage locations within the library premises, brochures, flyers, and orientation talks, while newer and more effective strategies like social media marketing and email marketing were underutilized.

The findings of the study align with previous research in Ghana and other African universities, which also highlighted the reliance on traditional marketing approaches and the lack of attention to new media technologies for marketing e-resources.

The study's results emphasise the importance of integrating contemporary and emerging digital technologies into marketing strategies to enhance students' engagement and utilisation of e-resources. The study's findings have implications for TU libraries, suggesting the need to adopt a multi-faceted marketing approach. While traditional methods have shown some success, libraries must complement these strategies with more modern and digital techniques to reach a wider audience. Emphasizing faculty and peer influence can also play a vital role in promoting e-resources among students. Future research should focus on understanding students' preferences and expectations from library promotions to develop targeted marketing strategies. By adopting a balanced approach that incorporates both traditional and modern marketing strategies, libraries can enhance students' utilisation of e-resources and improve their overall academic experience. The study calls for libraries to adapt to contemporary trends and leverage digital technologies to reach and engage students effectively.

7.2.3 Summary of the findings of the study's third objective

The third objective of the study focused on identifying contemporary and emerging strategies for marketing e-resources to students in TU libraries in Ghana.

The study underscored the substantial potential inherent in these modern approaches, emphasising the efficacy of certain emerging technologies and tools in effectively promoting e-resources to students. Of notable significance was the utilisation of library and institutional websites as pivotal platforms for marketing engagement. Equally noteworthy were a range of ICT and digital-based techniques, including the leverage of web 2.0 technologies, social media networks, online webinars, videos, demonstrational tutorials, podcasts, and the creation of customised mobile apps tailored to marketing digital resources. Additionally, the study highlighted the utility of targeted email lists and SMS messaging, along with strategically positioned URL links on library desktop monitors.

The study's findings underscored the imperative to harness these contemporary and emerging strategies, aiming to augment e-resource visibility and accessibility across a broader audience. Notably, the study accentuated the significance of Web 2.0 technologies and social media marketing, featuring elements like instant SMS messages, URL links, audio and video tutorials, and resource projection through websites. Implementation of these strategies has the potential to substantially elevate e-resource awareness, engagement, and utilization, thereby fostering academic growth and catering to research and learning requirements.

Furthermore, the study highlighted the necessity for libraries to overcome financial and resource constraints when implementing these modern marketing strategies. It also emphasised the critical role of digital literacy proficiency among library staff in enabling the effective deployment of Web 2.0 technologies and other digital tools for e-resource marketing.

The third study's objective findings offer valuable insights into effective e-resource marketing strategies, with a particular focus on the prowess of Web 2.0 technologies and social media networks. By embracing these innovative methodologies, libraries within TU and other academic institutions in Ghana can elevate student awareness, engagement, and utilisation of electronic resources, ultimately fortifying academic accomplishments and enriching the broader learning experience.

7.2.4 Summary of the findings of the study's fourth objective

The study's fifth objective explored the factors influencing students' behavioural intentions to use e-resources. The research findings provided valuable insights into students' perceptions and attitudes towards these resources. The results indicated that students perceived various factors, including marketing strategies, information retrieval skills, awareness of resources, ease of access, quality or value of resources, support from library staff, and influence from peers and lecturers, as moderately important in shaping their intentions. It utilised the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Acceptance Model (TAM) as underlying theories. The fifth study's objective findings offer a comprehensive understanding of the factors influencing students' behavioural intentions to use e-resources in university libraries. The research provides valuable guidance for libraries in tailoring their marketing strategies, improving infrastructure and support, and enhancing the relevance and usability of e-resources to promote greater usage among students, ultimately contributing to a more efficient and productive learning experience.

7.2.5 Summary of the findings of the study's fifth objective

The study's fifth objective examined the competencies of library professionals in marketing e-resources to students. The study's findings strongly emphasise the indispensable requirement for library professionals in TU libraries to possess the exacting proficiencies essential for adeptly marketing e-resources to students. This range of competencies encompasses academic and

professional prowess, fluency in computer utilisation and digital literacy, and a robust grounding in information literacy skills. This assemblage extends to refined research and reference capabilities, a nuanced command of both current and emerging ICTs and digital technologies, practical mastery of marketing and promotional strategies, and the agility to seamlessly transition traditional library and information science (LIS) skills into the dynamic electronic milieu. Notably, vital skills such as effective communication, fostering interpersonal connections, and delivering exceptional customer service cannot be underestimated. These multifaceted competencies coalesce, empowering library professionals in TU libraries with the prowess requisite for precisely targeted and impactful marketing campaigns tailored for e-resources. By acquiring and continuously honing these competencies, library professionals can assume a pivotal role in facilitating students' access to and utilisation of e-resources, thereby elevating the overall learning experience in the digital era.

7.2.6 Summary of the findings of the study's sixth objective.

The sixth study objective focused on identifying innovative strategies for marketing e-resources to students at Ghanaian technical universities (TUs). The findings revealed several key strategies that libraries at TU may use to spark students' interest in using the electronic resources available through their databases. Delving into the study's sixth objective findings yielded a spectrum of key innovative approaches to marketing e-resources to students, and central to these insights was the pressing requirement for TU libraries to establish a comprehensive collection development policy framework. This framework is poised to strengthen the meticulous acquisition and adept management of electronic resources, laying a strong foundation for effective marketing and usage.

Additionally, the study underscored the indispensable value of formal marketing planning strategies. Amplifying these efforts were the dynamic capabilities of contemporary Web 2.0 tools, particularly through the avenue of social media networking and related digital platforms in the likes of blogs, wikis, RSS feeds, and podcasts dedicated to the purpose of marketing the resources

to students. Moreover, the study illuminated the potency of harnessing library and institution websites, dedicated webpages exclusively dedicated to the promotion of e-resources, and a dedicated focus on the creation of bespoke mobile apps. These applications would seamlessly facilitate both marketing endeavours and the provision of e-resources to the student body.

Expanding on the ingenious methods for bolstering e-resource marketing, the study unveiled a tapestry of strategies. Among these, relationship management (RM) emerged as a potent instrument for broadcasting e-resources' merits. Strategic outreach and exhibitions formed an integral part of this innovative repertoire, while strategic collaborations with academics, faculties, and departments unveiled untapped avenues for heightened visibility. Further cementing these strategies was an approach to providing students with structured library instruction, specifically targeting information literacy (IL) training and efficacy. Concurrently, affording library staff the opportunity for continuous training and development proved pivotal. This became especially pronounced in the realm of electronic-based library resources and services, aligning staff expertise with contemporary strategies to effectively market these resources.

7.2.7 A summary of the study's proposed framework's findings

The study provides a framework (referenced in Section 6.8 of the previous chapter 6) for marketing e-resources to students in academic libraries of institutions of higher learning like the Ghanaian TUs to enhance the marketing initiatives of such libraries. The comprehensive and integrated framework for marketing e-resources to students in higher education institutions pulls on diverse theoretical underpinnings to strengthen academic libraries' marketing initiatives.

The framework is made up of several parts, each of which is essential to bolstering the marketing strategy and attaining the goal of improving student acceptance and use of e-resources. foundation for helping universities increase the exposure, usability, and accessibility of their priceless online resources among students. This results in a successful marketing plan for these resources.

Strategic planning, strategy development, and implementation are all included in this framework, which also places a strong emphasis on important pillars. These pillars include improving staff and student user attributes, upholding the traits that characterise success, and addressing facilitating aspects including social influence (impact from lecturers and peers), environmental variables, and user experience. This cluster of efforts is ready to effectively convey the importance and worth of the resources while ensuring their usability.

The underlying inference is that these actions will result in a positive outcome, encouraging learners to make use of the available resources. Academic libraries can empower students to fully utilise the variety of accessible e-resources by adopting this framework and customising marketing strategies. This will support students' academic successes and promote the sharing of knowledge within the academic community. Collaboration between stakeholders is, however, crucial for the successful implementation of this framework. A routine of constant monitoring and evaluation is also necessary, allowing for the improvement and adaptation of marketing plans as circumstances demand.

7.3 Conclusion

The conclusions drawn in this section are based on the research findings summarised in Section 7.2. These findings align with the study's objectives and themes derived from the data analysis and results.

7.3.1 Conclusions on factors causing students' underutilization of e-resources.

The issue of low utilisation of e-resources among students in Ghanaian technical universities is a concern for library management. The summarised study findings presented in Subsection 7.2.1 and in reference to the study's first objective (1.5.1), which aimed to identify the main factors contributing to students' low use of e-resources, revealed a multifaceted factor responsible for the

underutilization of e-resources from academic databases within these TU libraries. Referencing objective 1.5.1 and the summarised findings 7.2.1, the study concludes as follows:

7.3.1.1 limited awareness and familiarity with database usage

The research results summarised in Section 7.2.1 highlight the problem of limited student awareness and familiarity with database usage, which has a significant impact on students' perceptions of the value of and motivation for using e-resources. Lack of awareness of library databases reveals a lack of desire and sense of utility for using e-resources, as well as inadequate knowledge on how to access and utilise them efficiently, which results in underutilization of these resources. This issue emphasises how inadequate student knowledge and experience with database usage affects their understanding of and motivation to use electronic resources.

7.3.1.2 Lack of effective marketing of e-resources

The research findings summarised in Section 7.2.1 highlight the issue of insufficient e-resource marketing to students, which has a significant impact on students' knowledge and interest in utilising e-resources. The lack of marketing, leading to a lack of promotion and publicity of TU Libraries' resources, causes students to be unaware of important scholarly materials. As a result, the libraries witness an underutilization of e-resources. This therefore emphasises the need for better planned marketing actions to boost publicity, promote, and persuade students to use the e-resources.

7.3.1.3 Insufficiencies in search and navigation skills

The research results summarised in Section 7.2.3 draw attention to the problem of inadequate search and navigational skills, which have a big impact on students' capacity to access online resources. Students' ability to access online resources is substantially impacted by their lack of search and navigational abilities. This shows that students have trouble conducting effective searches, which hinders their capacity to find pertinent information. This barrier prevents students

from properly utilising and interacting with valuable resources, highlighting the need for improved training programmes developed to improve students' searching and navigational abilities.

7.3.1.4 Inadequate staff support

The research findings summarised in Section 7.2.3 further highlight the phenomenon of inadequate staff support for students seeking e-resources from libraries. Inadequate staff support significantly impacts students' access to e-resources from libraries, hindering their ability to explore and navigate platforms. The lack of guidance and direction hampers students' willingness to explore and utilise resources, emphasising the need for enhanced staff support to encourage greater engagement.

7.3.1.5 Restricted access to library computers

The research results described in Section 7.2.3 draw attention to the issue of limited access to library computers, which has a big impact on how easily students may access e-resources. It is vital to address this problem in order to encourage students to use e-resources more frequently. This barrier makes it difficult for them to engage with these materials. This highlights the requirement for improved provision and access to computer devices by students.

7.3.1.6 Reliance on alternative platforms like Google, open internet websites.

The research findings summarized in section 7.2.3 highlight students' overreliance on alternative platforms like Google and open internet websites for accessing e-resources. This reliance is driven by convenience and ease of use, but can overlook valuable, specialized, and curated information in e-resource databases. This highlights the need to redirect students' attention towards comprehensive academic content through library databases.

7.3.1.7 Overreliance on handouts of lecture notes

The conclusion drawn based on the summarised research findings regarding overreliance on handouts and lecture notes highlights a prevalent pattern where certain students excessively rely on handouts and lecture notes provided by their educators. This dependency on these materials often leads to a neglect of exploring the wider array of information accessible through e-resources. By limiting themselves to these limited resources, students overlook the potential for a more comprehensive and diverse range of information present within e-resource databases. Consequently, the overreliance on handouts and lecture notes contributes to the underutilization of e-resources, necessitating a shift in students' approach to accessing a broader scope of academic content.

7.3.1.8 Lack of adequate training of students

The research highlights the importance of providing effective user training to students in navigating e-resource databases and integrating e-resources into the curriculum. Challenges in Ghanaian technical university libraries, such as inadequate user awareness and information literacy skills, are consistent across developing-world institutions. These insights can guide future initiatives to enhance students' engagement with and utilisation of e-resources, fostering a more resourceful and empowered student body. Addressing these factors can pave the way for improved academic journeys and provide a roadmap for nurturing a more resourceful and empowered student body in the context of e-resource utilisation.

7.3.2 Conclusions regarding current strategies for marketing e-resources at Ghanaian TU libraries.

This subsection corresponds to Objective 1.5.2, which aimed to uncover current strategies for marketing e-resources at Ghanaian TU libraries. Drawing from the summaries of the findings as presented in Section 7.2.2, noteworthy insights emerged from the investigation of the study's

second objective. The study's findings revealed a significant dependence on traditional and conventional methods (marketing via print-based communication channels, orientation talks and tours, and referrals from colleagues and lecturers) of marketing e-resources to students within Ghana's TU libraries. These conclusions drawn from these methods are summarised as follows:

7.3.2.1 marketing via print-based communication channels

The research findings show that libraries primarily use print-based communication channels like notices, signage, brochures, and flyers to promote resources to students. This strategy bridges the gap between digital resources and students' physical experiences, creating awareness of electronic academic materials and effectively disseminating information about digital resources. However, while print-based communication channels have their merits, relying solely on them to promote e-resources to students in the TU library could hinder successful marketing efforts. A balanced approach that incorporates both print and digital channels, considering the preferences and behaviours of the target audience, would likely yield more effective results in promoting and increasing the utilisation of e-resources among students.

7.3.2.2 Orientation talks and tours.

The summarised research findings further indicated that the TU libraries heavily relied on orientation talks and tours to market e-resources among students. These tailored talks and guided tours introduce students to accessible e-resources and their advantages, fostering proactive involvement in their academic journey. However, while orientation talks and tours can be effective in creating initial awareness and engagement, they might not sustain the interest and utilisation of e-resources over the long term. To maximise the success of e-resource marketing campaigns, it's essential to complement these sessions with ongoing digital communication, interactive online resources, and reminders to ensure continuous engagement and utilisation among all students.

7.3.2.3 Referrals from colleagues and lecturers

The summarised research findings further revealed the library's substantial reliance on referrals from colleagues and lecturers as a pivotal strategy for promoting e-resources among students and underscored a significant avenue of engagement. But while referrals from colleagues and lecturers can be a powerful endorsement for e-resources, there are challenges associated with this strategy. To enhance the success of the library marketing program, it's important to complement referrals with a comprehensive approach that includes diverse marketing channels, ongoing communication, and engagement strategies that cater to the entire student population. This ensures that all students have equitable access to information about e-resources and encourages sustained engagement over time.

7.3.3 Conclusions regarding contemporary strategies for marketing e-resources at TU libraries

This subsection aligns with Objective 1.5.3, which sought to uncover emerging and modern strategies for promoting e-resources within Ghanaian TU libraries. Drawing upon the summarised findings presented in Section 7.2.3, noteworthy insights arise from the exploration of the study's third objective. The investigation revealed a range of contemporary and innovative strategies employed to market e-resources within Ghanaian TU libraries, encompassing the following approaches:

7.3.3.1 Leveraging emerging Web 2.0 technologies and tools.

A proactive and forward-looking strategy for marketing e-resources is stressed in the findings based on the research findings summarised in Section 7.2.3 regarding the library's adoption of Web 2.0 technologies and tools to leverage its marketing efforts. The incorporation of social networking websites, blogging, podcasting, RSS feeds, wikis, and other Web 2.0 technologies and tools are

notable revelations. These results highlight the opportunity for the library to use cutting-edge online platforms to promote improved engagement and access to e-resource content.

7.3.3.2 utilising institutional and library websites.

The conclusion reached from the research findings summarised in Section 7.2.3 about the library's use of institutional and library websites highlights a proactive and forward-thinking approach to e-resource promotion. It shows a path for the library's dedication to building a vibrant online presence that acts as a focal point for students to access a variety of scholarly materials. The efficient use of websites demonstrates a way for the library to keep up with technological advancements and offer a platform that is easy for students to use to find and interact with e-resources.

7.3.3.3 Emphasising mobile phone marketing and tailored mobile apps.

A strategic and modern approach to promoting e-resources is highlighted by the conclusion reached from the research findings summarised in Section 7.2.3 regarding the library's use of mobile phone marketing and the development of customised mobile apps to push the marketing drive of e-resources among libraries. It emphasises the libraries' recognition of students' widespread usage of mobile devices and their readiness to consider such modern strategies to connect with students through channels that suit their technological preferences. This further illustrates the readiness on the part of the libraries to dedicate their efforts to providing students with convenient, tailored ways to interact with online materials that are in line with contemporary communication trends.

7.3.3.4 Implementing targeted SMS marketing.

The conclusion drawn from the summarised research findings in Section 7.2.3 regarding the library's implementation of targeted SMS marketing underscores a personalised and efficient approach to promoting e-resources. It signifies the library's recognition of the pervasive use of mobile communication and its proactive strategy to directly engage students through concise and targeted messages. By utilising SMS marketing, the library aims to deliver focused information

about e-resources, cater to students' specific needs, and enhance their awareness and utilisation of these valuable academic materials.

7.3.3.5 Displaying resource URLs on library computer monitors.

An immersive and visually instructional strategy for promoting e-resources is stressed by the conclusion drawn from the research findings reported in Section 7.2.3 regarding the route of deployment of the library displaying resource URLs on library computer monitors. This approach demonstrates the availability of an opportunity for the TU libraries to seamlessly integrate e-resources into the physical learning surroundings of students. The library hopes to provide a direct and convenient connection between students and the available digital resources by displaying URLs on computer monitors. This will promote spontaneous engagement and study of e-resources while utilising library resources.

7.3.3.6 Incorporating digital display screens.

The findings regarding a potential opportunity for TU libraries to incorporate digital display screens as part of the strategy to market e-resources are drawn from the summarised research findings in Section 7.2.3. This conclusion emphasises the importance of a dynamic and visually appealing approach to promoting e-resources. This tactic demonstrates the library's dedication to developing aesthetically compelling informational platforms that grab students' attention and provide crucial details about available resources. The library hopes to encourage students to study e-resources in an engaging and aesthetically stimulating way by strategically positioning digital display screens. This will increase their overall engagement and utilisation of these resources.

7.3.3.7 Offering Online Tutorials and Webinars

The study's findings, summarised in Subsection 7.2.4 and in reference to Objective 1.5.4, have been further unveiled as another contemporary way and emerging strategy for marketing e-resources to students: through the offering of online tutorials and webinars regarding the provision

and utilisation of e-resources to students within TU libraries. The findings highlight the potential for TU libraries to integrate online tutorials and webinars into their marketing strategy for e-resources. This dynamic approach acknowledges the evolving nature of digital learning and the demand for flexible, self-paced education. By providing informative sessions, libraries can proactively engage students, demonstrating the value and effectiveness of e-resources, aligning with modern learners' preferences, and enhancing engagement and utilisation of valuable academic materials.

7.3.4 Conclusions regarding behavioural intentions of students towards utilising e-resources

The study's findings, summarised in Subsection 7.2.4 and in reference to Objective 1.5.4, have unveiled a wide-ranging understanding of the factors that significantly impact students' behavioural intentions towards utilising e-resources within TU libraries. The findings highlight key insights that emerged, shedding light on the intricate interplay of these factors. Based on the summarised findings, the conclusions drawn are outlined as follows:

7.3.4.1 Perceived relevance

Students' perception of the relevance of e-resources to their academic goals significantly influences their intention to use them. When students perceive e-resources as directly applicable to their studies, they are more inclined to engage with these resources.

7.3.4.2 Perceived ease of use

The perceived ease of using e-resources plays a pivotal role in influencing students' intentions. If students consider e-resources easy to navigate and access, they are more likely to incorporate them into their learning routines.

7.3.4.3 Perceived relevance or benefit

The perceived benefits of using e-resources, such as improved academic performance and better understanding of course materials, positively affect students' intentions to utilise them.

7.3.4.4 social Influence

Students' interactions with their peers, their lecturers, and society, including discussions and recommendations about e-resources, significantly impact their behavioural intentions. Positive peer recommendations can encourage students to explore and use e-resources. Likewise, the influence of faculty members, including their endorsements and recommendations of e-resources, holds substantial weight in shaping students' intentions to engage with these materials.

7.3.4.5 Self-Efficacy:

Students' belief in their ability to effectively use e-resources plays a pivotal role in influencing their behavioural intentions. Higher levels of self-efficacy led to stronger intentions to use these resources.

7.3.4.6 Perceived Support:

Students' perception of the support provided by the library and educational institutions in using e-resources influences their intentions. Adequate support and guidance contribute to positive intentions.

In sum, the multifaceted nature of students' behavioural intentions to use e-resources within TU libraries is influenced by factors such as perceived relevance, ease of use, benefit perception, peer and faculty influence, self-efficacy, and perceived support. These findings provide valuable insights for libraries and institutions aiming to enhance students' engagement and utilisation of e-resources, ultimately contributing to a more enriched and effective learning experience.

7.3.5 Conclusions regarding the competencies of library staff to market e-resources to students

The study's findings, summarised in Subsection 7.2.5 and in reference to Objective 1.5.5, have unveiled a wide-ranging set of skills and competencies that are critical for TU library professionals to possess for effective e-resource marketing within TU libraries. Based on the summarised findings, the study's conclusion regarding the competencies of library staff to market e-resources to students is outlined as follows:

7.3.5.1 Academic and professional expertise

The findings, summarised in Section 7.2.5, highlight TU library staff's academic and professional expertise as crucial for effective e-resource marketing. The importance of academic and professional competence underlines the crucial role that such expertise plays in defining the environment for prosperous e-resource marketing strategies. Such expertise among library staff enhances their ability to connect with students on an academic level, tailor their approach to students' educational needs, and effectively communicate the value and utility of e-resources in supporting their studies and research endeavors.

7.3.5.2 Digital literacy and information literacy

The findings, as summarised in Section 7.2.5, further highlight digital literacy's crucial role in TU library staff's effective e-resource marketing. In essence, the conclusions are that the digital literacy of library staff in the TU library will empower them to navigate the digital landscape with finesse. They can leverage a variety of digital tools and platforms to engage, inform, and connect with students, thereby effectively marketing e-resources and enhancing their visibility and utilization.

7.3.5.3 Research skills.

The findings, which are summarised in Section 7.2.5, demonstrated that research skills are yet another critical trait that librarians must possess to properly and proficiently market e-resources to

students at Ghanaian TUs. This finding leads to the conclusion that library staff's research abilities enable them to thoroughly examine students' needs and preferences, choose and promote e-resources in a strategic manner, and offer them evidence-based insights that they can relate to. By utilising these abilities, staff may close the digital divide between students and resources, improving the marketing initiatives' knowledge, relevance, and effectiveness.

7.3.5.4 Knowledge of using modern and emerging ICT tools in the digital environment

The findings, which are summarised in Section 7.2.5, demonstrated that library staff knowledge of using modern and emerging ICT tools in the digital environment is yet another critical trait that librarians must possess to properly and proficiently market e-resources to students at Ghanaian TUs. The study's findings suggest that the library staff's familiarity with new and cutting-edge ICT tools enables them to take advantage of a dynamic digital environment for e-resource marketing. Staff may successfully engage students, spark their interest in e-resources, and promote a culture of discovery and utilisation by developing compelling content, enabling tailored interactions, and utilising data-driven insights.

7.3.5.5 Proficiency in marketing knowledge

The summary of findings mentioned in Section 7.2.5 makes it abundantly evident that a thorough understanding of formal marketing principles is yet another crucial ability demanded of library workers. This finding leads to the conclusion that library staff's proficiency in marketing equips them with strategic insights, communication finesse, and a data-driven approach. By applying marketing principles, staff can create compelling campaigns, engage students effectively, and ultimately drive higher awareness, usage, and appreciation of e-resources within the student community.

7.3.5.6 Ability to adapt traditional LIS skills to the digital realm.

The summaries of findings as referenced in Section 7.2.5 further point to another essential competency expected of library staff, which is the need for a solid grasp of the ability to adapt traditional LIS skills to the digital realm. This finding leads to the conclusion that the ability of library staff to adapt traditional LIS skills to the digital realm demonstrates their agility in meeting the evolving needs of students. By seamlessly merging these skills with digital tools and platforms, staff can create a cohesive and user-centered environment that effectively promotes, supports, and enhances the utilisation of e-resources among students in the TU library.

7.3.5.7 Effective communication, relationship-building, and customer service.

The summaries of findings as referenced in Section 7.2.5 further point to another essential competency expected of library staff, which is the need for a solid grasp of effective communication, relationship-building, and customer service. This leads to the conclusion that library staff's ability to effectively communicate, build relationships, and provide customer service is critical for influencing the effective marketing of the electronic-based library collection to students in Ghanaian TUs. These effective interpersonal and customer relationship abilities are crucial for establishing connections with students and facilitating resource engagement.

7.3.5 Conclusions regarding proposed innovative strategies to market e-resources to students.

A creative approach to revitalising e-resource marketing inside TU libraries is the subject of the findings for the study's sixth objective (1.5.6) and summaries in (7.2.6). The summary of the study's findings clearly educates the reader about the different inventive ways to market e-resources to encourage students to use the resources at TU libraries. The following is a summary of the conclusions reached about the suggested creative marketing techniques to enhance student usage of e-resources:

7.3.6.1 Collection development policy for electronic resources

The summary of findings cited in Section 7.2.6 indicates a crucial strategic move that would lay the groundwork for effective e-resource marketing at Ghanaian TU Libraries: the design of a solid collection development policy that is specifically suited for electronic resources. The implications of this creative strategy show that this policy will specify the standards for choosing, obtaining, and maintaining electronic resources, matching them to students' interests and academic needs to increase their participation.

7.3.6.2 strategic marketing planning

A critical strategic decision that would lay the foundation for successful e-resource marketing at Ghanaian TU Libraries is indicated by the summary of findings listed in Section 7.2.6: the creation of a strong development marketing strategy that is tailored especially for electronic resources. Implementing organised marketing planning guarantees that e-resource promotion is done in a systematic way. The library maximises its capacity to successfully reach and engage students by identifying target groups, creating customised messages, and choosing appropriate communication methods.

7.3.6.3 Leveraging Web 2.0 technologies and tools.

The summary of findings provided in Section 7.2.6 suggests another crucial strategic choice that will lay the groundwork for successful e-resource marketing at Ghanaian TU Libraries. This is where Web 2.0 tools like social media platforms, wikis, podcasts, RSS feeds, and blogs come into play. These tools provide a dynamic approach to communicating with students. The library will take advantage of these modern communication trends by producing content that is engaging and simple to distribute to increase the visibility of e-resources.

7.3.6.4 Leveraging the library and institutional websites.

The summary of findings presented in Section 7.2.6 proposes yet another essential strategic approach, namely the use of institutional and library websites as platforms to initiate campaigns to market e-resources to students at Ghanaian TU Libraries. The conclusion drawn from this is that dedicating a page or two to marketing activities will position the library and institutional websites as a centralised platform for promoting the use of the resources. This is because students are more likely to access and investigate e-resources if the navigation is user-friendly, important resources are highlighted, and the information is kept current.

7.3.6.5 Tutorials and demonstration videos, via online platforms

The summary of findings presented in Section 7.2.6 proposes another essential strategic move: the adoption of tutorials and demonstration videos via online platforms for effective e-resource marketing at Ghanaian TU Libraries. The conclusion drawn from this is that the creation of such tutorials and demonstration videos, hosted on such platforms as YouTube, equips the students with the knowledge to effectively use e-resources. Visual learning aids enhance their understanding and empower them to make the most of available resources.

7.3.6.6 Relationship management (RM)

The summary of findings presented in Section 7.2.6 proposes that the cultivation of strong relationships with students involves personalised interactions that cater to their unique needs. By understanding their preferences, responding to feedback, and providing tailored recommendations, the library can foster a sense of partnership that boosts e-resource utilization.

7.3.6.7 Outreach and exhibition programmes

The summarised findings as presented in Section 7.2.6 further established the strategy of Organizing outreach initiatives and exhibition programmes introduces students to the diverse range

of e-resources. Engaging events that showcase the practical benefits and applications of these resources spark interest and encourage students to explore further.

7.3.6.8 Collaboration and partnerships with faculty

As part of the summarised findings (referenced in Section 7.2.6), it likewise highlights the role of collaboration and partnerships with faculty as an innovative way to get the e-resources marketed to the users. Close collaboration with faculty members promotes, publicises, and aligns e-resource offerings with academic requirements. Close collaboration with faculty will also pave the way for integrating e-resources into the curriculum; the library ensures their relevance and promotes their regular usage among students.

7.3.6.9 Provision of information literacy (IL)skills training for students

The summarised findings (referenced in Section 7.2.6) similarly highlight the role of information literacy (IL) skills training for students. Ensuring that library staff stay abreast of emerging technologies and trends is crucial. Similarly, regular training and skill development enable staff to guide students effectively, provide technical assistance, and contribute to the evolving e-resource landscape.

7.3.6.10 Continuous training and development for library staff.

The findings surmised under Section 7.2.6 also highlight the relevant role of continuous training and development for library staff in ensuring that library staff stay abreast of emerging technologies and trends, which is crucial. Regular training and skill development enable staff to guide students effectively, provide technical assistance, and contribute to the evolving e-resource landscape.

The study's proposed framework, as summarised in Section 7.2.7, sheds light on several significant conclusions that can be drawn. The following conclusions can be drawn:

1) framework guides higher education institutions in improving visibility, accessibility, and e-resource usage for effective marketing.

2) The framework emphasises how important strategic planning and implementation are to the promotion of online resources. Institutions can guarantee a goal-oriented and well-coordinated effort by concentrating on strategic development and implementation.

3) The framework emphasises the growth of both student and staff user attributes. This emphasises the significance of improving user capabilities and experiences to enable trouble-free interaction with e-resources.

4) framework emphasises e-resources' success by defining characteristics and influencing factors like social influence, environment, and user experience.

5) A central tenet is that effective communication of e-resource value and ease of use are crucial for engaging students and fostering positive perceptions.

6) The framework's elements and strategies predict positive student engagement and uptake of e-resources.

7) Through the framework's implementation, academic libraries empower students by utilising e-resources, supporting academic achievements, and sharing knowledge.

8) Implementing the framework requires stakeholder collaboration and ongoing monitoring for effective e-resource utilisation and marketing adaptation.

In essence, the proposed framework encapsulates a systematic approach to optimising e-resource utilisation. It combines strategic planning, user-centered approaches, effective communication, and collaboration to foster a positive environment for students to engage with and benefit from the available resources.

7.4 Contribution to knowledge

The study's findings make several significant contributions to knowledge in the field of library and information science, particularly in the context of marketing e-resources to students in technical university libraries in Ghana. Some of the key contributions include:

1) The study provides valuable insights into the factors that contribute to low student utilisation of e-resources in technical university libraries in Ghana. By identifying factors such as inadequate awareness, limited marketing efforts, poor search skills, and insufficient staff support, the study enhances our understanding of the challenges faced by students in accessing and using electronic resources for their academic needs.

2) The study identifies both traditional and contemporary marketing strategies that are effective in promoting e-resources to students. By highlighting the importance of social media marketing, email campaigns, and other Web 2.0 technologies, the study offers practical recommendations for library professionals to enhance their marketing efforts and engage students more effectively.

3) The study also proposes a comprehensive framework for marketing e-resources to students, drawing from various theoretical foundations. This framework offers a structured and interconnected approach to marketing, considering the importance of collection development policies, strategic marketing planning, Web 2.0 technologies, and library websites. This contribution serves as a valuable guide for libraries in developing holistic marketing strategies to improve e-resource utilization.

4) Furthermore, the study highlights the competencies required by library professionals to effectively market e-resources to students. By identifying key skills such as information literacy, research abilities, marketing expertise, and knowledge of emerging technologies, the study emphasises the importance of continuous professional development for librarians. Empowering library professionals with these competencies

can significantly enhance their ability to support students in accessing and utilising e-resources.

5) The study focuses specifically on the context of technical university libraries in Ghana, providing context-specific insights into the challenges and opportunities faced by these institutions. This localised understanding is essential for tailoring marketing strategies and initiatives to the unique needs and characteristics of the Ghanaian academic landscape.

6) The study's findings contribute to the broader literature on e-resource marketing in developing countries, particularly in the African context. By identifying common challenges and effective strategies, the study enriches our understanding of the marketing landscape for e-resources in similar settings and offers potential solutions to enhance resource utilization.

7) The study utilises a mixed-methods approach, combining quantitative survey data with qualitative insights from interviews with library professionals. This integration of data sources allows for a comprehensive and nuanced understanding of the factors influencing e-resource utilisation and the effectiveness of marketing strategies. The research thus offers a methodological innovation by synthesising multiple research designs to bridge basic and applied research, which, in the view of Lau (2017:48), can help solve real-world problems and generate new knowledge.

8) Finally, the study's contributions generally advance knowledge in the domain of e-resource marketing, offering practical recommendations for library professionals to enhance student access and utilisation of electronic resources. By addressing the identified challenges and leveraging innovative marketing approaches, the study provides valuable insights for academic institutions in Ghana and other developing countries seeking to optimise their e-resource utilisation and support the academic success of their students.

7.5 Implication of the study

The study's findings have several implications for various stakeholders, including academic libraries, library professionals, students, technical universities, and policymakers. Some of the key implications are as follows:

7.5.1 Implication for technical universities policymakers

The study's implications for the policy framework highlight the urgent need for a comprehensive and proactive approach to address the challenges in marketing e-resources to students in TU libraries in Ghana. Policymakers and relevant stakeholders such as the Ministry of Education (MoE), the Ghana Tertiary Education Commission (GTEC), the management bodies of Technical Universities (TUs) in Ghana, the management of other academic institutions, the Ghana Library Association (GLA), and the Consortium of Academic and Research Libraries in Ghana (CARLIGH) should collaborate to develop and implement policies that promote contemporary marketing approaches, support professional development, enhance collection management, improve technology infrastructure, foster collaboration, and prioritise monitoring and evaluation. By doing so, Ghanaian academic institutions can enhance the utilisation of e-resources, support students' academic success, and foster a culture of information literacy in the digital age.

1) Policymakers in the education sector can use the study's implications to recognise the importance of adequate funding and support for academic libraries. Investing in modern technology, infrastructure, and marketing efforts can lead to increased e-resource utilisation and improved learning outcomes for students.

2) Policymakers can consider integrating information literacy and e-resource utilisation into the academic curriculum. By doing so, students will develop essential skills to navigate and critically evaluate electronic resources, enhancing their academic performance and research abilities.

The study's implications call for a collaborative effort among all stakeholders to address the identified challenges and leverage innovative strategies to enhance the access, visibility, and utilisation of e-resources in technical university libraries. By implementing the study's recommendations, academic institutions in Ghana and similar settings can create an enabling environment for students to thrive academically and succeed in their research endeavors.

7.5.2 Implication for academic libraries

The study highlights the need for academic libraries to adopt a multi-faceted marketing approach that combines both traditional and contemporary strategies. Libraries should leverage social media, Web 2.0 technologies, and other digital platforms to reach students effectively and promote e-resources. Developing well-defined collection development policies for electronic resources is crucial. These policies should align with the needs and interests of students and ensure that the e-resources remain relevant and valuable in supporting academic programs. Libraries should create formal marketing plans that outline specific goals, strategies, tactics, budgets, and assessment methods. Strategic planning helps libraries allocate resources effectively and measure the success of marketing campaigns.

7.5.3 Implication for library professionals

The study emphasizes the importance of continuous professional development for library professionals. It is crucial for librarians to enhance their competencies in information literacy, marketing, and emerging technologies to effectively promote e-resources. Library professionals need to adapt traditional library and information science skills to the digital environment. This includes effective information organization, reference services, and evidence-based librarianship in the context of electronic resources.

7.5.4 Implication for technical universities

The study's findings underscore the importance of allocating resources for marketing efforts and the professional development of library staff. Technical universities should prioritise the enhancement of library services, staff training, and technology infrastructure to support e-resource utilization. Technical universities should provide institutional support and recognition for effective marketing initiatives. Encouraging collaboration between faculty, librarians, and administrators can lead to more successful marketing campaigns.

7.5.5 Implication for technical universities students

The study's implications suggest that students should receive improved awareness and training on how to access and utilise e-resources effectively. Academic institutions can play a role in enhancing students' information literacy skills to navigate digital databases and make the best use of available resources. The study highlights the role of peer influence in raising awareness about e-resources. Therefore, as part of the marketing strategy of TU libraries, students can be considered as part of the marketing plan to encourage them to share their positive experiences with e-resources with their peers, further promoting the adoption and utilisation of electronic resources.

7.6 Recommendation

Based on the findings for each research objective, the following are the recommendations for the study:

Based on the findings of the first research objective, which identified the causes of low student utilisation of e-resources from TU libraries in Ghana, the study recommends as follows:

1) TU libraries should prioritise efforts to increase awareness and knowledge among students on how to use databases and e-resources effectively. This can be achieved

through information literacy workshops, orientations, and targeted awareness campaigns.

2) Implement marketing strategies to promote e-resources, making students aware of the available academic databases and their relevance to their studies.

3) Develop and integrate library instruction on e-resources into the academic curriculum to familiarise students with using these resources as part of their learning process.

4) Address the scarcity of specific e-resources tailored to various fields of study by collaborating with faculty and subject specialists to acquire and promote relevant resources.

5) Emphasize the importance of information literacy and digital skills in the academic environment, encouraging students to utilise e-resources for research and learning purposes.

Based on the findings of the second research objective, which assessed current strategies employed by TU libraries to market e-resources to students and determine their effectiveness, the study recommends as follows:

1) Libraries should adopt a balanced marketing approach, combining traditional methods like brochures and posters with contemporary digital strategies like social media marketing and email campaigns.

2) Conduct regular assessments of the effectiveness of marketing strategies through surveys and feedback from students to identify which methods resonate most with the target audience.

3) Encourage faculty and peer influence in promoting e-resources to students, considering that recommendations from lecturers and colleagues were found to be effective in raising awareness.

4) Collaborate with other academic libraries and organizations to share best practices and experiences in e-resource marketing, fostering collective learning and improvement.

Based on the findings of the study's third objective, which explored contemporary and emerging strategies for marketing e-resources to students in TU libraries in Ghana, the study recommends as follows:

1) Develop a comprehensive marketing plan that includes a mix of contemporary strategies like social media marketing, video tutorials, and Web 2.0 technologies to effectively engage students.

2) Utilize social media networking sites and other Web 2.0 tools to create visually appealing content that resonates with students and encourages them to explore e-resources.

3) Explore the use of instant SMS messages, inbox URL links, and mobile apps to provide targeted and personalized marketing messages to students.

4) Incorporate digital display screens in library spaces to showcase information about e-resources and create awareness among students.

Based on the findings of the study's fourth objective, which explored the factors that influence students' behavioural intentions to use e-resources in university libraries, the study recommends as follows:

1) Emphasize the importance of information retrieval skills and training for students to effectively use e-resources. Implement training sessions on effective search strategies and database navigation.

2) Focus on the perceived ease of access and quality/value of e-resources to positively influence students' intentions to use them. Ensure that e-resources are readily accessible and of high quality.

3) Provide sufficient support from library staff to assist students in accessing and utilizing e-resources. Library professionals should be available to address students' queries and provide guidance on e-resource usage.

4) Utilize peer influence and recommendations from lecturers to promote e-resources to students, leveraging interpersonal communication to encourage usage.

Based on the findings of the study's fifth objective, which identified the competencies of library professionals in marketing e-resources to students in Ghanaian tertiary institutions (TUs), the study recommends as follows:

1) Promote continuous professional development opportunities for library professionals, focusing on marketing and promotional skills, information literacy, and digital technologies.

2) Encourage library professionals to stay updated with emerging technologies and social media platforms to effectively market e-resources to students.

3) Strengthen traditional library and information science (LIS) skills in the context of electronic resources, such as collection development and evidence-based librarianship.

4) Enhance communication, interpersonal relations, and customer service skills among library professionals to provide effective support and guidance to students.

Based on the findings of the study's fifth objective, which identified innovative strategies for marketing e-resources to students in Ghanaian technical universities (TUs), the study recommends as follows:

1) Develop a policy framework that supports the adoption of innovative marketing strategies for e-resources in academic libraries, emphasizing the use of Web 2.0 tools and digital technologies.

2) Encourage collaboration among academic libraries, faculty, and students to understand their needs and preferences better, tailoring marketing efforts accordingly.

3) Establish a structured marketing planning process within TU libraries, setting specific goals, strategies, and assessment methods to measure the success of marketing campaigns.

4) Ensure that libraries have access to adequate information and technology infrastructure to implement innovative marketing strategies effectively.

Generally, the study's findings call for a holistic approach to marketing e-resources in TU libraries in Ghana, combining traditional and contemporary strategies, improving information literacy and digital skills, and promoting collaboration among stakeholders. By implementing these recommendations, TU libraries can enhance the utilisation of e-resources among students, leading to improved academic performance and research outcomes.

7.7 Envisioning future research horizons.

As the study concludes the journey of exploring marketing strategies for electronic resources in technical universities, it becomes imperative to illuminate the path for future scholars. This section serves as a compass, guiding prospective researchers through the uncharted territories of potential investigations. By meticulously unveiling the gaps and limitations within this thesis, the researcher aims to inspire and equip scholars with a roadmap for future inquiries in the dynamic realm of e-resource utilisation and marketing within educational landscapes.

Prospective scholars are invited to interact with the complex opportunities and problems uncovered in this thesis, with each suggestion serving as an invitation to explore deeper levels of understanding. The researcher hopes that this part piques readers' interest, encourages a spirit of inquiry, and inspires academics to continue developing techniques that improve users' knowledge of and utilisation of electronic resources in technical university libraries and beyond.

Based on the findings of the study, the following are some recommendations for future studies:

1) Investigating the impact of library instruction and information literacy skills training on the utilisation of e-resources by students in technical universities in Ghana

2) examining the effectiveness of different marketing strategies, such as email marketing, social media marketing, SMS marketing, and web 2.0 technologies, in promoting the utilisation of e-resources by students in technical universities in Ghana.

3) exploring the impact of the attitudes and interpersonal skills of library professionals on the utilisation of e-resources by students in technical universities in Ghana.

4) Investigating the role of collection development policies in the utilisation of e-resources by students in technical universities in Ghana

5) Examining the effectiveness of library events, such as webinars, book clubs, and author talks, in promoting the utilisation of e-resources by students in technical universities in Ghana

6) conducting a comparative study of the utilisation of e-resources by students in technical universities in Ghana and other countries in the West African region.

7) exploring the impact of user feedback and testimonials on the utilisation of e-resources by students in technical universities in Ghana.

By conducting further studies in these areas, it will help to deepen our understanding of the factors that influence the utilisation of e-resources by students in technical universities in Ghana and provide insights that can be used to improve marketing strategies and services provided by libraries in Ghana.

7.8 Overall conclusion

Drawing from the study's findings, a holistic conclusion can be drawn. Effective marketing of e-resources in technical university (TU) libraries in Ghana necessitates a multifaceted strategy. This approach entails crafting collection development policies, strategic marketing planning, harnessing

emerging ICTs and digital marketing tools, mandatory library instruction coupled with information literacy skills training, cultivating open communication and interpersonal connections with students, fostering partnerships with academic departments, and actively participating in library workshops and training sessions. By embracing this comprehensive approach, TU libraries can optimise their efforts to boost e-resource awareness, accessibility, and utilisation among students. The study also highlighted the need for library and information professionals to acquire tech and ICT user skills, improve their attitudes towards users, develop marketing and promotion skills, enhance communication and interpersonal skills, and demonstrate commitment to assisting users. The study contributes to the body of knowledge on contemporary and emerging approaches for marketing e-resources in academic libraries in Ghana and methodological innovation. Overall, the study has important implications for stakeholders in technical university education, including librarians, information professionals, administrators, and policymakers, and provides a foundation for future research in this area.

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APPENDICES

Appendix A: Questionnaire For Student Respondents

Appendix 7 (1)

UNIVERSITY OF SOUTH AFRICA (UNISA)

COLLEGE OF HUMAN SCIENCES (CHS)

DEPARTMENT OF INFORMATION SCIENCE

QUESTIONNAIRE FOR STUDENTS

Dear Respondent,

I am **Patrick Baayel**, a doctoral student at the University of South Africa (UNISA), collecting data for a PhD degree in the Department of Information Science. This questionnaire is sent to you as a participant in the study to gather information on **"Marketing of Electronic Library Resources to Students in Technical Universities in Ghana."** I would be grateful if you could spare some time to answer the questions thoroughly and return them as soon as possible.

Consent:

Please be aware that your privacy is protected. It is completely up to you whether you wish to participate or not. Your involvement in giving any information will be kept strictly confidential, and your responses will be isolated from your identity so that they are not traced back to you. Please indicate whether it is your will to participate or otherwise by ticking one of the following. YES [   ], NO [   ], and sign the attached consent document.

Contact details for questions:

To clear possible doubts, the research is available to answer all questions. Please contact me via the email address: patrick.baayel@gmail.com. One could also reach the researcher via the cell phone numbers: +223207851327/+223548561476.

PART I: SOCIO-DEMOGRAPHIC INFORMATION OF RESPONDENT

Q1. Please indicate your institution by ticking the appropriate one applicable to you		
1.1	Koforidua Technical University	
1.2	Tamale Technical University	
1.3	Sunyani Technical University	
1.4	Kumasi Technical University	
1.5	Accra Technical University	
1.6	Takoradi Technical University	
1.7	Cape Coast Technical University	
1.8	Ho Technical University	
1.9	Dr Hilla Limann Technical University	
1.10	Bolgatanga Technical University	
Q2	**Select Your Age Range. Please tick appropriately as applied to you**	
2.1	15- 20	
2.2	21- 25	
2.3	26 30	
2.4	31-35	
2.5	36-40	
2.6	41 and above	
Q3	**Select Your Gender. Please tick appropriately as applied to you**	
3.1	Male	
3.2	Female	
3.3	Others (please, specify)	
Q4. Select the level of your current studies. Please tick appropriately as applies to you		
4.1	Postgraduate (MTech/MSc/MBA/MA etc.,) degree	
4.2	Undergraduate degree	
4.3	Higher National Diploma (HND) degree	
4.4	Other Professional Diplomas/degrees (please, specify)	
4.5	Professional Certificate in Technical, and Vocational Education (TVET)	
Q5. Indicate Your faculty of study. Please tick appropriately as applied to you		
5.1	Faculty of Health and Allied Sciences	

5.2	Faculty of Engineering	
5.3	Faculty of Applied Science and Technology	
5.4	Faculty of Business and Management Studies	
5.5	Faculty of General and Multidisciplinary studies	
5.6	Faculty of Built and Natural Environment	
5.7	Please specify, if not mentioned above here	

PART II: CAUSES OF LOW STUDENT USAGE OF E-RESOURCES IN TU LIBRARIES IN GHANA

6) In the column marked, please check the boxes below the categories described as "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to indicate the purpose for which you access e-resources. The choices should reflect how much you agree or disagree with the statements given.

Purpose		VL (1)	L (2)	M (3)	H (4)	VH (5)
6.1	To complete Assignment					
6.2	Research on Final project work /dissertation					
6.3	Exam preparation					
6.4	Leisure and pleasure reading					
6.5	Complement what is taught in class					
6.6	To prepare lecture notes					
6.7	Exploring for Personal discoveries					
6.8	collaborative studies research					
6.9	For citation and referencing					

Please list to specify others not mentioned above
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………………………………………………………………………………………….

7) Please tick () in the column category described as: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to describe the extent to which each listed factor contributes to students' low or non-usage of subscribed e-resources from the library on your campus.

Factors causing low students' usage of e-resources		1 VL	2 L	3 M	4 H	5 VH
7.1	insufficient searching & access skills					
7.2	insufficient knowledge of databases					
7.3	Perceived difficulties to encounter					
7.4	insufficient knowledge of the databases					
7.5	Lack of marketing of the resources					
7.6	Less motivation/need of the user					

7.7	Less knowledge of application/use					

Please list to specify others not mentioned above

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8) Please tick () in the column category described as: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to describe your knowledge regarding the types of e-resources provided in your campus library.

	Knowledge of Types of E-resources	VL	L	M	H	VH
		1	2	3	4	5
8.1	Open websites/internet resources					
8.2	Online tutorial videos and audios					
8.3	Online images/maps atlases					
8.4	eBooks					
8.5	Online journals					
8.6	Academic Databases					
8.7	CD-ROM/DVD-ROM Based Resources					
8.8	Institutional repositories					
8.9	Online Public Access Catalogue (OPAC)					
8.8	E-thesis					
8.9	E-reference materials					
8.10	Meta Data/Bibliographic Records					

Please list to specify others not mentioned above

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9) Please tick in the column category described as: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to describe the extent of your familiarity regarding available academic databases provided in your campus library.

	Familiarity with Academic Databases	1	2	3	4	5
		VL	L	M	H	VH
9.1	Science Direct					
9.2	Emerald. Insight					
9.3	Taylor and Francis					
9.4	Google Scholar					
9.5	Scientific Research in Publication (SCRIP)					
9.6	IEE					
9.7	Sage Journals					
9.8	Ebscohost					
9.9	Research 4Life Databases (HINARI, AGORA, OARE, ARDI)					
9.10	JSTOR					
9.11	PubMed					

Please list other academic databases familiar to you but not mentioned above
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10) Please tick in the column category described as: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to indicate the extent of students' access to e-resources from the following sources from the library on your campus.

Sources of students' access to e-resources		VL	L	M	AV	VH
		(1)	(2)	(3)	(4)	(5)
10.1	Online public access catalogue (OPAC)					
10.2	Institutional repositories					
10.3	Open websites/pages					
10.4	Open access resources on the internet					
10.5	Google scholar					
10.6	Google search					
10.7	Peer reviewed e-journals					
10.8	eBooks					
10.9	Wikipedia					
10.10	Subscribed e-databases					
10.11	Resources on CD-ROMs/DVDs					
10.12	e-journals					

Please list other Sources of students' access to e-resources but not mentioned above
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11). Please tick (√) on the option that best describes the extend of difficulty you face in your attempt to access e-resources from the library on the five-point Likert scale.

Difficulties Associated with Students' Access to E-Resources		1	2	3	4	5
		VL	L	M	H	VH
11.1	Limited searching and navigation skills					
11.2	databases in your subject area					
11.3	Irregular internet connectivity on campus					
11.4	Lack of assistance from library staff					
11.5	Challenges with login & account mgt					
11.6	No access to computers from the library					
11.7	Lack of off campus access					
11.8	High cost of data for accessing resources					
11.9	Lack of access to personal computer/smart devices					
11.10	Lack of access to printing and storage facilities in the library					

Please list others no specify above.

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12). Please check the box next to "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)" to evaluate your searching abilities and skills required for accessing e-resources from your campus library.

Evaluating students searching abilities/Skills		VL	L	M	H	VH
		1	2	3	4	5
12.1	Computer user skills					
12.2	Information literacy skills					
12.3	Query/search terms formulation					
12.4	Training received on the search techniques					
12.5	ability to evaluate relevant sources of e-resources					
12.6	Navigation Skills					
12.7	Advance Searching Tools and Techniques					
12.8	ability to retrieve (e.g., print/download) needed information					
12.9	Combining special characters					
12.10	Knowledge of how to use Boolean operators					

Please indicate other searching limitations faced by students.

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PART III: PREVAILING STATE OF MARKETING E-RESOURCES TO STUDENTS IN TU LIBRARIES

13) How would you describe the current state of library marketing campaigns on your university campus that are aimed at getting students to use e-resources more effectively? The Likert scale is stated as "1 = Seriously Disagreed (SD), 2 = Disagreed (D), 3 = Neutral (N), 4 = agreed (A), and 5 = seriously agreed (SA),

Description of the current state of library marketing campaigns		SD	D	N	A	SA
		1	2	3	4	5
13.1	VERY LOW					
13.2	LOW					
13.3	AVERAGE					
13.4	HIGH					
13.5	VERY HIGH					

14) On the Likert scale, which is stated as "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH), please check the appropriate boxes assess the library uses the listed Conventional/Printed media to teach students about e-resources from the library.

Current Marketing Strategies of TU Libraries		VL	L	M	H	VH
		1	2	3	4	5
14.1	brochure/flyers					
14.2	Notices/signage in library					
14.3	Posters and banners					
14.4	Orientation Packets					
14.5	User manuals					
14.6	Campus Bulletin/Notice board					
14.7	Student Newsletters/Magazines					
14.8	Library Newsletters					
14.9	Institutional & Library Websites					
14.10	Social media handles and web 2.0 tools					
14.11	Marketing Via emails					
14.12	Via Text messaging					

Please list other ways the library on your campus markets its resources to students.

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PART IV: CONTEMPORARY AND EMERGING METHODS OF MARKETING LIBRARY RESOURCES

15) On a Likert scale where 1 is very low (VL), 2 is low (L), 3 is moderate (M), 4 is high (H), and 5 is very high (VH), please check the corresponding boxes to indicate your endorsement for your campus library's use of the underlisted approach for marketing e-resources to students.

S/N	CONTEMPORARY/EMERGING MARKETING STRATEGIES	SD	D	U	A	SA
		(1)	(2)	(3)	(4)	(5)
15.1	Social media marketing					
15.2	URL links to e-resources on institutional website					
15.3	Digital display monitors screes in the library					
15.4	Marketing e-resources via Web 2.0 technologies					
15.5	Dedicated webpage for e-resources					
15.6	video tutorials on the institutional/library websites					
15.7	Bogging/podcasting					
15.8	Wikis/RSS feeds					
15.9	Direct updates to students via emailing list					
15.10	Direct Texting of messages (SMS)					
15.11	Virtual seminars with students					
15.12	Mobile apps and push notification					

Please suggest other contemporary/emerging strategies not mentioned above for marketing e-resources to students.

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PART V: EFFECTS OF CONTEMPORARY MARKETING APPROACHES ON STUDENTENTS UTILISATION OF E-RESOURCES

16) On a Likert scale where 1 is very low (VL), 2 is low (L), 3 is moderate (M), 4 is high (H), and 5 is very high (VH), please check the corresponding boxes to indicate how the underlisted marketing methods will affect your interest in accessing e-resources from your campus library.

S/N	EFFECTS OF EACH STRATEGY ON MARKETING E-RESOURCES	SD (1)	D (2)	U (3)	A (4)	SA (5)
16.1	Social media campaigns					
16.2	Create URL links to resources on inst'nal/library webpages					
16.3	Digital display monitors screes in the library					
16.4	Updates on the library social media handles					
16.5	Dedicated webpage for e-resources					
16.6	video tutorials on the institutional/library websites					
16.7	Bogging/podcasting					
16.8	Wikis/RSS feeds					
16.9	Direct updates to students via emailing list					
16.10	Direct Texting of messages (SMS)					
16.11	Virtual seminars with students					
16.12	Mobile apps and push notification					

17). Please check the boxes below the alternatives that are YES, SOMEWHAT, or NO to show your support for each listed social media networking technology as a means of promoting e-resources from your campus library to students.

Social media preference	YES %	Somewhat %	NO%
WhatsApp			
Demonstrations/tutorials on YouTube			
Demonstrations/tutorials on Facebook			
TikTok for tutorials			
Regular updates on the library tweeter handle			
Instagram			
FAQs on snapchats			
telegram			
Pinterest			
myspace			
LinkedIn			
blogging			
RSS Feed			

Please provide other such tools not mentioned in the table above.

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PART VI: FACTORS INFLUENCING BEHAVIORAL INTENTIONS OF STUDENTS TOWARD THE USE OF E-RESOURCES IN LIBRARIES

18). Please select the appropriate boxes to describe how the underlisted user qualities will influence students' behavioural intentions towards their usage of e-resources from the library on the Likert scale described as "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH)."

S/N	Influences of students' behavioral intentions toward the use of e-resources	SD (1)	D (2)	N (3)	A (4)	SA (5)
18.2	Awareness of available resources					
18.3	self-efficacy with the technology					
18.4	Efficacy with Information retrieval skills					
18.5	perceived ease of use of e-resources					
18.6	perceived quality/value of e-resources					
18.7	perceived relevance of e-resources					
18.8	The level of marketing the resources					
18.9	perceived support from library staff					
18.10	Influence from peers and teachers					

PART VII: COMPETENCIES NECESSARY FOR LIBRARY EMPLOYEES TO ENSURE THE SUCCESS OF THE LIBRARY MARKETING INITIATIVES FOR E-RESOURCES

20) Please tick the appropriate boxes to indicate your evaluation of the library staff's performance in providing students with e-resources, using the following list of competences as the barometer on the Likert scale.: 1 is very low (VL), 2 is low (L), 3 is moderate (M), 4 is high (H), and 5 is very high (VH).

S/N	Competencies library staff on marketing initiatives	SD (1)	D (2)	N (3)	A (4)	SA (5)
19.1	Academic/Professional					
19.2	Reference and Research					
19.3	Information Literacy skills					
19.4	Tech and ICTs user skills					
19.5	Marketing/Promotion					
19.6	Communication & interpersonal skills					
19.7	Commitment to assist users					
19.8	Proficiency in Web 2.0 & social media					
19.9	Customer service skills					

Please indicate other skill sets that library professionals need for successful marketing of e-resources.

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PART VIII: INNOVATIVE MEASURES FOR INFLUENCING STUDENTS' USE OF E-RESOURCES IN THE LIBRARIES.

20) Please check the appropriate boxes to indicate how much you agree or support each of the exhibition and outreach programmes listed for use in promoting the e-resources to students in the university library. The Likert scale is as follows: "1 = very low (VL), 2 = low (L), 3 = moderate (M), 4 = high (H), and 5 = very high (VH).

Exhibition & Outreach programmes for marketing e-resources to students	VL 1	L 2	M 3	H 4	VH 5
20.1 Campus-wide Lecture Series					
20.2 Library orientation sessions					
20.3 Library Week or Month activities					
20.4 Academic Support Programs					
20.5 Study Skills Workshops					
20.6 Campus Radio marketing					
20.7 Student Ambassador Programs					
20.8 Student Feedback Surveys					
20.9 Mobile Library Outreach					
20.10 Gamification					
20.12 Collaborative Workshops					

Please indicate other exhibition and outreach strategies not listed above skill sets that library.

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21) To show your agreement or support for each of the tech and social media marketing strategies described for use in promoting the e-resources to students at the university library, please check the appropriate boxes where the Likert scale is "1 = Very Low (VL), 2 = Low (L), 3 = Moderate (M), 4 = High (H), and 5 = Very High" (VH).

S/N	Tech & Social Media Marketing Strategies	SD (1)	D (2)	U (3)	A (4)	SA (5)
21.1	Robust Social media marketing					
21.2	URL links to e-resources on institutional website					
21.3	Digital display monitors screes in the library					
21.4	Marketing e-resources via Web 2.0 technologies					
21.5	Dedicated webpage for e-resources					
21.6	video tutorials on the institutional/library websites					
21.7	Bogging/podcasting					
21.8	Wikis/RSS feeds					
21.9	Direct updates to students via emailing list					
21.10	Direct Texting of messages (SMS)					

| 21.11 | Virtual seminars with students | | | | | | |
| 21.12 | Mobile apps and push notification | | | | | | |

Please indicate other tech and social media marketing strategies not listed above.

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22) To show your agreement or support for each of the policy and planning strategies described for use in promoting the e-resources to students at the university library, please check the appropriate boxes where the Likert scale is "1 = Very Low (VL), 2 = Low (L), 3 = Moderate (M), 4 = High (H), and 5 = Very High" (VH).

Policy and Planning strategies		**VL**	**L**	**M**	**H**		**VH**
		1	2	3	4		5
22.1	E-resource acquisition policy						
22.2	Focus on Needs Assessment						
22.3	focus on developing marketing policy for e-resources						
22.4	Focus on Budgetary allocations						
22.5	Strategic Marketing/Promotional Plan for the e-resources						
22.6	Guidelines/manual for user training and education						
22.7	Collaborative/partnerships with faculties & departments						
22.8	Integration with the curriculum						
22.9	User support and assistance Plan						
22.10	Strategies for Long-term preservation and archiving						

23. What other cutting-edge strategies will support libraries' marketing efforts to e-resources?

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24. Provide some further recommendations that, if followed, could have an impact on how students use the library's electronic resources.

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I thank you for your time and efforts in completing the questionnaire.

Appendix B: Interview Guide for Library And Information Professionals

__Appendix 7 (II)__

UNIVERSITY OF SOUTH AFRICA

COLLEGE OF HUMAN SCIENCES (CHS)

DEPARTMENT OF INFORMATION SCIENCE

<u>INTERVIEW GUIDE FOR PARTICIPANTS</u>

Dear Library and information science professional,

I am **Patrick Baayel**, a student at the University of South Africa (UNISA), collecting data for a PhD degree at the Department of Information Science. This is an interview schedule designed for you (Head Librarian & e-resources' librarian), of this university. It aims to solicit your views about the state of **"Marketing of Electronic Library Resources to Students in Technical Universities in Ghana."** I would be grateful if you spared some time to participate in the interview as thoroughly and exhaustively as possible. Please it will require approximately, 30minutes to conduct the interview with you during which a recording the discussion will be conducted. Please be assured that your views will be kept completely confidential. I thank you for your time and efforts and time.

Note:

The interview is structured in five parts: part I seeks to gather socio-demographic & professional background information; Part II focus is on the causes of students' low usage of e-resources; Part III the difficulties faced by students in accessing e-resources. Part IV seeks to ascertain the current state of marketing e-resources; Part V on ascertaining contemporary marketing strategies to influence students' patronage of e-resources; part VI on the competencies required of the library professionals to marketing e-resources to students, while Part VII deals with proposing measures to influence optimum students' usage of e-resources.

Thank you.

PART I: ON THE SOCIO-DEMOGRAPHIC INFORMATION & PROFESSIONAL BACKGROUND OF PARTICIPANTS

QUESTION ROUTE	
1. Opening Dialogue	A brief introduction from the interviewer including an exchange of salutations and pleasantries with the interviewee to ease the tensions of participant.
2. Introductory Questions	Please can you confirm your institution of work as a librarian and what you enjoy doing most in the library? i)Your position/status at work in the library are you the head librarian or the e-resources' librarian? ii)What is your level of education? a) Masters (MA/MSc/MBA) b) M.Phil. c)Doctorate (PhD) d.) Other professional qualifications, please specify. iii)How long have you practised as a librarian? iv)what is your age?

PART II: ON THE CAUSES OF STUDENTS' LOW USAGE OF E-RESOURCES

QUESTION ROUTE	SPECIFIC QUESTIONS
3)On the levels of students' usage of e-resources	i. Are e-resources available in your campus library? ii. What are the levels of students' usage/patronage of electronic resources in your library? iii. what does your user statistics say in terms of user statistics?
4)On causes of low students' usage of e-resources	i. what is the state of students' awareness of the availability of e-resources in the library? ii. What in your view, are the causes why some/many students do not use e-resources? iii. What are the peculiar difficulties of students in searching and accessing the resources from the databases? i. what are some of the difficulties are associated with students' access to e-resources in your library? ii. Are students able to search the databases effectively? iv. Are students able to access resources remotely? v. Are the students adequately trained? vi. How is the user environment friendly? vii. Is there adequate ICT infrastructure to support access?

PART III: ON CURRENT STRATEGIES LIBRARIES ADOPT FOR MARKETING E-RESOURCES TO STUDENTS

ROUTE OF QUESTIONS	SPECIFIC QUESTIONS TO ASK PARTICIPANTS
5) On the current state of marketing e-resources in TUs' libraries	i. Are there any current strategies the library relies on to market e-resources to students? ii. What current strategies do the library relies on to market e-resources to students? iii. do you think the current marketing activities provide the desired results? iv. Do you think that there is adequate user education and training during orientations, on the library/institution websites – what are some of them? v. and user manuals? vi. Are there any future alternative strategies planned to enhance the effective marketing of e-resources? vii. If there are when is your library implementing them? viii. Do you know of other better strategies that you would wish to adopt? If so, what is stopping the adoption?

PART IV: ON CONTEMPORARY MARKETING STRATEGIES FOR INFLUENCE STUDENTS' PATRONAGE OF E-RESOURCES IN LIBRARIES

QUESTION ROUTE	SPECIFIC QUESTIONS
6)On contemporary marketing strategies to influence students' patronage of e-resources in libraries	i. What contemporary and emerging strategies of marketing can the library adopt for marketing e-resources to influence optimal students' usage of the resources? ii. what modern ICTs/tools would best carry the marketing message to students? iii. which other modern and emerging digital platforms can be adopted for marketing e-resources? iv. does your library adopt the use of available Web 2.0 tools and other digital platforms for marketing? v. Mention Web 2.0 tools and digital platforms TU libraries can adopt for marketing their resources. vi. Is social media a viable tool to adopt for marketing and what are your reasons? vii. Mention some social media tools can use to market e-resources, and what are your reasons.

PART V: ON FACTORS THAT INFLUENCE THE BEHAVIOURAL INTENTIONS OF STUDENTS TOWARDS USING E-RESOURCES FROM THE LIBRARIES

QUESTION ROUTE	SPECIFIC QUESTIONS
7) On the determination of factors that influence the behavioural intentions of students to use e-resources from the libraries	i. What characteristics as users do students have that influence how they intend to use the e-resources? ii. What fluences students' intention to use e-resources from the databases in the library? iii. What impact will effective marketing of e-resources have on students' intentions toward using e-resources? iv. does a student's perception of the library staff's support affect their plans to use the resources there? v. does a student's intention to use of e-resources influenced by their social interactions?

PART VI: COMPETENCIES REQUIRED OF THE LIBRARY PROFESSIONALS TOWARDS MARKETING E-RESOURCES TO STUDENTS.

QUESTION ROUTE	SPECIFIC QUESTIONS TO ANSWER
8)Question on library staff competencies/skills	i. Are there specific library staff working with e-resources? ii. do you think that all library staff in this library possess (should) the required digital marketing skills? iii. do your library staff possess skills that facilitate them market e-resources to students for desired results? iv. Do library staff have formal training on how to market library resources? v. What specific skills are required of library staff to enable them market e-resources to students for desired results? vi. formal training on how to market library resources?
9) Questions on the attitudes of the library professionals towards marketing e-resources	vii. Are your library staff with the right attitude towards assisting students to access e-resources?

PART VII: INNOVATIVE APPROACHES OF MARKETING TO INFLUENCE OPTIMAL STUDENTS' USAGE OF E-RESOURCES.

QUESTION ROUTE	SPECIFIC QUESTIONS TO ANSWER
10)What measures will you propose for influencing students' optimum usage of e-resources?	i. What innovative measures can you suggest towards the marketing of e-resources for influencing students' optimal patronage of e-resources? ii. Which contemporary and emerging strategies and tools can be adopted for better marketing of e-resources to students? iii. What would you suggest as the appropriate conventional and traditional marketing strategies for adoption to influence optimal students' usage of e-resource? iv. Can the focus on marketing policies for e-resource bring results? v. Does your library have a marketing policy? vi. What about an e-resource policy? vii. Do you have a marketing plan for marketing e-resources? viii. what modern communication tools would best carry the message to students?

Appendix C: Ethical Clearance Approval Certificate

UNISA | university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

28 September 2021

Dear Patrick Baayel (Mr)

Decision:
Ethics Approval from 28 September 2021to 28 September 2026

NHREC Registration # :
Rec-240816-052

CREC Reference # :
67126529_CREC_CHS_2021

Researcher(s):	Name: Patrick Baayel (Mr)
	Contact details: 67126529@mylife.unisa.ac.za
Supervisor(s):	Name: Prof Mabel K. Minishi-Majanja
	Contact details: majanmk@unisa.ac.za

Title: Marketing electronic library resources to students in technical universities in Ghana.

Degree Purpose: PhD

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for five years.

The *low risk application* was reviewed by College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the

confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.

7. No fieldwork activities may continue after the expiry date **(28 September 2026).** Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **67126529_CREC_CHS_2021** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,

Signature:

Prof. KB Khan
CHS Research Ethics Committee Chairperson
Email: khankb@unisa.ac.za
Tel: (012) 429 8210

Signature: PP

Prof K. Masemola
Exécutive Dean: CHS
E-mail: masemk@unisa.ac.za
Tel: (012) 429 2298

Appendix D: Letters Approving Access to the Study Sites

KOFORIDUA TECHNICAL UNIVERSITY
(OFFICE OF THE REGISTRAR)

P. O. Box KF 981,
Koforidua - E/R
Ghana, West Africa

Tel: (+233) 3420 24466   (+233) 3420 22890   (+233) 3420 24993   **Tel/Fax:** (+233) 3420 21817
Email: registrar@ktu.edu.gh   **Website:** www.ktu.edu.gh

Our Ref: .... KTU/RO/29 ....   *Your Ref:* ....   *Date:* ... 14TH MAY, 2021 ...

TO WHOM IT MAY CONCERN
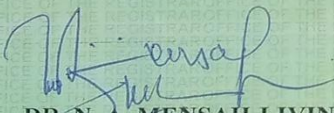
Dear Sir/Madam,

LETTER OF INTRODUCTION – MR. PATRICK BAAYEL

We wish to introduce to you, *Mr. Patrick Baayel*, Assistant Librarian at the Library of the above University. He is conducting a research for his PhD degree at the Department of Information Science of the University of South Africa (UNISA). The title of his thesis is "*Marketing of Electronic Library Resources to Students in Technical Universities in Ghana*".

Any courtesies or assistance extended to him would be highly appreciated.

Yours faithfully,

DR. N. A. MENSAH-LIVINGSTONE
REGISTRAR

KUMASI TECHNICAL UNIVERSITY

Office of the Registrar
Telephone Nos.:
0322491128/0322022387
Fax: 0322022387
Email: registrar@kstu.edu.gh

P. O. Box 854
Kumasi, Ashanti
Ghana Africa

Our Ref: KsTU/ADM/PS/456

15ᵗʰ November, 2021

Your Ref

MR. PATRICK BAAYEL
KOFORIDUA TECHNICAL UNIVERSITY
P.O. BOX KF 981
KOFORIDUA, EASTERN REGION

TEL: 0207851327

Email: 67126529@mylife.unisa.ac.za

Dear Sir,

REQUEST FOR ACCESS TO STUDY SITE

Your letter on the above subject dated 28ᵗʰ October, 2021 refers.

Permission has been granted for you to collect data from our University for your research work on the theme "Marketing of Electronic Library Resource to Students in Technical Universities in Ghana".

We wish you the best in your endeavours.

Yours faithfully,

EBENEZER KOFI BOAKYE
REGISTRAR

Cc: Librarian

HO TECHNICAL UNIVERSITY

OFFICE OF THE REGISTRAR
Post Office Box HP 217
Ho, Ghana

Tel/Fax: +233 3620-27421
E-mail: registrar@htu.edu.gh
Website: www.htu.edu.gh

HTU/R/G4/VOL.2/577   18th November, 2021.

Mr. Patrick Baayel
Koforidua Technical University
P. O. Box KF 981
Koforidua, E/R

Dear Sir,

RE: REQUEST FOR ACCESS TO STUDY SITE

I write on behalf of the Registrar to acknowledge receipt of your letter dated 28th October, 2021 on the above-mentioned subject.

This is to inform you that approval has been given you to collect data at Ho Technical University for your PhD. Research titled *"Marketing of Electronic Library Resources to Students in Technical Universities in Ghana"*.

Kindly contact the Ag. Dean of the School of Graduate Studies on **0245115304** for further arrangements.

By a copy of this letter the Ag. University Librarian is informed and kindly requested to accord you any assistance you may require during your data collection.

Thank you.

Yours faithfully,

MERCY YAYRA ASIGBE
ASSISTANT REGISTRAR
(OFFICE OF THE REGISTRAR)

FOR: REGISTRAR

Cc:
Vice-Chancellor
Ag. Pro-Vice-Chancellor
Ag. University Librarian
Ag. Dean, SGS
The Registrar, KTU

DR HILLA LIMANN TECHNICAL UNIVERSITY

Office of the Registrar

P. O. Box 553
Wa
Upper West Region
Ghana
Email: registry2017@gmail.com
Office Tel/Fax: +233 (0)392097603
Cell Phone: 0244608511

Our Ref: **DHLTU/REG./V.2/F.20**

Your Ref:

Date: 15th November,, 2021

MR. PATRICK BAAYEL
C/O KOFORIDUA TECHNICAL UNIVERSITY
P. O BOX KF 981
KOFORIDUA

Dear Sir,

RE: LETTER OF INTRODUCTION: MR. PATRICK BAAYEL

I write to acknowledge receipt of your letter date **14th May, 2021** with reference no: **KTU/RO/29** and captioned as stated above.

Your request is granted for the purpose of conducting academic research in the Dr. Hilla Limann Technical University.

By copy of this letter, the University community is encouraged to extend courtesies and assistance to **Mr. Patrick Baayel** and his research team.

Thank you very much.

Vitus Songotuah
Registrar

cc: Vice Chancellor
       Pro Vice Chancellor
       Deans of Faculties / School
       Academic Heads of Department
       Library
       Notice Boards
       File copy

CAPE COAST TECHNICAL UNIVERSITY

(OFFICE OF THE REGISTRAR)

Tel: 0592774927/0209185158

Website: www.cctu.edu.org

e.mail: registrar@cctu.edu.gh

P.O.BOX DL 50

Cape Coast

Our Ref: CCTU/499/105

November 9, 2021

MR. PATRICK BAAYEL
KOFORIDUA TECHNICAL UNIVERSITY
P. O. BOX KF981
KOFORIDUA – E/R

Dear Mr. Baayel,

RE: REQUEST FOR ACCESS TO STUDY SITE

Your letter dated November 9, 2021 on the above-mentioned subject refers.

Please be informed that approval has been granted to your request to collect data at Cape Coast Technical University for a study titled "Marketing of Electronic Library Resources to Students in the Technical Universities in Ghana".

You are kindly requested to ensure that you observe the COVID-19 protocols whiles collecting the data.

By a copy of this Letter, the Librarian is kindly informed to provide you the necessary assistance.

Thank you.

Yours sincerely,

Hannelore Asmah (Mrs.)
Senior Assistant Registrar
For: Registrar

cc: Registrar
    Librarian

BOLGATANGA TECHNICAL UNIVERSITY
(Office of the Registrar)

Our Ref: BTU/GADM/02

Your Ref:

Post Office Box 767
Bolgatanga
U.E.R. – Ghana

15th February, 2022

MR. PATRICK BAAYEL
KOFORIDUA TECHNICAL UNIVERSITY
P.O.BOX 981
KOFORIDUA – E/R

Dear Sir,

RE: REQUEST FOR ACCESS TO STUDY SITE

Your letter dated 28th January, 2022 on the above subject refers.

Your request for permission to access Bolgatanga Technical University to collect data for the conduct of your study titled "Marketing of Electronic Library Resources to Students in Technical Universities in Ghana" has been approved.

Thank you.

Yours faithfully,

Hannah Bagbara
Deputy Registrar –General Services
FOR: REGISTRAR

cc: Vice Chancellor, Pro Vice Chancellor, Registrar, Ag. Librarian, Director of Research, Innovation& Development.

Appendix E: Informed Consent Form

UNISA | university of south africa
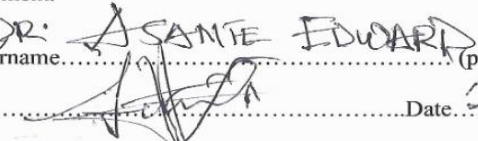
CONSENT TO PARTICIPATE IN THIS STUDY

I, DR. ASANTE (participant name), confirm that **MR PATRICK BAAYEL** who is asking for my consent to take part in this research has told me about the nature, procedure, potential benefits, and anticipated inconvenience of participation.

I have read (or had been explained to) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the of the interview process. I have received a signed copy of the informed consent agreement.

Participant Name & Surname. DR. ASANTE EDWARD (please print)

Participant Signature. Date 21-11-2021

Researcher's Name & Surname **PATRICK BAAYEL**

Researcher's signature.

Date: **22/07/2021**

![UNISA university of south africa]

CONSENT TO PARTICIPATE IN THIS STUDY

I, Maxwell Akussah (participant name), confirm that **MR PATRICK BAAYEL** who is asking for my consent to take part in this research has told me about the nature, procedure, potential benefits, and anticipated inconvenience of participation.

I have read (or had been explained to) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the of the interview process. I have received a signed copy of the informed consent agreement.

Participant Name & Surname. MAXWELL AKUSSAH ..... (please print)

Participant Signature....... [signature] ....Date 15/09/2021

Researcher's Name & Surname **PATRICK BAAYEL**

Researcher's signature.

[signature]

Date: **22/07/2021**

Appendix F: Turnitin Antiplagiarism Receipts and Results

turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Patrick BAAYEL
Assignment title:	Complete dissertaion/thesis FINAL
Submission title:	Baayel_Patrick_FinalTHESIS@unisa(67126529)_2023
File name:	Baayel_Patrick_FinalStudy_unisa_67126529__2023.docx
File size:	4.99M
Page count:	490
Word count:	131,130
Character count:	794,069
Submission date:	14-Dec-2023 10:29PM (UTC+0200)
Submission ID:	2259220687

MARKETING AND USE OF ELECTRONIC LIBRARY RESOURCES TO STUDENTS IN TECHNICAL UNIVERSITIES IN GHANA.

BY

PATRICK BAAYEL
STUDENT NUMBER: 67126529

A thesis submitted in accordance with the requirements for the degree of

DOCTOR OF PHILOSOPHY (PhD)
in the subject
INFORMATION SCIENCE (90035)
At the

UNIVERSITY OF SOUTH AFRICA (UNISA), PRETORIA
DEPARTMENT OF INFORMATION SCIENCE

PROMOTER: PROFESSOR MABEL K. MINISHI-MAJANJA

AUGUST 202

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