Benha university

Faculty of Arts

Faculty of Arts journal

Scientific journal reveiw

ChatGPT Technology from Users' Perspective:

A Survey Study of Saudi Scholarship Students

By

Yasir Nasser A. Alsaleh
Assistant Professor - Data Science Department
College of Computing - Umm Al Qura University
Saudi Arabia
ynalsaleh@uqu.edu.sa

Vol.64 **April 2025**
https://jfab.journals.ekb.eg/

Abstract:

This study aimed to reveal Saudi scholarship students' perceptions of ChatGPT technology and its uses at academic study as well as identify the extent to which such perceptions significantly differ . The quantitative cross-sectional survey method was used selecting a representative convenience sample of Saudi scholarship students in the United Kingdom consisting of 270 male and female students, both at undergraduate and postgraduate levels. To collect data, a survey questionnaire was prepared by the researcher covering the following three main dimensions: ChatGPT technology's use level, ChatGPT technology's use motivations and perceptions of ChatGPT technology's benefits. The study results found a "high" ChatGPT technology's use level from Saudi scholarship students' point of view where the first dimension had an overall mean score of 3.511. Furthermore, results also showed a "high" level of participant students' perceptions of ChatGPT technology's benefits with the third dimension having an overall mean score of 3.763. The study results revealed significant differences between the mean scores of participant Saudi scholarship students' perceptions of all its three main dimensions of ChatGPT technology's use level, motivations and benefits at academic study that can be attributed to the effects of their selected demographic variables, namely, gender, academic major and current scholarship degree. In light of such findings, some final suggestions and recommendations were eventually proposed, particularly focusing on providing Saudi students, researchers, faculty members and staff of overseas Saudi Arabian cultural bureaus worldwide with more advanced, specialized, intensive and continuous training and professional development programs tackling ChatGPT

technology's effective utilization mechanisms and strategies in a standardized, scientifically- and evidence-based manner during the foreseeable future.Keywords: ChatGPT; Saudi Scholarship Students; Generative Artificial Intelligence; Technology Acceptance Factors

Keywords: ChatGPT; Saudi Scholarship Students; Generative Artificial Intelligence; Technology Acceptance Factors

I-Research Background

-Introduction

With the accelerating AI boom gaining international prominence in the early 2020s, which has led to remarkable developments, ongoing rapid investments, increasing public attention and widespread integration of Artificial Intelligence (AI) technologies across various aspects of society, economy and daily life, a plethora of its vital applications have emerged in the field of Information Technology (IT) due to their several positive tangible advantages in terms of simulating human behavior and intelligence, potential to process information both quickly and efficiently, provision of new smart information and insights that users can benefit from in understanding and utilizing data and information in addition to allowing for multiple effective uses at various fields and daily life applications, thus improving users' ability to make sound rational decisions.

In particular, Generative Artificial Intelligence (GAI) is widely considered one of the most pivotal fruits of the Fourth Industrial Revolution (4IR), or Industry 4.0, witnessing tremendous unprecedented rapid technological advancements in the 21st century and enjoying diverse uses at several fields of life, including its numerous military, economic, industrial, technological, medical and service applications (Al-Amiri, 2024), largely based on constant improvements in transformer-based deep neural networks, particularly

Large Language Models (LLMs), including such popular chatbots as ChatGPT, Copilot, Gemini and Llama, text-to-image AI image generation systems such as Stable Diffusion, Midjourney and DALL-E and text-to-video AI generators such as Sora.

More specifically, IT and Information Science (IS) fields are, of course, among the most prominent scientific and practical domains that have been quick to reap GAI's ambitious fruits. In such context, Gao et al (2024) explained that LLMs have recently gained significant attention due to their outstanding performance at many real-world tasks stemming from their high-ability to efficiently handle a wide range of practical applications based on advanced deep learning technologies enabling them to understand and generate texts in a human-like manner, summarize texts, answer questions, interact in conversations as well as process and analyze information in an advanced way, thus contributing to improving productivity and enhancing the ability to process data more effectively.

A case in point here is that ChatGPT technology is currently leading the scene as one of the most popular generative, Pre-trained Large Language Models (PLLMs) making a major recent development in the field of Information Retrieval (IR), with its advanced technologies. Notably, such models have evolved from being mere simple preliminary tools at first to eventually become data-intensive and complex retrieval models today in a way greatly expanding the scope and capabilities of information-retrieval activities. Therefore, ChatGPT technology already gives a prime example of how LLMs can be best leveraged to improve information search and retrieval processes side by side with further increasing their accuracy and effectiveness (Huang & Huang, 2024).

Accordingly, ChatGPT technology has tremendously influenced Information-Seeking Behavior (ISB) via radically transforming how university students deal with information search processes thanks to its ability to perform advanced Natural Language Processing (NLP) functions. No wonder then that ChatGPT technology has become one of the most advanced instructional technology tools, thus making it an excellent source for information search and retrieval at many fields providing better and easier ways to access required information compared to other traditional outdated methods (Adarkwah et al., 2023).

As a consequence, ChatGPT technology's purposes of use at academic study have considerably varied between assistance in conducting research studies and projects (e.g. Firat, 2023; Fontenelle-Tereshchuk, 2024; Khalifa & Ibrahim, 2024; Morocco-Clarke et al., 2024), use as an Intelligent Assistant (IA) in learning and training (e.g. Firat, 2023; Khalifa & Ibrahim, 2024; Morocco-Clarke et al., 2024; Pallivathukal el al., 2024) or performing information search and retrieval processes (e.g. Chen & Shimada, 2023; Hernandez et al., 2023; Jin et al., 2023).

In fact, due to ChatGPT technology's many benefits, its widespread use at academic environments has begun to increase over a very short period of no more than three years only. As a result, it's necessary for contemporary educational researchers to keep abreast of such rapid developments through conducting many new studies exploring in-depth ChatGPT technology's various applications, use motivations and fruitful benefits from its users' point of view.

It's against such backdrop that ChatGPT technology's great importance and rapid proliferation as an example of a GAI application becomes crystal clear enabling university students to best invest its advanced potentials in their academic studies for information search,

retrieval and utilization purposes. However, due to the relative novelty of this nascent research field resulting, of course, from ChatGPT technology's recent emergence, the current study seeks to identify the status quo of using ChatGPT technology, focusing on revealing Saudi scholarship students' perceptions of its use level, motivations and benefits at their academic study.

* Research Problem

Generally speaking, ChatGPT is one of the latest artificial intelligence technologies emerging on the fore during the last few years, thus promising further tremendous technical developments and diverse practical uses. However, despite recent "newness", its use has clearly witnessed significant and rapid growth within a very short time. Therefore, it's necessary to conduct further research tackling it from the perspective of information technology and science fields in order to keep pace with such continuous developments via examining the status quo of ChatGPT technology's use level, motivations and benefits at academic study.

In fact, many relevant previous studies repeatedly showed a widening gap, subtle debates and significant differences in opinion between contemporary researchers regarding ChatGPT technology in terms of its various advantages and multiple benefits, e.g. controversies over whether or not it concretely contributes to summarizing information, explaining difficult concepts, suggesting research ideas and assisting in scientific writing (see, for example, Kirtania, 2023; Ruiz Estrada, 2023; Dai et al., 2023; Mohammed et al., 2023; McFayden et al., 2024).

However, to the best of the current researcher's knowledge largely based on his extensive systematic review of relevant Arabic and foreign literature, he overall noted the scarcity of previous studies

examining ChatGPT technology's use from an IT perspective and the tendency of most studies available so far to ignore focusing on such technology' promising uses and applications at specialized educational and instructional contexts.

Notably, despite the fact that we already have some limited previous studies focusing on ChatGPT technology from an information technology and science perspective (e.g. Karunaratne & Adesina, 2023; Zhang et al., 2023; Al Shboul et al., 2024), such "new-born" research field is still indeed in its infancy due to the recent emergence of ChatGPT technology itself and the utmost need for conducting more research studies exploring the status quo of its uses, motivations and benefits at academic study according to the perceptions of Saudi higher education students, especially those who are currently overseas enrolled into various study-abroad scholarships, from an IT perspective.

A case in point here is that the problem of the current study is empirically evidenced from the field by the researcher's personal observations and close monitoring of the general IT landscape in the Kingdom of Saudi Arabia (KSA) where he particularly noticed the acceleration of an ongoing increasing trend towards implementing digital transformation strategies at various fields in line with the "Saudi Vision 2030" strategic roadmap and future directions. In tandem, Saudi university students have recently enjoyed, by extension, an accelerating use level of the latest emerging technologies, including GAI tools, most notably ChatGPT technology. More specifically, it's noticeable that overseas Saudi scholarship students currently studying abroad, especially in the United Kingdom (UK), are, by nature, among the most exposed to current scientific and technological developments worldwide in their persistent efforts and

endeavors to experiment with modern technologies and adopt them faster than others. However, such technologies' use usually comes in an automatic spontaneous manner that may not be necessarily based on solid theoretical and applied foundations derived from Information Sciences and Technologies (IST), thus possibly causing their users to suffer from many of the previously highlighted problems commonly associated with ChatGPT technology' use. Thus, it's necessary to start launching an integrated scholarly database whose various research studies focus on exploring ChatGPT technology according to users' point of view from an IT perspective.

Given the above considerations, the problem of the current study can be summarized in investigating Saudi scholarship students' perceptions of ChatGPT technology's use level, motivations and benefits at their academic study.

* Research Questions

The current study focuses on answering the following four main questions:

What is ChatGPT technology's use level among Saudi scholarship students currently studying at UK universities؟

What are ChatGPT technology's use motivations from the point of view of Saudi scholarship students currently studying at UK universities؟

What are the perceptions of Saudi scholarship students currently studying at UK universities about ChatGPT technology's benefits?

Are there significant differences in the perceptions of Saudi scholarship students currently studying at UK universities regarding ChatGPT technology's use level, motivations and benefits that can be attributed to some of their selected demographic variables (i.e. gender, academic major and current scholarship degree)?

* Research Significance

In essence, the pivotal significance of the current study can be explained both theoretically and practically as follows:

Theoretically speaking, it's indeed one of the early pioneering educational research studies exploring the perceptions of Saudi university students in general, particularly focusing on those who are currently overseas enrolled into various study-abroad scholarships, regarding ChatGPT technology in terms of its real use, motivations and benefits from an IT perspective. Besides, this study represents a strong addition opening new horizons for a pivotal information technology and science research field. In tandem, other concerned researchers can also benefit from the ChatGPT technology' use motivations identified in current study as a basis for conducting further studies focusing on their in-depth analysis in the future in light of various technology acceptance theories and models. Furthermore, the study also sheds light on ChatGPT technology' most important benefit aspects by Saudi higher education students (either at undergraduate or postgraduate levels) which can be possibly used as a facilitating guide by other fellow researchers, whether in their measurement or construction of adequate models to investigate ChatGPT technology's use from an informational perspective.

In practical terms, this study can be useful to many relevant individual stakeholders. For example, it may benefit information technology and science specialists affiliated to Saudi higher education institutions in exploring, targeting and maximizing ChatGPT technology's most important benefits side by side with helping Saudi students and researchers in its utmost utilization in the safest, most ethical and effective manner. In addition, it may identify ChatGPT technology' various use motivations, thus enabling information technology and

science specialists, again, to fully take them into consideration when making related judgements and decisions. Finally, the current study can also be of great utility to Saudi scholarship students themselves via illustrating ChatGPT technology's different uses and benefits.

*** Research Terminology**

1-ChatGPT Technology:

It's "an AI model trained to generate human-like text responses in a conversational manner and use deep learning techniques to understand and generate texts in an intelligent way designed to comprehend and respond to received text inputs, e.g. conversational questions or prompts, as well as provide them with detailed contextual responses" (El-Gamal, 2023: 133-134).

Accordingly, ChatGPT is procedurally defined in this study as a GAI-based technology developed by OpenAL as an automated robot autonomously learning from provided information in advance that can intelligently interact with users via natural language-based reciprocal dialogue with scholarship student users, process a large amount of data and provide appropriate answers to users' inquiries.

2-Saudi Scholarship Students:

In this study, they exclusively refer to the Saudi national students obtaining overseas scholarships from the Ministry of Education (MoE) in the KSA to study abroad at UK universities, whether at undergraduate or postgraduate various levels, i.e. higher diploma, master's and doctorate programs.

3-Perceptions:

They are defined as the perspective through which an individual views the world around him (McDonald, 2012). In this study, they refer to Saudi scholarship students' points of view concerning the status quo of ChatGPT technology's use level, motivations and benefits at

academic study. Procedurally speaking, they are measured in light of participant students' total score at the administered survey questionnaire prepared by the current researcher for such purpose.

II-Literature Review

This section includes an up-to-date systematic literature review and relevant previous studies closely related to the current study topic, concepts as well as models and theoretical frameworks, particularly focusing on discussing such diverse points as ChatGPT technology's concept and basic features, ChatGPT technology from an Information-Seeking Behavior (ISB) perspective, ChatGPT technology's uses at academic study, and, ChatGPT technology's adoption and use influencing factors.

A-ChatGPT Technology's Concept and Basic Features:

Huang & Huang (2024) defined ChatGPT technology (www.chatgpt.com) as a large-scale globally popular Artificial Intelligence (AI), or rather Generative Artificial Intelligence (GAI), chatbot application powered by the advanced GPT-3.5, and later GPT-4, generative Large Language Models (LLMs) first launched on November 30th, 2022 by the giant multinational American-based AI research organization OpenAI as an extension to its proprietary series of Generative Pre-Trained Transformer (GPT) models with their numerous conversational applications using a combination of both supervised and reinforcement learning from human feedback to improve reciprocal interaction with users via making significant advancements in generating human-like texts based on their received inputs.

In tandem, based on their recent systematic literature review of ChatGPT technology' potential usages, features and challenges, Molla et al (2023: 931) precisely identified its following 10 crucial features:

(1) Comprehension of context; (2) Individualized replies; (3) Multiple languages; (4) Integration of Knowledge; (5) Sentiment analysis; (6) Text generation; (7) Maintenance of conversational flow; (8) Natural language generation; (9) Automatic summarization; and (10) Creativity and humor.

B-ChatGPT Technology from an Information-Seeking Behavior (ISB) Perspective:

As a rule of thumb, Frederick (2023) generally saw ChatGPT technology as a viral data-driven disruption in the information environment. No wonder then that we have recently witnessed repeated calls for analyzing its various educational implications, uses and applications at academic study from both Information-Seeking Behavior (ISB) and Information Retrieval (IR) perspectives in the GAI era's information ecosystem in light of its unique enormous potentials for maximizing information processing and fulfillment of its student-users' informational needs, as delicately recommended, for example, by such diverse researchers worldwide as Zheng et al (2023), Hersh (2024) and Hirvonen et al (2024).

A case in point here is that McFayden et al (2024) crucially concluded that ChatGPT technology distinctly influences individuals' ISB via providing them with an accurate clear and concise content as repeatedly shown by users' various quality criteria-based performance evaluations. Indeed, it's already capable of supplying them with clear and concise information although it may sometimes lack sufficient brevity. Notably, the possible rationale is that some ChatGPT's responses may provide unnecessary additional information or, alternatively, don't necessarily include all required elements to answer posed questions.

However, Jin et al (2023) explained that a significant ChatGPT technology's shortcoming is that it's not currently suitable for use as a literature search engine on its own due to its inherent tendency to generate plausible confident-sounding, but actually fabricated or misleading responses, commonly known as "hallucination". Occasional incorrect or biased responses are, therefore, inevitable. As a result, it's necessary to retrieve, summarize and verify ChatGPT's informational content to leverage LLMs' impressive capabilities to generate high-level summaries while minimizing their possible risks of directly using false or fabricated information by combining LLMs and search engines. Noteworthy, although LLMs are progressing rapidly, they have not yet matured enough for academic and scholarly research use. As a consequence, users must retain full responsibility for verifying the accuracy and reliability of their outputs.

More specifically,Huang & Huang (2024) added that ChatGPT technology already enjoys several potential opportunities for improving IR accuracy and efficiency levels via promoting information extraction, text classification, document ranking, conversational search and multimodal retrieval. Heavily depending on using Deep Neural Networks (DNNs) to understand the deep meanings of texts, ChatGPT technology is indeed more capable of semantic extraction compared to other similar traditional keyword-based matching techniques. Also, it has low or non-existent technically complex learning capabilities, which reduces the need for large-scale labeled training data, thus facilitating its potential to deal with complex research tasks. Besides, its comprehensive training methodology contributes to reducing errors and directly improving performance on turning initial data inputs to final informational outputs side by side with integrating interlinked knowledge graphs to

employ all aggregated organized knowledge in the retrieval process, which enriches used databases and makes culminating results more accurate and up-to-date. Besides, ChatGPT technology also contributes to improving text classification via its supervised pre-training techniques that improves the quality of semantic modeling processes and addresses the challenges of adapting sub-domains and learning from a small number of given examples as well as generalization of not clearly understood categories. In terms of document ranking, ChatGPT technology has introduced new methodologies outperforming such traditional outdated techniques as TF-IDF and BM25, thus allowing for providing more accurate and relevant results for user queries. In tandem, it also develops conversational search, where responses become more natural and interactive compared to other traditional systems. Finally, ChatGPT technologies has recently integrated multimodal retrieval, a leapfrog development indeed in the field of information search mixing texts, images, audio and videos with greater accuracy.

Noteworthy, some previous studies have recently paid more attention to focus on exploring ChatGPT technology's pivotal IR roles in light of its users' ISB perspective. For example, Zhang et al (2023) empirically evaluated ChatGPT technology's performance in meeting IR task requirements under zero-shot setting in order to derive proposed insights into designing or developing more effective requirements retrieval methods or tools based on generative LLMs. To collect data, the researchers developed a new evaluation framework considering four different combinations of two popular IR task performance techniques (classification/ extraction) and two common artifact types (specialized/general) employing the evaluation-based mixed-methods research methodology combining quantitative and

qualitative tools. Under zero-shot setting, the study evaluation results revealed contrasting conclusions emphasizing ChatGPT technology's promising ability to retrieve Natural Language Processing (NLP)-related task requirements relevant functional and non-functional information extracted from specialized and general requirements artifacts in multiple languages across various application domains (high recall) meanwhile unveiling, at the same time, its limited ability to retrieve Requirements Engineering (RE)-more specific domain knowledge and requirements information (low precision).

Likewise, Al Shboul et al (2024), in turn, sought to investigate ChatGPT technology's use as a novel method for seeking health information, particularly focusing on analyzing participants' perceptions of its use in their search for health information and identifying its proposed functionality and design shortcomings for future improvement. The study used the qualitative research method collecting data via conducting semi-structured interviews with a selected purposive sample of 16 ChatGPT technology's male and female individual users from 3 different Arab countries: Jordan, Kuwait and the United Arab Emirates (UAE). Using thematic data analysis tools, the study results revealed that ChatGPT technology was easy for participants to use, convenient and accessible for swift and instant acquisition of health information. On the other hand, they did, however, raise worries over its dependability and credibility for use, particularly at more urgent or complicated medical conditions and situations, emphasizing the significance of trusting the accuracy of provided information. Besides, they also underlined the importance of emotional support and empathy, personalization and advice customization, NLP and ease of use as essential design requirements

for its effective use that could better meet their specific expectations while seeking health information in the future.

Similarly, El-Gamal's (2023) exploratory study attempted to shed further light on ChatGPT technology's linguistic model and its application in the field of libraries and information via analyzing its design, components, search mechanisms and retrieved results in addition to indicating the extent to which it achieved its intended purpose, i.e. facilitating interactive conversations. Using the descriptive-analytical research method, the researcher conducted a systematic literature review of relevant previous studies. The study results indicated that ChatGPT technology's linguistic model applications in the field of libraries and information often benefited from its smart neuro-linguistic potentials and ultra-realistic conversational skills, including the ability to ask follow-up questions and acknowledge failures and mistakes, besides making the full use of advanced Machine Learning (ML) algorithms in generating response texts according to users' inputs, queries and learnt patterns from available training data. Based on such findings, the study eventually recommended that ChatGPT technology should support the Arabic Language with better typing techniques similar to other foreign languages, promote monthly training and continuous updates so that everything new is added to enable it to provide recent, sophisticated and appropriate answers to the ever-evolving daily life and guarantee the highest possible levels of security for users' data, thus ensuring that no data breaches would occur at all.

Furthermore, Karunaratne & Adesina's (2023) exploratory study strove to systematically and empirically explore higher education institution students' perceptions, habits and behaviors for using ChatGPT technology as an information search and IR tool. The study

used the questionnaire-based descriptive-survey research method to collect the perceived IR behaviors employing a selected non-probability snow-ball sample of 60 worldwide university students at undergraduate, graduate and postgraduate levels, females, mostly distributed among health, social sciences and Science, Technology, Engineering and Mathematics (STEM) various disciplines. The study results revealed that ChatGPT technology was already widely known among participant students who were also positively aware and perceived its effective use in the IR context mostly acknowledging its usefulness, reliability and efficiency (reduced time) in finding and better understanding required information as well as helping to identify relevant information and reduce IR-associated anxiety. In addition, ChatGPT technology had considerably affected the typical use of other conventional IR and search engine tools. On the contrary, 10% of the respondents were less likely to use it during their information-seeking activities for a variety of negative reasons and challenges ranging from credibility and relevance of information sources to technology infrastructure issues, e.g. connectivity.

Overall, based on such systematic review of the above-mentioned relevant previous studies so far, it's crystal clear that ChatGPT technology can be indeed considered an effective tool for improving university students' IR capabilities and meeting their various informational needs. Besides, it can also significantly change different users' ISB, including university and higher education institution students of course. However, those students still encounter many challenges possibly hindering, in some way or another, their utmost utilization and effective use of ChatGPT technology at their academic study; a key issue to be discussed below in further details by the current researcher in the following part of his literature review.

C-ChatGPT Technology's Uses at Academic Study:

Since its initial, phenomenal emergence over the past few years, ChatGPT technology has attracted a steadily increasing widespread attention worldwide in parallel to its tremendous ever-expanding uses at many fields of life. Accordingly, the current researcher would below shed further light on ChatGPT technology's most significant areas of use and benefits at academic study from its university student users' point of view.

A case in point here is that, from the Information-Seeking Behavior (ISB) perspective, Adarkwah et al (2023: 122-123) emphasized that the effective use of ChatGPT technology's advanced functionalities, especially generating high-quality questions, examining the quality of posed inquiry questions and examining Chat GPT's credibility, remarkably facilitates teaching and learning via altering undergraduate students' information-seeking behaviors during their academic studies, thus ultimately supporting their Inquiry-Based Learning (IBL) experiences as well as positively influencing their classroom engagement, and vice versa if not properly harnessed, through its following nine main features, namely: (1) Providing immediate feedback to students in a quality manner similar to human tutors; (2) Ability to be fun and sociable; (3) Unique personality and ability to exhibit emotion; (4) Multimodal nature (i.e. ability to provide information in multiple formats, such as texts, images, videos and audio); (5) Promoting inclusivity; (6) Ability to summarize lengthy texts; (7) Engaging learners in novel creation; (8) Providing answers based on multilinguistic material and breaking language boundaries; and (9) Promoting convenience in learning and easy access to information.

In addition, it's also noticeable that ChatGPT technology enjoys a superior ability to generate research plans for users' various requested topics (Righi, 2024: 364). In particular, ChatGPT technology's applications at libraries basically aim to empower researchers and end-user beneficiaries to obtain immediate and accurate answers to their probing inquiries and chronic cognitive problems. Besides, such applications are commonly used to enrich their research experience and productivity as well as provide them with quick access to information online. They can also be used to search academic/scholarly resources, especially research articles, published books, peer-reviewed (i.e. refereed) journals and electronic databases, index and generate metadata and create innovative informational content. Finally, they additionally help to provide direct hyperlinks to reliable knowledge resources and assets as well as related content Websites, thus saving researchers' time and effort (Qenawi, 2024: 507).

No wonder then that the recent few years increasingly witnessed conducting a number of relevant previous studies focusing on ChatGPT technology's benefits and areas of use at academic study, either by university students or other related categories of their counterpart Information System (IS) users.

For example, Qenawi (2024) aimed to identify how ChatGPT technology's applications were used in delivering library services as well as evaluate their opportunities and challenges for creating, collecting, analyzing and publishing information, particularly focusing on highlighting ChatGPT technology's uses as a smart tool for data analysis at libraries. Using the exploratory research method, the study was field-applied to a selected sample of 511 librarians all over Egypt using a survey questionnaire as a data collection tool. The study

results showed that improving efficiency, enhancing interaction and collaboration, providing technical support and library resources using smart tools in addition to supporting delivered virtual services and communication between library staff and end-user beneficiaries were, respectively, ChatGPT technology's most significant perceived benefits and commonly used applications at libraries. On the other hand, participants also revealed some challenges hampering its effective implementation in library services, i.e. privacy and safety, job insecurity and employment loss concerns, technical complexities and Total Quality Management (TQM). Besides, they also shed further light on its related ethical considerations that should be taken into account on its introduction at various library types in the future, e.g. bias problems, accuracy and credibility, data privacy and lack of transparency.

Similarly, Khalifa & Ibrahim (2024) sought to evaluate PubMed publications on AI or ChatGPT technology involvement in scientific or medical writing and investigate whether they were used or not to create their research articles or listed as authors. The study used the scoping review methodology conducted according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines employing a PubMed database search for articles published between January 1 and November 29, 2023 using appropriate search terms where both authors performed screening and selection independently. The study results eventually identified 41 research articles eligible for final analysis. Published in a total of 34 journals, such article authors belonged to 27 different countries worldwide, especially the USA ranking first with 14 articles (34.1%). Notably, the most discussed topic was AI tools and writing capabilities in 19 articles (46.3%). AI

or ChatGPT was involved in manuscript preparation in 31 articles (75.6%). However, none of the examined articles listed AI or ChatGPT as an author. Besides, the authors of 19 articles (46.3%) frankly acknowledged utilizing AI or ChatGPT technology.

Before that, Dai et al (2023) strove to investigate ChatGPT technology's impact on academic environments, especially on postgraduate research supervision activities. More specifically, the study focused on exploring the various impacts of ChatGPT, an advanced AI conversational model, on five main dimensions of research supervision: functional, enculturation, critical thinking, emancipation and relationship development. Using the qualitative research method, the researchers examined the practices and perspectives of 20 postgraduate research students with at least 4 months' experience of using ChatGPT technology in carrying out their assigned research activities in Australia. The study results revealed many prominent areas of ChatGPT technology's impact on postgraduate research supervision as effective epistemic tools for enhancing the supervisory process in the academia and shifting the roles and responsibilities of both supervisors and students/researchers, including accelerated research progress, enhanced research quality, improved scholarly development and professional skills, enhanced critical thinking, increased student confidence and autonomy and a deeper supervisory relationship.

In a related context, Kirtania (2023), in turn, basically focused on unveiling ChatGPT technology' potential benefits for Library and Information Science (LIS) professionals in India. Using the focus group interviews-based qualitative research method, the study attempted to answer three major questions revolving around its positive benefits for library professionals and users as well as negative

challenges and limitations hindering its utmost utilization in providing high-quality library services from the perspective of a selected sample including a total of 35 library professionals and users. The study results demonstrated that ChatGPT technology could offer a plethora of benefits to participant library professionals and users alike, such as reference assistance, research and language support, access to library services, information management in addition to training and professional development. However, the study also uncovered a number of challenges and problems requiring more serious efforts and institutionalized initiatives in the future, e.g. low accuracy and reliability levels, lack of personalization, limited scope and accessibility concerns.

Likewise, Mohammed et al.'s (2023) in-depth case study investigated Arab postgraduate students' uses of ChatGPT technology in their higher studies in India, particularly focusing on its role in enhancing the development of academic writing skills as a core requirement for successful performance of their various academic research activities. The study used the questionnaire-based descriptive-survey research method for data collection from a selected sample comprising 40 Arab postgraduate students enrolled into five universities in Kerala State, India. The study results concluded that participant students had overall positive perceptions of ChatGPT technology's benefits and effects on their academic writing, language competency and achievement besides significantly influencing their productivity. However, not all the students equally utilized all the tool's benefits for a variety of reasons, including lack of familiarity with the nascent ChatGPT technology.

Besides, Shoufan's (2023) thematic analysis and follow-up survey sought to explore ChatGPT technology's impact, potentials and

challenges for teaching and learning at academic institutions according to their students' perceptions. Using the mixed-methods research methodology, this two-stage quantitative and qualitative study was conducted on a selected sample of 56 senior university students enrolled into a computer engineering program in the UAE. In the first stage, participant students were asked to evaluate ChatGPT technology after its use in completing a certain learning activity analyzing their responses by coding and theme building. During the second stage, derived codes and themes were employed to prepare a 27-item survey questionnaire to which the students responded three weeks later after completing other activities with the help of ChatGPT technology. The study results indicated that majority students positively reported admiring ChatGPT technology's huge capabilities and largely found it interesting, motivating and helpful for study and work. In addition, they also considered it easy to use and appreciated its human-like interface providing them with well-structured responses and good explanations. However, many students felt that ChatGPT's answers were not always accurate and most of them believed that it required good background knowledge to work with and were generally unable to replace human intelligence. In brief, most students thought that ChatGPT technology needed improvement but were optimistic that this would happen soon. In particular, their viewpoints were divided concerning its negative impact on learning, academic integrity, jobs and life.

Furthermore, Ruiz Estrada (2023) endeavored to analyze the transformative impact of ChatGPT-4 vs. Google Scholar on the field of socio-economic research and problem-solving from a comparative perspective according to a new proposed evaluation model, i.e. the "Economic Solutions Searcher Evaluation Model (ESSE-Model)",

employed as a measurement tool for the effectiveness of both platforms. Besides, the experimental research method was also used to compare their performance in finding suitable solutions to a specific socio-economic problem (e.g. unemployment control). The study results clearly found that ChatGPT-4 was remarkably able to provide accurate solutions to tackled socio-economic problems as an initial starting-point for conducting socio-economic research via providing suggested ideas and citation resources while Google Scholar, by contrast, excelled in providing comprehensive lists of references and solution proposals taking advantage of its widescale and easily accessible reference database. Finally, the study concluded that the two platforms could be better integrated by utilizing the huge potentials of AI applications.

In a similar vein, Hernández-Leo (2023) focused on exploring the role played by Learning Analytics (LA) in promoting the effective use of GAI tools (e.g. ChatGPT) at academic study and learning at higher education institutions from a user-centered perspective. The study used the descriptive-survey research method for examining the viewpoints of a selected sample of 19 students and 16 professors recently participating in a "GAI for Learning" training workshop at a public university in Spain. The study results highlighted the great potential of GAI tools (especially ChatGPT) as learning assistants, enabling improved use of study time, stimulating creativity and facilitating personalized feedback. However, participant stakeholders, on the contrary, pointed out several ethical concerns and risks that may possibly hinder learning, thus emphasizing the need for LA to differentiate between AI-assisted and AI-complement actions and human intelligence at work, aligned with pedagogical intentions, in the future.

Overall, in light of such significant contributions and conclusions from relevant previous literature, it becomes clearly apparent that ChatGPT technology already enjoys multiple uses and benefits at academic study in practice including, for example but not limited to, the following pivotal educational applications, namely: (1) Use as an assistant tool for completing designated homework and study assignments by simplifying complex concepts and ideas into a clear, understandable language; (2) Generation of complete lists of proposed ideas for research projects and studies in addition to editing, proofreading and paraphrasing texts in innovative ways; (3) Contributing to effective compilation and organization of literature and previous studies besides helping in formulating research questions or hypotheses to test; (4) Facilitation of developing the ability to suggest keywords and academic/ scholarly resources closely related to various tackled research topics and issues; (5) Summarization of the main ideas discussed in different research studies, papers and articles side by side with enhancing data analysis and statistical results interpretation steps; and (6) Allowing for checking and verifying used citations and ensuring following a specific reference style as well as solving complex issues and proposing other alternative points of view, thus contributing to writing integrated research articles in terms of coherence and organization of ideas.

D-ChatGPT Technology's Adoption and Use Influencing Factors:

Overall, previous literature has so far provided us with a multitude of significant various intertwined influencing factors that usually play pivotal roles in affecting the different approval or refusal decisions made by all university and higher education institution students in general, including Saudi scholarship affiliated ones, concerning ChatGPT technology's adoption and use at academic study to be

carefully taken into account by educational researchers, planners and practitioners, both theoretically and practically (see, for example, Duong et al., 2023; Lai et al., 2023; Raman et al., 2023, 2024; Abdalla, 2024; Strzelecki, 2024; Barakat et al., 2024; Lee et al., 2024).

First, Perceived Ease of Use refers to how easy ChatGPT technology is for users to use. A simple and clear user interface with easy access to provided technical support contributes to promoting users' feeling that the technology is uncomplicated. It usually includes such sub-elements as ease of learning, clarity of instructions and guidelines and support availability across multiple channels. In other words, the easier the user experience is, the more likely users are to adopt the technology, which increases its wide scale use in practice (Davis, 1989).

Second, Social Influence is closely associated to others' opinions and actions influencing users' decisions to use ChatGPT technology. For example, if other collegemates or peers are using the technology and praising its benefits, this enhances their desire for its use. This social influence often takes several forms, including friends' advice, positive testimonials and active participation in support groups (Davis, 1989).

Third, Perceived Usefulness strongly correlates to the extent to which users perceive the benefits of using ChatGPT technology to improve their performance and efficiency. For example, if users believe that the technology's use will help them complete assigned tasks faster and more effectively, this will motivate them to largely adopt it. This factor typically includes such sub-elements as impact on productivity, improving the quality of work and used technology's suitability to fulfilling users' individual needs (Venkatesh et al., 2003).

Fourth, Perceived Cost-Effectiveness, in turn, refers to how well the benefits and costs of using ChatGPT technology are balanced. For

example, if the financial or time cost does not outweigh the expected benefits, people will more likely use the technology. This factor commonly includes such sub-factors as direct and indirect costs, time spent on learning and required resources to use the technology (Davis, 1989).

Fifth, Hedonic Motivation concerns the feeling of enjoyment and personal satisfaction with using ChatGPT technology. For example, if the experience is enjoyable and provides a sense of accomplishment, this motivates users to adopt the technology. This factor frequently includes such sub-factors as positive experiences during use, sense of creativity when interacting with the technology and enjoyment of its innovative features (Rogers, 2003).

Sixth, Personal Interaction basically refers to ChatGPT technology's ability to personally interact with users, making them feel connected to it more closely. Its sub-elements include tailoring responses to users' needs, understanding users' peculiar contexts and ability to deliver personalized/customized content. As a result, the more personalized the interaction is, the more likely users are to adopt the technology (Venkatesh et al., 2003).

Seventh, Compatibility focuses on the extent to which ChatGPT technology is compatible with the nature of users' designated study tasks, assignments and research studies. For example, if the technology is suitable for daily operations and already contributes to facilitating the performance of the required tasks, this increases its acceptance. This factor usually includes such sub-elements as ability to integrate with existing tools, technology's suitability for different work areas and ease of use in various contexts (Davis, 1989).

Finally, Privacy and Security, in turn, focuses on the inherent sense of security and privacy while using ChatGPT technology. For example,

if users feel that their information is protected, they are more likely to adopt the technology. This factor normally includes such sub-elements as privacy policies, transparency, protection of personal data and ensuring digital security. Generally speaking, these concerns can significantly impact users' trust in the technology (Rogers, 2003).

As a consequence, recent years have witnessed a notable reflection of such various influencing factors whose shockwaves resonated widely through a plethora of relevant field studies carried out all over the world to focus on users' motivations, intentions and behaviors for ChatGPT technology's adoption and use in light of those different technology acceptance theories and models. For example, Ma & Huo (2023) identified whether Chinese users were willing or not to deeply embrace ChatGPT technology exploring in-depth the major factors impacting GAI chatbots' acceptance from the AI Device Use Acceptance (AIDUA) framework perspective. In tandem, Menon & Shilpa (2023) analyzed the factors influencing Indian users' intention to use ChatGPT technology whereas Grassini et al (2024) attempted to understand the determinants of its use acceptance by Norwegian university students, both from the UTAUT perspective. Ayoub et al (2024), in turn, discussed AI-ChatGPT technology's usage among Egyptian users in light of their key affecting factors of intentions to use and the moderating effect of privacy concerns while Tiwari et al (2024) scrutinized the main influencing factors playing a pivotal role in driving Omani university students toward ChatGPT's technology's adoption and usage for educational and learning purposes from the TAM perspective.

In a related context, Gulati et al (2024) focused on investigating marketing students' influencing factors to accept, adopt and use ChatGPT technology for educational purposes and enhance learning

potential in light of their behavioral intentions, integrating the concept of "System Flexibility", i.e. the degree to which a given technology or system can conform to varying user requirements, preferences and contexts, into the UTAUT model. The study used the questionnaire-based descriptive-survey research method employing a selected sample of 309 Indian university students. The study results revealed that "Habit" was the most significant predictor of participant students' behavioral intentions and use behaviors, with both "Performance Expectancy" and "Effort Expectancy" respectively following closely behind. However, results also showed that "Perceived Risk" was not a vital factor for marketing students, as they repeatedly exhibited a heightened sense of control in regulating their online behavior during learning.

Similarly, Albayati (2024), in turn, examined undergraduate student users' perceptions and varying levels of awareness of the factors influencing their ChatGPT technology's use and acceptance as a regular assistance tool from a user acceptance perspective. The study used an integrated model combining TAM and four new external factors: "Privacy", "Security", "Social Influence" and "Trust", again adopting the quantitative, questionnaire-based descriptive-survey research method for collecting data from a selected sample of 603 Korean university students to evaluate their awareness of ChatGPT technology's functionalities, understand how this tool impacted their daily activities in addition to unearthing the potential benefits and challenges of its implementation in educational settings. The study results highlighted the significant impact of the four new external factors on participant users' acceptance of ChatGPT technology. In particular, "Perceived Ease of Use", "Perceived Usefulness", "Social Influence", "Privacy" concerns and "Security" measures were found

to substantially shape those students' attitudes and behavioral intentions to adopt and use ChatGPT technology as an effective AI-based tool for enhancing their actual engagement and learning experiences.

Likewise, Hernandez et al (2023) sought to understand a developing economy programming course students' Information-Seeking Behavior (ISB) when using ChatGPT technology to search for required programming-related information besides evaluating its potential role and benefits to learning and assessment. For data collection, the researchers developed a proposed conceptual framework with THE hypotheses field-tested through applying a survey questionnaire to a selected sample of 299 higher education students in the Philippines. The study results clearly showed that "Perceived Ease of Use", "Perceived Usefulness", "Social Influence", "Herding", "Trust", "Convenience" as well as "Ethical Considerations" positively influenced participant students' use of ChatGPT technology to search for programming-related information. Likewise, using ChatGPT technology was positively correlated with their ISB, thus emphasizing its huge potentials as a promising technological tool that might bring forward programming activities to university students and faculty members alike in the foreseeable future.

Furthermore, Shaengchart et al (2023) also strove to analyze the factors influencing the acceptance of ChatGPT technology's usage by higher education students in Bangkok, Thailand, utilizing TAM's two classical key affecting factors of "Perceived Ease of Use" and "Perceived Usefulness" in addition to some other new factors, e.g. "Attitude", "Privacy and Security" and "Facilitating Conditions". Employing a quantitative methodology, the researchers administered a

survey questionnaire as their major data collection tool from a voluntarily selected convenience sample of 400 university students. The study results concluded that participant students' utilization of ChatGPT technology was notably impacted by both "Facilitating Conditions" (e.g. access to resources and knowledge) and "Attitude" factors whereas "Perceived Ease of Use", "Perceived Usefulness" and concerns pertaining to "Privacy and Security" did not exhibit a significant or direct influence in their supposed role as determinants of ChatGPT technology's usage.

III-Research Methodological Procedures

* Research Methodology

In order to achieve the desired objectives of his study, the current researcher used the quantitative cross-sectional survey method, based on survey questionnaire results, to reveal participant Saudi scholarship students' perceptions of ChatGPT technology and its various uses at academic study (Dependent Variable) as well as identify the extent to which such perceptions significantly differ according to some selected demographic variables, i.e. gender, academic major and current scholarship degree (Independent Variables).

* Research Population and Sample

The study population included all overseas Saudi scholarship students in the UK during the 2024 academic year from which a representative convenience sample was selected. In light of such methodology, the research instrument was prepared and applied on the Web-based Google Forms platform so as to obtain the largest possible number of responses to the administered questionnaire by targeted students. Overall, the research sample eventually consisted of 270 Saudi scholarship male and female students in the UK, both at undergraduate and postgraduate levels.

*** Research Instrument**

To collect the data needed for the current study, a single research instrument was used, i.e. a survey questionnaire measuring participant Saudi scholarship students' perceptions of ChatGPT technology. The following paragraphs describe in detail the various methodological procedures adopted by the researcher for preparing and standardizing such tool:

Identifying the Questionnaire's Purpose, i.e. to collect the quantitative data most closely related to participant Saudi scholarship students' perceptions of ChatGPT technology's uses at academic study;

Extracting the Questionnaire's Dimensions, including its following three main dimensions, namely: ChatGPT technology's use level, ChatGPT technology's use motivations and perceptions of ChatGPT technology's benefits; and

Preparing the Questionnaire's Initial Form based on a systematic literature review of relevant previous studies investigating ChatGPT technology' use level, motivations and benefits from an informational and research perspective, particularly focusing on reviewing their administered various related research instruments and survey questionnaires (e.g. Firat, 2023; Repo, 2023; Shoufan, 2023; Ventayen, 2023; von Garrel & Mayer, 2023; Anik et al., 2023; Dai et al., 2023; Hernandez et al., 2023; Mohammed et al., 2023; Shaengchart et al., 2023; Albayati, 2024; Das & Madhusudan, 2024; Khalifa & Ibrahim, 2024; Gulati et al., 2024; Niloy et al., 2024; Ullah et al., 2024).

In order to assess and verify the validity of this proposed tool, the face validity method (also called inter-rater validity) was used via presenting its initial form to a selected group of ten peer-review IT experts to judge its inclusion and coverage of all tackled dimensions,

the extent to which each item belongs to its assigned dimension, the accuracy of formulating those items exact wording and the extent to which they separately focus on a single idea only in addition to deleting, adding or modifying any of the items. As a standardized rule, reaching a consensus of 80% of the total peer-review experts on any questionnaire item was considered an adequate indicator of its face validity. Besides, in light of those experts' opinions and feedback, most items were kept without any change while the exact wording of some others was modified and two items only were excluded eventually culminating into an 18-item third dimension in its final form.

From a psychometric perspective, the Cronbach's Alpha (α) equation was similarly used to assess and verify the reliability of the proposed tool. Overall, the reliability coefficients of the questionnaire items ranged between 0.835 and 0.893, i.e. a strong statistical indication indeed that all items are reliable and suitable for use in the field. Accordingly, no item was deleted due to not significantly affecting the statistical calculation of the recently determined reliability values. The following Table 1 shows the statistics of Cronbach's Alpha (α) overall reliability coefficient value of the study questionnaire:

Table 1: Cronbach's Alpha (α) Overall Reliability
Coefficient of the Study Questionnaire (N=154)

No	Main Dimensions	Item Number	Reliability Coefficient
1	First Dimension: ChatGPT Technology's Use Level	3	0.835

No	Main Dimensions	Item Number	Reliability Coefficient
2	Second Dimension: ChatGPT Technology's Use Motivations	12	0.893
3	Third Dimension: Perceptions of ChatGPT Technology's Benefits	18	0.870
Overall Reliability		33	0.930

It's clear from Table 1 that the overall reliability coefficient of the study questionnaire was statistically estimated as (0.930) whereas the reliability coefficients for its various three sub-dimensions ranged between 0.835 and 0.893, i.e. another strong indication that the proposed tool as a whole already enjoyed a high reliability level. In other words, it's reliable for field application on participant students' selected sample.

It's against such backdrop that questionnaire's final form was prepared and applied to a selected sample of UK-based Saudi scholarship students overall consisting of the following two integrated sections, namely:

First: Introductory Section, including a brief letter addressed to respondent students explaining to them the study objectives, the type of required data to be collected from them and the adopted method for answering the questionnaire items. Besides, the letter informed those targeted subjects selected for participation that their responses would be completely confidential and used for research purposes only. In

addition, this section also included further details on participant students' selected demographic variables: gender, academic major and current scholarship degree.

Second: Questionnaire Dimensions and Items, manifesting its main section that overall included three dimensions, namely:

First Dimension: ChatGPT Technology's Use Level (3 items);

Second Dimension: ChatGPT Technology's Use Motivations (12 items); and

Third Dimension: Perceptions of ChatGPT Technology's Benefits (18 items).

More specifically, it's against such rigorous methodological procedures that in its final form, the administered questionnaire in the current study eventually included a total number of 33 items unequally distributed over its three various main dimensions. Notably, each item of both second and third dimensions had multiple answering options and response alternatives with different hierarchically rated numerical values according to the 5-point Likert scale format where "Strongly Agree" = 5 Points, "Agree" = 4 Points, "Neutral" = 3 Points, "Disagree" = 2 Points, and "Completely Disagree" = 1 Point. Similarly, each first dimension item had also multiple answering options and response alternatives with different hierarchically rated numerical values according to another relatively different version of the 5-point Likert scale format where "Always" = 5 Points, "Often" = 4 Points, "Sometimes" = 3 Points, "Rarely" = 2 Points, and "Never" = 1 Point; with an overall total score for the entire questionnaire ranging between (33-165) points.

*** Research Data Collection and Statistical Analysis**

The research data were collected by preparing and applying the study tool on the Web-based Google Forms platform so as to communicate with the largest number of overseas Saudi scholarship students currently studying abroad in the UK to answer the questionnaire questions and obtain the largest possible number of responses to the administered questionnaire by targeted students at the end of the 2023-2024 AD academic year. After obtaining the initial raw data via the Google Forms platform, the collected data were statistically analyzed using diverse validated statistical techniques with a mixed combination of both descriptive (i.e. percentages, frequencies, mean scores, standard deviations and ranks) as well as inferential statistics (i.e. Independent Samples T-Test in addition to the non-parametric Mann–Whitney U-Test and Kruskal–Wallis H-Test). Noteworthy, all statistical analyses were carried out using IBM SPSS Statistics software (Version 26) while the raw data were prepared using Microsoft Excel software via the Google Forms platform.

IV-Research Results and Discussion

1-Research Demographics:

As for the demographic distribution of current study sample, it's noticeable from Table 2 that it included a total of 270 participant students of varying demographic variables. For example, according to gender, they were divided between 162 males (60.0%) and 108 females (40.0%). Based on age, the study sample had 36 18-25 years old participants (13.3%), 126 students ranging between 26-33 years old (46.7%) and 108 subjects having 34 years old or more (40.0%). Furthermore, according to their academic majors, the study sample included 100 theoretical/arts and humanities major students (37.0%), further sub-divided into 39 arts and educational major students

(14.4%), 21 Sharia/Islamic Studies and administrative major students (7.8%) and 40 legal major students (14.8%). Besides, the sample also had 170 applied/scientific major students (63.0%), in turn sub-distributed into 76 scientific and engineering major students (28.1%) and 94 medical and nursing major students (34.8%). Finally, in terms of current scholarship degree, the study sample included all three undergraduate and postgraduate levels, i.e. 18 bachelor's alumni (6.7%), 90 master's obtainers (33.3%) and 162 doctorate holders (60.0%).

2-General Results for Saudi Scholarship Students' Perceptions of ChatGPT Technology:

The descriptive statistical data derived from the administered survey questionnaire were tabulated calculating the mean score, standard deviation and relative weight of each item. Besides, the obtained results were arranged according to the mean score values of the questionnaire items and their overall mean score. The following Table 2 shows the overall descriptive results for participant Saudi scholarship students' perceptions of ChatGPT technology's uses at academic study.

Table 2: Overall Results for ChatGPT Technology's Uses at Academic
Study from the Perspective of Saudi Scholarship Students (N=270)

ubS-Dimensions	Item Number	Mean Score	Standard Deviation	Relative Weight	Judgement	Rank
First Dimension: ChatGPT Technology's Use Level	3	3.511	0.824	70.2%	High	3

ubS-Dimensions	Item Number	Mean Score	Standard Deviation	Relative Weight	Judgement	Rank
Second Dimension: ChatGPT Technology's Use Motivations	12	4.322	0.801	86.4%	Very High	1
Third Dimension: Perceptions of ChatGPT Technology's Benefits	18	3.763	0.898	75.3%	High	2

It's clear from Table 2 that participant students' perceptions had "high" levels for both dimensions of "ChatGPT technology's use level" and "perceptions of ChatGPT technology's benefits" whereas the remaining "ChatGPT technology's use motivations" dimension enjoyed a "very high" perception level.

3-Results for Answering the First Question:

The first question of the current study states, "What is ChatGPT technology's use level among Saudi scholarship students currently studying at UK universities?". The following Table 3 indicates the results for the study first dimension of "ChatGPT technology's use level" at academic study according to participant Saudi scholarship students:

Table 3: Descriptive Statistics for ChatGPT Technology's Use Level at

Academic Study from the Perspective of Saudi Scholarship Students (N=270)

No	Items	Mean Score	Standard Deviation	Relative Weight	Use Level	Rank
1	Use of ChatGPT technology to complete study tasks, assignments and activities.	3.604	0.713	72.1%	High	1
2	Use of ChatGPT technology to help in preparing research studies.	3.396	0.801	67.9%	Moderate	3
3	Use of ChatGPT technology to obtain required information related to academic courses or research studies.	3.533	0.959	70.7%	High	2
Overall Mean Score of the First Dimension		3.511		70.2%	High	

Table 4 clearly indicated that the study first dimension had an overall mean score of 3.511, thus indicating that participant students enjoyed a "high" "ChatGPT technology's use level" at academic study while all its items ranged between "moderate" and "high".

4-Results for Answering the Second Question:

The second question of the current study states, "What are ChatGPT technology's use motivations from the point of view of Saudi scholarship students currently studying at UK universities?". The following Table 4 sheds further light on the results for the study second dimension of "ChatGPT technology's use motivations" at academic study from participant Saudi scholarship students' point of view:

Table 4: Descriptive Statistics for ChatGPT Technology's Use Motivations at Academic Study from the Perspective of Saudi Scholarship Students (N=270)

No	Items	Mean Score	Standard Deviation	Relative Weight	Acceptance Level	Rank
1	ChatGPT technology is generally easy to use.	4.611	0.610	92.2%	Very High	3
2	Many of my other fellow collegemates already use ChatGPT technology.	4.411	0.789	88.2%	Very High	6
3	I expect ChatGPT technology to have positive impacts on my own effectiveness and productivity.	4.267	1.000	85.3%	Very High	9
4	ChatGPT technology is largely cost-effective.	4.533	0.619	90.7%	Very High	4
5	ChatGPT technology provides information rapidly, saving time and effort.	4.789	0.549	95.8%	Very High	1
6	ChatGPT technology is always available 24/7.	4.733	0.773	94.7%	Very High	2
7	ChatGPT technology can process natural languages.	3.989	0.985	79.8%	High	10
8	ChatGPT technology can learn without intensive training.	4.400	0.612	88.0%	Very High	7
9	ChatGPT technology is compatible with the nature of my designated tasks, assignments and research studies.	3.867	1.149	77.3%	High	11
10	ChatGPT technology personally interacts with users.	4.333	0.597	86.7%	Very High	8
11	ChatGPT technology respects users' privacy.	3.467	1.312	69.3%	High	12
12	I enjoy using ChatGPT as an emerging technology.	4.467	0.619	89.3%	Very High	5
Overall Mean Score of the Second Dimension		4.322		86.4%	Very High	

It's clear from Table 5 that the study second dimension had an overall mean score of 4.322, thus indicating that participant students enjoyed "very high" "ChatGPT technology's use motivations" at academic study while all its items ranged between "high" and "very high".

5-Results for Answering the Third Question:

The third question of the current study states, "What are the perceptions of Saudi scholarship students currently studying at UK universities about ChatGPT technology's benefits?". The following Table 6 highlights the results for the study third dimension of "perceptions of ChatGPT technology's benefits" at academic study among participant Saudi scholarship students:

Table 5: Descriptive Statistics for Perceptions of ChatGPT Technology's Benefits at Academic Study from the Perspective of Saudi Scholarship Students (N=270)

No	Items	Mean Score	Standard Deviation	Relative Weight	Benefit Level	Rank
1	I benefit from ChatGPT technology in helping to complete my homework and study assignments.	3.800	0.654	76.0%	High	8
2	I benefit from ChatGPT technology as an expert assistant for simplifying difficult concepts and ideas into an understandable language.	4.533	0.500	90.7%	Very High	1
3	I benefit from ChatGPT technology in generating a list of proposed ideas or topics for my research projects and studies.	4.200	0.401	84.0%	High	3
4	I employ ChatGPT technology for editing and proofreading purposes.	4.167	1.130	83.3%	High	6
5	I employ ChatGPT technology in	3.867	1.149	77.3%	High	7

No	Items	Mean Score	Standard Deviation	Relative Weight	Benefit Level	Rank
	paraphrasing texts in a different way.					
6	I employ ChatGPT technology in compiling, synthesizing and organizing literature and previous studies.	3.00	1.157	60.0%	Moderate	17
7	I benefit from ChatGPT technology in formulating research questions or hypotheses to test.	3.467	0.886	69.3%	High	15
8	I benefit from ChatGPT technology in refining the formulation of research topics, problems and projects.	3.622	0.812	72.4%	High	12
9	ChatGPT technology enables suggesting many keywords and resources related to various academic and research topics.	4.189	0.557	83.8%	High	4
10	ChatGPT technology helps to identify the international and local institutions, initiatives and standards related to the various research topics of interest.	3.733	0.930	74.7%	High	10
11	I benefit from ChatGPT technology in summarizing the main ideas of research studies and articles in an understandable way.	4.411	0.493	88.2%	Very High	2
12	I benefit from ChatGPT technology in designing data collection and analysis plans.	3.600	1.145	72.0%	High	14
13	I can use ChatGPT technology in interpreting data included in tables and statistical figures.	3.744	0.839	74.9%	High	9
14	ChatGPT technology enables me to check if some certain texts are literally copied from other information resources.	3.011	1.092	60.2%	Moderate	16
15	I benefit from ChatGPT technology in checking for adopting a specific citation style in preparing the	2.933	1.239	58.7%	Moderate	18

No	Items	Mean Score	Standard Deviation	Relative Weight	Benefit Level	Rank
	reference list/bibliography.					
16	I benefit from ChatGPT technology in solving difficult or complex issues/problems.	3.667	1.302	73.3%	High	11
17	I benefit from ChatGPT technology in accessing other or alternative viewpoints on a given topic.	3.611	1.094	72.2%	High	13
18	I benefit from ChatGPT technology in helping to write better research articles in terms of coherence and organization of ideas.	4.178	0.784	83.6%	High	5
Overall Mean Score of the Third Dimension		3.763		75.3%	High	

Table 5 clearly illustrated that the study third dimension had an overall mean score of 3.763, thus indicating that participant students enjoyed "high" "perceptions of ChatGPT technology's benefits" at academic study while all its items ranged between "moderate" and "very high".

6-Results for Answering the Fourth Question:

The fourth question of the current study states, "Are there significant differences in the perceptions of Saudi scholarship students currently studying at UK universities regarding ChatGPT technology's use level, motivations and benefits that can be attributed to some of their selected demographic variables (i.e. gender, academic major and current scholarship degree)?". To answer such question, the following four consecutive tables (see Tables 6-9) summarize the obtained results for participant Saudi scholarship students' perceptions

of ChatGPT technology's uses at academic study and their potential significant differences from the statistical perspective:

Table 6: Distribution of T-Test Results for the Significant Differences between the Mean Scores of Participant Saudi Scholarship Students' Responses Regarding ChatGPT Technology's Uses at Academic Study According to the Gender Variable (N=270)

Questionnaire Dimensions	Gender	Number	Mean Score	Standard Deviation	Degrees of Freedom	T-Value	Significance Value	Statistical Significance
First Dimension: ChatGPT Technology's Use Level	Males	162	10.778	1.698	179.92	2.328	0.021*	Significant
	Females	108	10.170	2.350				
Second Dimension: ChatGPT Technology's Use Motivations	Males	162	50.111	4.388	155.29	5.454	0.00*	Significant
	Females	108	54.500	7.557				
Third Dimension: Perceptions of ChatGPT Technology's Benefits	Males	162	67.667	9.040	227.36	0.147	0.883	Not Significant
	Females	108	67.833	9.161				

*** Significant at the 0.05 Level**

First, Table 6 results indicated that there were significant differences between the mean scores of participant students' responses regarding the questionnaire's first dimension of "ChatGPT technology's use level" at the ($\alpha \leq 0.05$) level, according to the gender variable (males vs. females), in favor of "male" students. Similarly, results also highlighted that there were significant differences between the mean

scores of participant students' responses regarding the questionnaire's second dimension of "ChatGPT technology's use motivations" at the ($\alpha \leq 0.05$) level, according to the gender variable (males vs. females), in favor of "female" students. However, results, on the other hand, found no significant differences between the mean scores of participant students' responses regarding the questionnaire's third dimension of "perceptions of ChatGPT technology's benefits", according to the gender variable (males vs. females).

Table 7: Distribution of T-Test Results for the Significant Differences between the Mean Scores of Participant Saudi Scholarship Students' Responses Regarding ChatGPT Technology's Uses at Academic Study According to the Academic Major Variable (N=270)

Questionnaire Dimensions	Academic Major	Number	Mean Score	Standard Deviation	Degrees of Freedom	T-Value	Significance Value	Statistical Significance
First Dimension: ChatGPT Technology's Use Level	Theoretical/ Arts and Humanities Majors	100	10.260	2.182	183.67	1.661	0.099	Not Significant
	Applied/ Scientific Majors	170	10.694	1.878				
Second Dimension: ChatGPT Technology's Use Motivations	Theoretical/ Arts and Humanities Majors	100	50.560	7.039	172.24	2.518	0.013*	Significant
	Applied/ Scientific Majors	170	52.635	5.591				
Third Dimension: Perceptions of ChatGPT Technology's Benefits	Theoretical/ Arts and Humanities Majors	100	72.020	8.238	268	6.379	0.00*	Significant
	Applied/ Scientific Majors	170	65.212	8.601				

* Significant at the 0.05 Level

In tandem, Table 7 results revealed no significant differences between the mean scores of participant students' responses regarding the questionnaire's first dimension of "ChatGPT technology's use level", according to the academic major variable (theoretical/arts and humanities majors vs. applied/scientific majors). On the contrary, results found significant differences between the mean scores of participant students' responses regarding the questionnaire's both second and third dimensions of "ChatGPT technology's use motivations" and "perceptions of ChatGPT technology's benefits" at the ($\alpha \leq 0.05$) level, according to the academic major variable (theoretical/arts and humanities majors vs. applied/scientific majors), respectively, in favor of "applied/scientific major" and "theoretical/arts and humanities major" students.

Table 8: Distribution of Kruskal–Wallis H-Test Results for the Significant Differences between the Mean Scores of Participant Saudi Scholarship Students' Responses Regarding ChatGPT Technology's Uses at Academic Study According to the Current Scholarship Degree Variable (N=270)

Questionnaire Dimensions	Current Scholarship Degree	Repetition	Average Rank	Degrees of Freedom	Chi-Square ($\chi 2$) Value	Significance Value	Statistical Significance
First Dimension: ChatGPT Technology's Use Level	Bachelor's	18	73	2	55.047	0.00*	Significant
	Master's	90	182.1	267			
	Doctorate	162	116.556	269			
Second	Bachelor's	18	135.5	2	55.049	0.00*	Significant

Questionnaire Dimensions	Current Scholarship Degree	Repetition	Average Rank	Degrees of Freedom	Chi-Square ($\chi 2$) Value	Significance Value	Statistical Significance
Dimension: ChatGPT Technology's Use Motivations	Master's	90	184.1	267			
	Doctorate	162	108.5	269			
Third Dimension: Perceptions of ChatGPT Technology's Benefits	Bachelor's	18	99.5	2			
	Master's	90	126.5	267	7.239	0.027*	Significant
	Doctorate	162	144.5	269			

*** Significant at the 0.05 Level**

Furthermore, Table 8 results highlighted the presence of significant differences between the mean scores of participant students' responses regarding the questionnaire's all three dimensions of "ChatGPT technology's use level", "ChatGPT technology's use motivations" and "perceptions of ChatGPT technology's benefits" at the ($\alpha \leq 0.05$) level, according to the current scholarship degree variable (bachelor's vs. master's vs. doctorate) in favor of all different tackled categories of "bachelor's", "master's" and "doctorate" students. As a consequence, in order to reveal the source of significant differences between the mean scores of participant students' responses according to the current scholarship degree variable, the Mann–Whitney U-Test was used, thus culminating into the results shown in the following Table 9:

Table 9: Distribution of Mann–Whitney U-Test Results for Identifying the Source of Significant Differences between the Mean Scores of Participant Saudi Scholarship Students' Responses

Regarding ChatGPT Technology's Uses at Academic Study According to the Current Scholarship Degree Variable (N=270)

Questionnaire Dimensions	Current Scholarship Degree	Number	Total Ranks	Average Rank	U-alueV	Significance Value	Statistical Significance
First Dimension: ChatGPT Technology's Use Level	Bachelor's	18	495.00	27.50	324.00	0.00*	Significant
	Master's	90	5391.00	59.90			
	Bachelor's	18	990.00	55.00	819.00	0.001*	Significant
	Doctorate	162	15300.00	94.44			
	Master's	90	15093.00	167.70	3582.00	0.00*	Significant
	Doctorate	162	16785.00	103.61			
Second Dimension: ChatGPT Technology's Use Motivations	Bachelor's	18	495.00	27.50	324.00	0.00*	Significant
	Master's	90	5391.00	59.90			
	Bachelor's	18	2115.00	117.50	972.00	0.020*	Significant
	Doctorate	162	14175.00	87.50			
	Master's	90	15273.00	169.70	3402.00	0.00*	Significant
	Doctorate	162	16605.00	102.50			
Third Dimension: Perceptions of ChatGPT Technology's Benefits	Bachelor's	18	819.00	45.50	648.00	0.169	Not Significant
	Master's	90	5067.00	56.30			
	Bachelor's	18	1143.00	63.50	972.00	0.020*	Significant
	Doctorate	162	15147.00	93.50			
	Master's	90	10413.00	115.70	6318.00	0.078	Not Significant
	Doctorate	162	21465.00	132.50			

* Difference between the Mean Scores is Significant at the 0.05 Level

In sum, according to Table 9, the statistical results analysis demonstrated the following key nine findings revealed by the current study:

There were significant differences between the mean scores of participant "bachelor's" and "master's" students' responses regarding the questionnaire's first dimension of "ChatGPT technology's use level" at the ($\alpha \leq 0.05$) level in favor of "master's" students;

There were significant differences between the mean scores of participant "bachelor's" and "doctorate" students' responses regarding

the questionnaire's first dimension of "ChatGPT technology's use level" at the ($\alpha \leq 0.05$) level in favor of "doctorate" students;

There were significant differences between the mean scores of participant "master's" and "doctorate" students' responses regarding the questionnaire's first dimension of "ChatGPT technology's use level" at the ($\alpha \leq 0.05$) level in favor of "master's" students;

There were significant differences between the mean scores of participant "bachelor's" and "master's" students' responses regarding the questionnaire's second dimension of "ChatGPT technology's use motivations" at the ($\alpha \leq 0.05$) level in favor of "master's" students;

There were significant differences between the mean scores of participant "bachelor's" and "doctorate" students' responses regarding the questionnaire's second dimension of "ChatGPT technology's use motivations" at the ($\alpha \leq 0.05$) level in favor of "bachelor's" students;

There were significant differences between the mean scores of participant "master's" and "doctorate" students' responses regarding the questionnaire's second dimension of "ChatGPT technology's use motivations" at the ($\alpha \leq 0.05$) level in favor of "master's" students;

There were no significant differences between the mean scores of participant "bachelor's" and "master's" students' responses regarding the questionnaire's third dimension of "perceptions of ChatGPT technology's benefits";

There were significant differences between the mean scores of participant "bachelor's" and "doctorate" students' responses regarding the questionnaire's third dimension of "perceptions of ChatGPT technology's benefits" at the ($\alpha \leq 0.05$) level in favor of "doctorate" students; and

There were no significant differences between the mean scores of participant "master's" and "doctorate" students' responses regarding

the questionnaire's third dimension of "perceptions of ChatGPT technology's benefits".

*** Discussion of Results**

Generally speaking, the results of the current study found a "high" ChatGPT technology's use level among Saudi scholarship students where the first dimension had an overall mean score of 3.511. Such positive results are consistent with those previously concluded by Das & Madhusudan (2024) and can be interpreted in light of the Information-Seeking Behavior (ISB) perspective emphasizing participant students' persistent desire to obtain accurate and rapid information helping them in adapting to their overseas academic and social environments abroad. Notably, according to that model, such a high use level basically reflects those students' strong desire to improve their academic performance and solve the problems they may encounter in their academic studies as they often find themselves interacting with effective high-tech educational environments continuously requiring the provision of new and advanced research and study resources. As a result, ChatGPT technology is indeed an ideal tool for them to provide quick and accurate answers at various fields. On the other hand, the Kingdom of Saudi Arabia (KSA) is considered one of the world's leading countries in digital transformation and technology use in education, thus enhancing Saudi students' awareness of the increasing importance of such smart tools as ChatGPT technology and, by extension, their use levels. Besides, Saudi scholarship programs enjoy a generous governmental support that continuously encourages their affiliated students to use the up-to-date latest advanced technologies.

In a related context, the study results also showed that the most prominent motivations for participant Saudi scholarship students to

use ChatGPT technology were, respectively, its "rapid provision of information, saving time and effort", "always on availability 24/7" and "ease of use, in general". On the contrary, their least motivations were, in order, "processing natural languages", "compatibility with the nature of designated tasks, assignments and research studies" and "respecting users' privacy". As a consequence, such results shedding further light on ChatGPT technology's adoption most pivotal influencing factors are consistent with those previously concluded by both Albayati (2024) and Gulati et al (2024) but contradict those found by Shaengchart et al (2023).

In light of the various technology acceptance theories and models in previous literature, these results can be interpreted as follows: First, regarding the rapid provision of information, such motivation can be explained based on the Technology Acceptance Model (TAM) focusing on the "Perceived Usefulness" factor. Particularly in the peculiar case of participant scholarship students, rapid provision of information is one of the most important factors contributing to making ChatGPT technology useful for them in carrying out their assigned academic tasks, thus enhancing their acceptance of its use in practice. As for availability, it can be explained, in turn, using the Diffusion of Innovation (DOI) Theory as ChatGPT technology is always available online, making it easy for those students to use it anytime, anywhere. Besides, ease of use, in turn, aligns with one of TAM's other key influencing factors, namely "Perceived Ease of Use", emphasizing that students usually perceive technology use as an effortless activity, therefore making it easy for them to easily integrate it into their academic studies without the need for complex technical training.

Furthermore, the study results also indicated a "high" level of participant scholarship students' perceptions of ChatGPT technology's benefits with the third dimension having an overall mean score of 3.763. Again, such results correspond to those previously found by several relevant studies in literature highlighting ChatGPT technology's multitude of benefits from users' perspective (e.g. Shoufan, 2023; Karunaratne & Adesina, 2023; Dai et al., 2023; Mohammed et al., 2023). Notably, such results can be interpreted in light of the ISB perspective deeply appreciating the crucial role played by ChatGPT technology's use in meeting those students' informational needs in an immediate, accurate and appropriate manner enhancing such advanced technology's potential benefits for information search and retrieval both quickly and easily for various academic purposes. Besides, in light of the Task-Technology Fit (TTF) model, participant Saudi scholarship students' high level of benefit from ChatGPT technology can, in turn, be explained by the high compatibility between their designated academic tasks and ChatGPT technology's use that has been empirically proven effective in providing an adequate academic support matching the fulfillment of those students' academic task requirements.

Finally, the study results revealed significant differences between the mean scores of participant Saudi scholarship students' perceptions of ChatGPT technology's use level, motivations and benefits at academic study according to their selected demographic variables, namely, gender, academic major and current scholarship degree. Noteworthy, this result contradicts with those provided by the previous work of Das & Madhusudan (2024) who found no significant differences between students' perceptions of ChatGPT technology according to both gender and academic major variables. Anyway, the results of the

current study clearly reflected participant students' wide differences in their respective approaches and styles for dealing with the used ChatGPT technology based on their various personal and academic backgrounds. Therefore, in light of such findings, it's of considerable importance to take such significant influencing factors into account when examining those students' perceptions of ChatGPT technology's adoption and use by subsequent studies as well as designing, delivering and evaluating any future instructional or training programs related to ChatGPT technology's use in education.

*** Final Conclusions, Suggestions and Recommendations**

In a nutshell, the results of the current study generally showed that Saudi scholarship students use ChatGPT technology extensively, which is in line with contemporary ongoing Saudi trends towards promoting digital transformation at various sectors. Results also identified a plethora of key influencing factors motivating participant students to use ChatGPT technology, most notably "Ease of Use", "Perceived Usefulness" and "Social Impact", as well as its multiple benefits at academic study from its users' perspective, again consistent with the results of several relevant previous studies providing us with many of its important applied implications in practice. A case in point here is that nowadays, ChatGPT technology is increasingly getting closer to being an integral part of current Saudi scholarship students' so-called "informational and research lifestyle". Therefore, information technology and science specialists should take into account those students' multiple ChatGPT technology's use motivations, thus indicating that ChatGPT technology should indeed be one of the most fundamental topics on such specialists' top-priority agenda over the next few years. Accordingly, it's of utmost importance to provide Saudi students, researchers, faculty members

and staff of overseas Saudi Arabian cultural bureaus worldwide with more advanced, specialized, intensive and continuous training and professional development programs tackling ChatGPT technology's effective utilization as a valuable high-tech tool serving their various information purposes during the foreseeable future.

*** Proposed Further Research**

Finally, it's noticeable that the results of current study raise more questions than they answer, possibly requiring conducting further more additional research studies within the foreseeable future, particularly focusing on, but not limited to, such diverse proposed research areas as examining ChatGPT technology's adoption influencing factors from its Saudi scholarship student users' perspective employing different technology acceptance theories and models to identify the key factors contributing most significantly to the prediction of their ChatGPT technology's use level, motivations and benefits at academic study. Besides, it's also necessary to conduct more evaluation studies assessing ChatGPT technology's usability as an advanced high-tech information system side by side with its evaluation in light of the utilization-based Information Systems (IS) Success Model (ISSM). Since the current study methodologically relied on the quantitative cross-sectional survey design, it basically limited itself to providing a quick and cursory look at several uses of ChatGPT technology which are, by nature, quite diverse due to its multiple ever-expanding technical capabilities. Therefore, there is an urgent need to conduct more systematic research studies shedding further light on specific uses of ChatGPT technology, especially using qualitative research methods, in order to obtain more comprehensive and in-depth inquiries on ChatGPT technology and its possible use disadvantages. Furthermore, there is also a similar need to investigate

ChatGPT technology's use actual effects on overseas Saudi scholarship students abroad employing multiple methodological approaches and tools. In particular, future researchers need to explore those students' Information-Seeking Behavior (ISB) when using ChatGPT technology with the assistance of such various research methods and data collection sources as User Interface (UI) screen designs, field observations, product evaluations and in-depth interviews. In conclusion, it's also important to identify ChatGPT technology's use drawbacks and challenges in depth, relying on an innovative mix of both survey and qualitative data.

References

Abdalla, R.A. (2024). Examining awareness, social influence, and perceived enjoyment in the TAM framework as determinants of ChatGPT: Personalization as a moderator. Journal of Open Innovation: Technology, Market, and Complexity, 10(3), 1-11.

Adarkwah, M.A., Ying, C., Mustafa, M.Y., & Huang, R. (2023, August 31st-Sep 1st). Prediction of learner information-seeking behavior and classroom engagement in the advent of ChatGPT. Paper Presented at the Proceedings of the 7th International Conference on Smart Learning Environments (ICSLE'2023), Bangkok, Thailand.

Al Shboul, M.K.I., Alwreikat, A., & Alotaibi, F.A. (2024). Investigating the use of ChatGPT as a novel method for seeking health information: A qualitative approach. Science and Technology Libraries, 43(3), 225-234.

Al-Amiri, A.M. (2024). Role of artificial intelligence applications in developing teachers' performance in the Sultanate of Oman: ChatGPT model. Arab Journal of Specific Education, 8(31), 19-36.

Albayati, H. (2024). Investigating undergraduate students' perceptions and awareness of using ChatGPT as a regular assistance tool: A user acceptance perspective study. Computers and Education: Artificial Intelligence, 6, 1-17.

Anik, M.H., Raaz, S.N.C., & Khan, N. (2023). Embracing AI Assistants: Unraveling Young Researchers' Journey with ChatGPT in Science Education Thesis Writing. Retrieved from: https://assets-eu.researchsquare.com/files/rs-3481002/v1/b95da42 2-16c9-4a8c-acac-5436384f4b04.pdf.

Ayoub, D., Metawie, M., & Fakhry, M. (2024). AI-ChatGPT usage among users: Factors affecting intentions to use and the moderating effect of privacy concerns. MSA-Management Sciences Journal, 3(2), 120-152.

Barakat, M., Salim, N.A., & Sallam, M. (2024). Perspectives of University Educators Regarding ChatGPT: A Validation Study Based on the Technology Acceptance Model. Retrieved from: https://assets-eu.researchsquare.com/files/rs-3919524/v1/5ed2bb56-cb56-49a5-a8a2-c6d0811301e3.pdf?c=1718345806.

Chen, L., & Shimada, A. (2023, November 28th-December 1st). Designing worksheet for using ChatGPT: Towards enhancing information retrieval and judgment skills. Paper Presented at the Proceedings of the IEEE 12th International Conference on Teaching, Assessment and Learning for Engineering (TALE'2023), Auckland, New Zealand.

Dai, Y., Lai, S., Lim, C.-P., & Liu, A. (2023). ChatGPT and its impact on research supervision: Insights from Australian postgraduate research students. Australasian Journal of Educational Technology, 39(4), 74-88.

Das, S.R., & Madhusudan, J.V. (2024). Perceptions of higher education students towards ChatGPT usage. International Journal of Technology in Education, 7(1), 86-106.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340.

Duong, C.-D., Vu, T.-N., & Ngo, T.-V.N. (2023). Applying a modified technology acceptance model to explain higher education students' usage of ChatGPT: A serial multiple mediation model with knowledge sharing as a moderator. International Journal of Management Education, 21(3), 1-18.

El-Gamal, H.S.A. (2023). ChatGPT linguistic model and its application in the field of libraries and information: An exploratory

study. International Journal of Library and Information Sciences, 10(4), 116-163.

Firat, M. (2023). What ChatGPT means for universities: Perceptions of scholars and students. Journal of Applied Learning and Teaching, 6(1), 57-63.

Fontenelle-Tereshchuk, D. (2024). Academic writing and ChatGPT: Students transitioning into college in the shadow of the COVID-19 pandemic. Discover Education, 3, 1-10.

Frederick, D.E. (2023). ChatGPT: A viral data-driven disruption in the information environment. Library Hi Tech News, 40(3), 4-10.

Gao, Z., Li, L., Ma, S., Wang, Q., Hemphill, L., & Xu, R. (2024). Examining the potential of ChatGPT on biomedical information retrieval: Fact-checking drug-disease associations. Annals of Biomedical Engineering, 52(8), 1919-1927.

Grassini, S., Aasen, M.L., & Møgelvang, A. (2024). Understanding university students' acceptance of ChatGPT: Insights from the UTAUT2 model. Applied Artificial Intelligence, 38(1), 1-24.

Gulati, A., Saini, H., Singh, S., & Kumar, V. (2024). Enhancing learning potential: Investigating marketing students' behavioral intentions to adopt ChatGPT. Marketing Education Review, 34(3), 201-234.

Hernandez, A.A., Padilla, J.R.C., & Montefalcon, M.D.L. (2023, October 2nd). Information seeking behavior in ChatGPT: The case of programming students from a developing economy. Paper Presented at the Proceedings of the IEEE 13th International Conference on System Engineering and Technology (ICSET'2023), Shah Alam, Malaysia.

Hernández-Leo, D. (2023, June 29-30th). ChatGPT and generative AI in higher education: User-centered perspectives and implications for

learning analytics. Paper Presented at the Proceedings of the 11th Annual Conference of the Learning Analytics Summer Institute Spain 2023 (LASI Spain'2023), Madrid, Spain.

Hersh, W. (2024). Search still matters: Information retrieval in the era of generative AI. Journal of the American Medical Informatics Association, 31(9), 2159-2161.

Hirvonen, N., Jylhä, V., Lao, Y., & Larsson, S. (2024). Artificial intelligence in the information ecosystem: Affordances for everyday information seeking. Journal of the Association for Information Science and Technology, 75(10), 1152-1165.

Huang, Y., & Huang, J.-X. (2024). Exploring ChatGPT for next-generation information retrieval: Opportunities and challenges. Web Intelligence, 22(1), 31-44.

Jin, Q., Leaman, R., & Lu, Z. (2023). Retrieve, summarize, and verify: How will ChatGPT impact information seeking from the medical literature? Journal of the American Society of Nephrology, 34(8), 1302-1304.

Karunaratne, T., & Adesina, A. (2023, October 26-27th). Is it the new Google? Impact of ChatGPT on students' information search habits. Paper Presented at the Proceedings of the 22nd European Conference on e-Learning (ECEL'2023), Pretoria, South Africa.

Khalifa, A.A., & Ibrahim, M.A. (2024). Artificial Intelligence (AI) and ChatGPT involvement in scientific and medical writing, a new concern for researchers: A scoping review. Arab Gulf Journal of Scientific Research, 42(4), 1770-1787.

Kirtania, D.K. (2023). OpenAI ChatGPT for Library and Information Science (LIS) Professionals. Retrieved from: https://ssrn.com/abstract=4404903.

Lai, C.-Y., Cheung, K.-Y., & Chan, C.-S. (2023). Exploring the role of intrinsic motivation in ChatGPT adoption to support active learning: An extension of the technology acceptance model. Computers and Education: Artificial Intelligence, 5, 1-13.

Lee, S., Jones-Jang, S.-M., Chung, M., Kim, N., & Choi, J. (2024). Who is using ChatGPT and why? Extending the Unified Theory of Acceptance and Use of Technology (UTAUT) model. Information Research an International Electronic Journal, 29(1), 54-72.

Ma, X., & Huo, Y. (2023). Are users willing to embrace ChatGPT? Exploring the factors on the acceptance of chatbots from the perspective of AIDUA framework. Technology in Society, 75, 1-13.

McDonald, S.M. (2012). Perception: A concept analysis. International Journal of Nursing Knowledge, 23(1), 2-9.

McFayden, T.C., Bristol, S., Putnam, O., & Harrop, C. (2024). ChatGPT: Artificial intelligence as a potential tool for parents seeking information about autism. Cyberpsychology, Behavior, and Social Networking, 27(2), 135-148.

Menon, D., & Shilpa, K. (2023). "Chatting with ChatGPT": Analyzing the factors influencing users' intention to use the OpenAI's ChatGPT using the UTAUT model. Heliyon, 9(11), 1-19.

Mohammed, A.A.Q., Al-Ghazali, A., & Alqohfa, K.A.S. (2023). Exploring ChatGPT uses in higher studies: A case study of Arab postgraduates in India. Journal of English Studies in Arabia Felix, 2(2), 8-15.

Molla, C., Mani, L., Bhuiyan, M.R., & Hossain, R. (2023). Examining the potential usages, features, and challenges of using ChatGPT technology: A PRISMA-based systematic review. Migration Letters, 20(9), 927-945.

Morocco-Clarke, A., Sodangi, F.A., & Momodu, F. (2024). The implications and effects of ChatGPT on academic scholarship and authorship: A death knell for original academic publications? Information and Communications Technology Law, 33(1), 21-41.

Niloy, A.C., Bari, M.A., Sultana, J., Chowdhury, R., Raisa, F.M., Islam, A., Mahmud, S., Jahan, I., Sarkar, M., Akter, S., Nishat, N., Afroz, M., Sen, A., Islam, T., Tareq, M.H., & Hossen, M.A. (2024). Why do students use ChatGPT? Answering through a triangulation approach. Computers and Education: Artificial Intelligence, 6, 1-13.

Pallivathukal, R.G., Soe, H.-H.K., Donald, P.M., Samson, R.S., Ismail, A.H., & Ismail, A.R.H.I.H. (2024). ChatGPT for academic purposes: Survey among undergraduate healthcare students in Malaysia. Cureus, 16(1), 1-18.

Qenawi, Y.M.M. (2024). Using ChatGPT as a smart tool for data analysis at libraries: An exploratory study. Egyptian Journal of Information Sciences, 11(1), 505-540.

Raman, R., Mandal, S., Das, P., Kaur, T., Sanjanasri, J.P., & Nedungadi, P. (2023). University Students as Early Adopters of ChatGPT: Innovation Diffusion Study. Retrieved from: https://assets-eu.researchsquare.com/files/rs-2734142/v1/6fa11de 5-21ab-42bf-9870-b2def371fb90.pdf.

Raman, R., Mandal, S., Das, P., Kaur, T., Sanjanasri, J.P., & Nedungadi, P. (2024). Exploring university students' adoption of ChatGPT using the diffusion of innovation theory and sentiment analysis with gender dimension. Human Behavior and Emerging Technologies, 2024(1), 1-21.

Repo, V. (2023). Artificial intelligence and academic integrity: A survey of students' perceptions and behaviors, case ChatGPT. MA thesis, Aalto University, Espoo, Finland.

Righi, I. (2024). ChatGPT's role in enriching jurisprudence research. In I. Rahmani, M. Lifa & A. Tedjani (Eds.), Artificial Intelligence and Its Applications at Islamic Sciences (pp. 353-370). El Oued, Algeria: Publications of the Laboratory of Doctrinal and Judicial Studies, Faculty of Islamic Sciences, University of Martyr Hamma Lakhdar-El Oued.

Rogers, E.M. (2003). Diffusion of Innovations (5th ed.). New York, NY: Free Press.

Ruiz Estrada, M.A. (2023). Analyzing Information Retrieval in Economic Research: ChatGPT-4 vs. Google Scholar. Retrieved from: https://ssrn.com/abstract=460 5823.

Shaengchart, Y., Bhumpenpein, N., Kongnakorn, K., Khwannu, P., Tiwtakul, A., & Detmee, S. (2023). Factors influencing the acceptance of ChatGPT usage among higher education students in Bangkok, Thailand. Advance Knowledge for Executives, 2(4), 1-14.

Shoufan, A. (2023). Exploring students' perceptions of ChatGPT: Thematic analysis and follow-up survey. IEEE Access, 11, 38805-38818.

Strzelecki, A. (2024). Students' acceptance of ChatGPT in higher education: An extended unified theory of acceptance and use of technology. Innovative Higher Education, 49(2), 223-245.

Tiwari, C.K., Bhat, M.A., Khan, S.T., Subramaniam, R., & Khan, M.A.I. (2024). What drives students toward ChatGPT? An investigation of the factors influencing adoption and usage of ChatGPT. Interactive Technology and Smart Education, 21(3), 333-355.

Ullah, A., Baber, M.U., & Arshad, N. (2024). Assessing the transformative influence of ChatGPT on research practices among scholars in Pakistan. Mesopotamian Journal of Big Data, 2024, 1-10.

Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478.

Ventayen, R.J.M. (2023). ChatGPT by OpenAI: Students' Viewpoint on Cheating Using Artificial Intelligence-Based Application. Retrieved from: https://ssrn.com/ abstract=4361548.

von Garrel, J., & Mayer, J. (2023). Artificial intelligence in studies: Use of ChatGPT and AI-based tools among students in Germany. Humanities and Social Sciences Communications, 10, 1-9.

Zhang, J., Chen, Y., Niu, N., & Liu, C. (2023). Evaluation of ChatGPT on Requirements Information Retrieval under Zero-Shot Setting. Retrieved from: https://ssrn.com/abstract=4450322.

Zheng, Y., Seppänen, O., Seiß, S., & Melzner, J. (2023). Testing ChatGPT-aided SPARQL generation for semantic construction information retrieval. Paper Presented at the Proceedings of the 23rd International Conference on Construction Applications of Virtual Reality (CONVR'2023), Florence, Italy.