



A Study On Evaluating The Antecedents Of The Adoption Of Chatgpt.

Dr. Ram Kishen. Y^{1*}, Dr. Aparna Jain², Ms. Aafreen Shah³, Dr. Chetan K. Jiwani⁴

^{1*}Professor, K J Somaiya Institute of Management, Somaiya Vidyavihar University, Mumbai-400077, Email id: ramki@somaiya.edu

²Associate Professor, Head of the Department of Business Studies, S K Somaiya College, Somaiya Vidyavihar University, Mumbai-400077, Email id: aparna.jain@somaiya.edu

³Visiting Professor, Department of Business Studies, S K Somaiya College, Somaiya Vidyavihar University, Mumbai-400077, Email id: aafreen@somaiya.edu

⁴Assistant Professor, Department of Business Studies, SK Somaiya College, Somaiya Vidyavihar University, Mumbai-400077, Email id: chetan.kj@somaiya.edu

Citation: Dr. Ram Kishen. Y, et al (2024), A Study On Evaluating The Antecedents Of The Adoption Of Chatgpt. , Educational Administration: Theory and Practice, 30(6), 2243-2262, Doi: 10.53555/kuey.v30i6.4372

ARTICLE INFO ABSTRACT

The use of Artificial Intelligence chatbots for educational purposes is becoming prevalent, as they have multiple uses for learners such as generating immediate responses to inquiries about various topics, elaborating ideas, and providing explanations. They also serve as virtual tutors for students, assisting them with problem-solving and locating pertinent books, journals, and other sources to strengthen their investigations. Chatbots can help students improve their verbal communication skills, including oral and written interactions, and assist in language building by checking grammar. Additionally, they provide 24/7 accessibility, as the chatbots are available whenever students need them, encouraging learning, research, and academic advancement. With the emergence of chatbots and their multiple uses in the academic and learning processes, the author aims to explore the factors/antecedents that influence postgraduate management learners to adopt specifically only one chatbot, ChatGPT, for exploring new knowledge and bridging the knowledge gap. The author incorporated five factors of the UTAUT-2 model—effort expectancy, performance expectancy, facilitating conditions, habit, and social influence—and one construct of the TOL (Technology Opinion Leadership) model, technological innovativeness, to develop a research model that could identify the antecedents of the adoption of ChatGPT among postgraduate management learners. The research study incorporates a quantitative approach, and AMOS-26 SEM is used for statistical analysis. Overall, the sample size is 210, based on seven constructs and three items in each construct. The findings of the study indicate that only two factors significantly influence the behavioral intention of postgraduate management learners to adopt ChatGPT for academic and research work: performance expectancy and technological innovativeness.

Keywords: Artificial Intelligence, Chatbots, ChatGPT, UTAUT-2, TOL, Performance Expectancy, Technological Innovativeness, Behavioral Intention.

1. Introduction:

The upgrading and development of modern and sophisticated technology have led to the emergence of Artificial Intelligence (AI) in our current business, non-business, social, scientific, and academic environments. AI has the potential to revolutionize various industries, including research and academia. AI tools encompass a range of techniques, algorithms, and systems designed to mimic human intelligence and automate complex tasks. These tools help accelerate the pace of exploration, gain new insights, and enhance research and academic work across various domains. Natural language processing technologies significantly hold the potential to revolutionize academic and research writing.

ChatGPT is one among many chatbots that is a text-based interactive AI chatbot developed by OpenAI, an artificial intelligence research laboratory. The terminology of artificial intelligence refers to the ability of a system to accurately interpret external data, gain knowledge from such data, and apply this knowledge to achieve particular goals and tasks through flexible adaptation (Haenlein et al., 2019). OpenAI is a company focused on advancing artificial intelligence safely and beneficially. The team at OpenAI has been responsible for creating various prominent AI models, including the GPT series, of which ChatGPT is a part. ChatGPT was launched in November 2022. By January 2023, it had become the fastest-growing consumer software program with over 100 million users, raising OpenAI's worth to \$29 billion.

OpenAI provides service on a freemium basis. Currently, the GPT-3.5-based version gives free access to users, while the GPT-4-based version is a paid option, offering customers access to a more powerful model and priority access to upcoming features under the commercial name "ChatGPT Plus." The present study identifies that the GPT-3.5-based version is widely used by the respondents (approximately 95.3% of respondents) as it is freely available, and people around the world are using ChatGPT mainly for academic and research purposes. ChatGPT provides prompt responses to queries in medical science (Sharma and Thakur, 2023; Jahanshahi et al., 2022)

The main features and benefits of ChatGPT 3.5 from the perspective of postgraduate management learners are listed below:

- Natural Language Understanding.
- Knowledge retrieval
- Writing Assistance
- Coding Assistance
- Task Automation
- Language Translation
- Innovative Problem Solving
- Continuous Learning and Adaptation
- Conversational Practice

ChatGPT can be used by anyone for gaining knowledge and solving problems and cases. However, being accessible to everyone can be risky as ChatGPT can be used to seek answers to support malicious intentions in society. Furthermore, ChatGPT does not provide current data and cannot answer questions concerning recent trends post-2021. Despite these challenges, ChatGPT is useful for academic purposes and acquiring knowledge (Dwivedi et al., 2023; Lee, 2023)

The ChatGPT model evolves from the InstructGPT model designed to follow directives and provide extended information in response to prompts (ChatGPT, 2022; Cotton et al., 2023). According to OpenAI (2022), the ChatGPT AI has been trained on an enormous set of data on human interactions and can generate prompts on a wide range of topics and information. It has the potential to accurately translate text, generate content, marketing copy, summarize reports and news, and generate codes for information systems. Currently, academicians only allow the use of ChatGPT and similar tools to improve the readability and language of research articles. However, the ethical boundaries and acceptable usage of AI in academic writing are still undefined, and neither humans nor AI detection tools can reliably identify text generated by AI (Homolak, 2023). With the amplification of AI tools, their applications in education have also escalated, with the potential to provide personalized learning, flexible assessments, and impactful interactions in blended learning environments (Zhang and Aslan, 2021). This study contributes to the existing literature by integrating two research models, namely UTAUT-2 (Venkatesh et al., 2003, 2012) and the Technological Opinion Leadership model (Bruner and Kumar, 2007). The UTAUT model is widely used in research to understand the acceptance and adoption of technology in recent years. Literature analysis shows that the founding paper of the UTAUT model has been cited more than 12,000 times. Although the model is popular, research studies using this model to understand learners' adoption and acceptance of ChatGPT are limited.

Based on the two models, the following constructs are taken in the study: Facilitating Conditions, Effort Expectancy, Performance Expectancy, Social Influence, Habit, and Technological Innovativeness. Performance expectancy is "the extent to which a person believes that using the system will enable him or her to achieve improvements in job performance." Effort expectancy is "the level of ease associated with the use of the system." Social influence is "the extent to which a person believes that significant others think he or she should use the new system." Facilitating condition is "the extent to which a person believes that an organization's and technical infrastructure exist to support the use of the system" (Venkatesh et al., 2003). Habit is "the extent to which individuals have developed automatic routines or behaviors regarding technology use" (Venkatesh et al., 2012), and Technological Innovativeness is innovativeness within a specific realm of interest such as high-tech products (Flynn & Goldsmith, 1993). According to the literature, technological innovativeness means the extent to which a consumer is inspired to be the first to adopt new tech-driven products and services (Bruner & Kumar, 2007). All the constructs are further designed with items to understand their impact on the behavioral intention of postgraduate management learners to adopt ChatGPT for their academic and research work.

Ethical considerations and responsible use of AI tools are also very important in academic research. Ethical norms need to be followed while collecting data, and providing findings and conclusions. As AI technologies continue to evolve, it becomes crucial for researchers and academicians to address concerns related to data privacy, algorithmic bias, and transparency. There are also many AI tools designed to detect text generated by AI tools, for example, ZeroGPT, which is a ChatGPT, GPT-4, and AI content detector. AI tools have become a necessity in academics and research, offering numerous benefits and revolutionizing the way postgraduate management learners can do their work.

The Research tries to address two research questions:

1. What are the essential factors affecting postgraduate management learners' behavioral intention to adopt ChatGPT for academic and research work?
2. What are the effects of these essential factors of the UTAUT and the TOL on postgraduate management learners' intention to adopt ChatGPT for academic and research work?

2. Literature Review and Hypothesis Formulation.

2.1 Recent studies in the field of ChatGPT Adoption.

Authors (Years)	Study focus	Theory Applied	Sampling and areas	Methods	Factors with sig. Direct and indirect effect	Factors with no sig. effect	Findings and Suggestions	Research Gap Identification.
Menon. et al.,2023	The study aims to explore the factors impacting users' intention to use and adopt ChatGPT by employing the UTAUT model. The study investigate the moderating impact of age and experience on the use of ChatGPT.	UTAUT - Model- Construct or the factors are Performance expectancy, Effort expectancy, Social Influence, and Facilitating condition. Extended construct-perceived interactivity and privacy concerns.	Sample size - 32 participants , Nature of respondent s: India.	Qualitative research approach using semi-structured interviews.	The study does not test any hypothesis.	_____	The findings of the study demonstrate that the four factors of UTAUT, along with two extended constructs, i.e. perceived interactivity and privacy concerns, can explain users' behavioral Intentions to adopt ChatGPT. The study also found that age and experience can moderate the effect of various factors on the adoption and use of ChatGPT.	Small sample sizes. For any research findings, the reliability and validity of the data is important. The quantitative research method provides an in-depth insight into establishing a relationship between factors and deriving the most impactful factor for predicting behavioral intention.
Tiwari. et al.,2023	The study aims to identify the factors determining factors influencing students' attitudes toward the adoption of ChatGPT, for educational and	TAM - Technology Acceptance Model. UTAUT-2 model. Constructs are Perceived Usefulness, Perceived ease of use, Perceived Social Presence,	Sample size - 375 participants , Nature of respondent s: Students form various Public and Private Institutions. Oman.	Exploratory research (PLS-SEM)	H1: Perceived usefulness positively influences attitude toward using ChatGPT for academic purposes. H3: Perceived	H2: Perceived ease of use and attitude were insignificant among students for academic purposes.	The findings of the study shows that usefulness, social presence, validity, fun, and motivation, all provides favorable attitude towards using ChatGPT	Technological innovation is a construct that tries to understand the role of new technology in influencing the behavioral intention to adopt it. The research

	<p>learning purposes based on the technology acceptance model.</p>	<p>Perceived credibility, Hedonic Motivation, Attitude towards ChatGPT, and Behaviour Intention to use ChatGPT.</p>			<p>social presence positively influences attitudes toward using ChatGPT for educational purposes. H4: Perceived credibility positively influences attitudes toward using ChatGPT for educational purposes. H5: Hedonic motivation positively influences attitude toward using ChatGPT for educational purposes. H6: Students' attitude positively influences the behaviour intention to adopt ChatGPT for academic purposes.</p>		<p>Where as, the effect of perceived ease of use is not the major driver of students' attitudes to use ChatGPT.</p>	<p>study could have been more informative if it integrated with the model that could provide more insight into understanding technology adoption.</p>
--	--	---	--	--	--	--	---	---

<p>Chaudhary. et al., 2023</p>	<p>The study investigates the significant relationship between 1) Users' behaviour intention to adopt ChatGPT and their trust in the technology ;</p> <p>2) The actual use of ChatGPT with users' intention to adopt the technology ;</p> <p>3) The actual use of ChatGPT with users' trust in the technology ;</p> <p>4) Users' behaviour intention to adopt ChatGPT can partially mediate the effect of trust in the technology on its actual use.</p> <p>The study explores the factors that influence users' behaviour intention to adopt chatbot technologies and emphasize the role of trust in this process.</p>	<p>TAM - Technology Acceptance Model. Constructs are Trust, Intent to Use, and Actual Use.</p>	<p>Sample size - 607 participants , Morgantown, US.</p>	<p>Exploratory research PLS-SEM.</p>	<p>H1: Trust in ChatGPT has a positive effect on users' intent to use ChatGPT for healthcare-related queries.</p> <p>H2: Users' behaviour intention to use ChatGPT has a positive effect on their actual use of ChatGPT for healthcare-related queries.</p> <p>H3: Trust in ChatGPT has a positive impact on users' actual use of ChatGPT for healthcare-related queries.</p> <p>H4: Users' intention to use ChatGPT mediates the relationship between trust in ChatGPT and the actual use of ChatGPT for healthcare-related queries.</p>	<p>All the hypotheses are proven.</p>	<p>The study gives insights into the antecedents influencing the adoption of ChatGPT. It also suggests that trust is the critical factor for the users' behavioural intention to adopt ChatGPT.</p> <p>Technology-driven companies and policymakers should prioritize building Trust while designing and deploying chatbots as risks are unavoidable factors associated with trust in Artificial intelligence-driven chatbots.</p>	<p>There are many other factors in UTAUT and UTAUT-2 model that determine the behaviour intention to adopt ChatGPT.</p>
<p>Raman. et al.,2023</p>	<p>The study explores the factors that influence the behavioral intention</p>	<p>Rogers' Perceived Theory of Attributes For the theoretical framework, the study</p>	<p>Sample size - 288 Participants , Nature of respondents: University</p>	<p>Quantitative Research Approach, (CFA) to test the reliability</p>	<p>H1: The relative advantage of ChatGPT significantly affects students'</p>	<p>All the hypotheses are proven.</p>	<p>The study indicates that all the 5 potential antecedents significantly influence the students'</p>	<p>There are many other factors in the UTAUT and UTAUT-2 model that determine the behavior</p>

	<p>to adopt ChatGPT among universities students by using the innovation diffusion theory as a theoretical framework . It also provides insights into the perceived attributes of ChatGPT and investigate the impact of these attributes on students' intentions to adopt the technology .</p>	<p>utilized the Diffusion of Innovation theory to understand the factors influencing the adoption of ChatGPT among university students.</p> <p>Constructs are</p> <ol style="list-style-type: none"> 1)Relative Advantage, 2)Compati bility, 3)Ease of Use/Comple xity, 4)Trialability , and 5)Observabil ity. 	<p>Students.</p>	<p>and validity of the measures, as well as the K-means algorithm for sentiment analysis and Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity for factor analysis.</p>	<p>intention to adopt it.</p> <p>H2: Student's intention to adopt ChatGPT's is significant ly influence by Compatibi lity of ChatGPT.</p> <p>H3: Student's intention to adopt ChatGPT's is significant ly influence by ChatGPT's Ease of use.</p> <p>H4: Student's intention to adopt ChatGPT's is significant ly influence by ChatGPT's trialability .</p> <p>H5: Student's intention to adopt ChatGPT's is significant ly influence by ChatGPT's observabil ity.</p>		<p>behaviour intention to adopt ChatGPT.</p> <p>The study also gives insight into the importance of understandin g the categories of adopters, such as innovators and early adopters, to strategize the successful diffusion of innovations like ChatGPT to various sections of society.The study has also found that demographic profile in terms gender attribute preferences to adopt ChatGPT.</p>	<p>intention to adopt ChatGPT.</p>
<p>Agyema ng. et al., 2023</p>	<p>The study identify the awareness and acceptance of ChatGPT among Ghanaian academics. The qualitative phase explores academics' awareness and</p>	<p>Rogers' diffusion of innovation theory (DIT) TAM -</p> <p>Constructs are</p> <ol style="list-style-type: none"> 1) Job relevance, 2) Perceived usefulness, 3) Perceived ease of use, and 4) Perceived 	<p>Sample size: 34 for the qualitative study, Sample size: 50 for the quantitative study. Nature of the respondent s: professors, associate professors, senior lecturers,</p>	<p>Mixed Method Approac h: Qualitative study: Narrative inquiry approach using semi-structured interviews Quantitati ve study: Quantitati ve survey</p>	<p>No hypotheses were tested.</p>	<p>No hypothes es were tested.</p>	<p>The study found that the academics in the study lacked awareness of ChatGPT and most of the participants had not even heard about ChatGPT. The study found that academics in Ghana had</p>	<p>There are many other factors in UTAUT and UTAUT-2 model that determine the behaviour intention to adopt ChatGPT.</p>

	understanding of ChatGPT, while the quantitative phase identifies academics' use and acceptance of ChatGPT in education.	enjoyment.	and lecturers.	design, The survey items were measured on a seven-point Likert scale. Cronbach's alpha for testing Internal consistency.			limited knowledge of AI-powered chatbots. The study also found that the awareness of ChatGPT among academics in Ghana improved two months after the qualitative study but the acceptance and use of ChatGPT by academics were still low. The study suggested that to increase the awareness and acceptance of ChatGPT among Ghanaian academics, there is a need for more training and workshops on the use of AI-powered chatbots in education the government and educational institutions should invest in the development and deployment of AI-powered chatbots in education	
--	--	------------	----------------	--	--	--	--	--

2.2 Theoretical Background.

2.2.1 Empirical contributions of the UTAUT Model in the research study.

Tiep Le. et al.,2023 The study aims to examine the factors influencing the adoption of Electric vehicles among millennials such as self-identity (SI) on the purchase orientation (PO) and purchase behavior (PB) of millennials in Vietnam. Further, the study also explores the moderating role of the Unified Theory of Acceptance and Use of Technology (UTAUT) framework in this relationship. For conducting quantitative research a questionnaire-based survey, was translated into Vietnamese, and the survey yielded 485 legitimate replies, structural equation modeling (SEM) was used to analyze the data. UTAUT measures moderate the relationship between purchase orientation (PO) and purchase behavior (PB) for electric vehicles (EVs). The UTAUT framework plays a key role in moderating the impact of self-identity (SI) on EV purchase behavior, indicating its significance in understanding consumer behavior in the context of EV adoption among millennials in Vietnam. These findings highlight the relevance of the UTAUT model in understanding and predicting consumer behavior toward the adoption of EVs, specifically among millennials in emerging markets.

Venkatesh, V., 2022 describes the acceptance, applications, and challenges of AI tools in operations management the author offers a research agenda based on UTAUT and emphasizes the potential advantages of AI technologies, such as improved effectiveness and accuracy and difficulties in implementing them. These difficulties include problems with security, privacy, and trust. The author contends that by emphasizing elements like user training, corporate culture, and communication, businesses may successfully integrate AI tools into their operations. The study also addresses the significance of taking into account the moral ramifications of AI technologies and the demand for ethical AI practices. The report offers a thorough review of the state of AI deployment in operations as a whole.

Ruchika Jain. et al., (2022) describe the usage of AI-enabled tools in Indian social development organizations and investigate the variables that affect employees' use of these tools based on the UTAUT model. According to the study, the likelihood that employees will adopt AI-enabled products was significantly predicted by performance expectations, effort expectations, and social influence. The desire to use, however, was not significantly impacted by facilitating conditions. The survey also discovered that neither gender nor age significantly affected whether or not employees intended to use these tools. By shedding light on the variables that affect the adoption of AI-enabled tools, the study's findings advance the field of social development.

Hao-Chu Lin. et al. (2022) examined the use of language e-learning systems with artificial intelligence capabilities. The study focuses on user behavior and willingness to use these technologies using the Unified Theory of Acceptance and Use of Technology (UTAUT). According to a study that polled Chinese users of online learning products, perceived utility, perceived usability, content, and functions all affect user adoption behavior. Perceived entertainment is the best approach to changing user adoption behavior, according to the study. Based on these results, the study suggests that product creators prioritize the entertainment value and interactive features of their creations to increase user adoption. The study also advises product creators to raise the entertainment value of their offerings. The study's findings suggest that AI-enabled e-learning systems can significantly enhance language learning outcomes, but for this to happen, developers must take into account user preferences and behavior. In conclusion, this study presents insightful information on the elements that affect user adoption of AI-based e-learning products and makes suggestions for developers to increase adoption rates.

Shen. et al., (2022) evaluate the factors influencing the adoption of Augmented Reality (AR) and Virtual Reality (VR) applications in tourism education, specifically within the context of the COVID-19 pandemic, for conducting statistical analysis of the study Partial Least Squares Structural Equation Modelling (PLS-SEM) is used and utilize the Technology Acceptance Model (TAM) and previous research to derive the measurement scale and items the data were collected from 604 Chinese students through offline surveys and online questionnaires. As per the findings of the study Perceived usefulness, Hedonic motivation, Price value, and Students' attitudes positively influence students' attitude towards adopting AR/VR applications.

Sum mi kim. et al. (2022) employ the UTAUT model to discuss the elements that affect consumers' intentions to utilize AI financial services. According to the study, the intention to use AI financial services was significantly influenced by performance expectations, social influence, and trust. On the other hand, enabling conditions and effort anticipation had less of an effect. The study also discovered that users' intentions to use AI financial services were positively impacted by their AI knowledge. The authors advise financial organizations to concentrate on fostering consumer trust and offering AI education to boost adoption. The study also offers advice on how to create an ecosystem for user-oriented AI.

Wheatley. et al. (2021) examined how academic libraries are responding to the trend of artificial intelligence (AI). The inquiry focuses on leading research universities in the US and Canada. The study also examines how AI might alter the role of librarians and how some businesses are establishing their own AI hubs. The paper also discusses how databases and microforms have developed within libraries and how librarians first resisted these advancements. The document claims that successful adoption of new technologies depends on clear marketing and ties to anticipated benefits. The study highlights the importance of strategic planning, worker participation, and communication in the implementation of emerging technologies like AI. The article, taken as a whole, provides relevant information about how AI is now being used in academic libraries and how it may change librarianship in the future.

Yogesh K Dwivedi. et al. (2021) pointed out the transformative potential of Artificial Intelligence (AI) in numerous businesses and areas. AI has the potential to supplement or completely replace human labor in a variety of fields, including banking, healthcare, manufacturing, retail, supply chain, logistics, and utilities, thanks to breakthroughs in machine learning and autonomous decision-making. The pace of progress in this new era of artificial intelligence technology is defined as rapid, with ongoing innovations creating new possibilities. AI has the potential to have a huge impact and disrupt many different businesses. Leading

professionals in business and management, politics, the public sector, and science and technology have contributed their ideas to the study. The study seeks to offer a thorough grasp of the chances, difficulties, and possible research agenda connected with the quick development of AI. It stresses how crucial it is to take into account how societal and industrial factors may affect the rate and course of AI development. The study aims to provide timely insights into how AI will affect many businesses and society at large in the future.

Sheshadri Chatterjee. et al. (2021) examined organizational users' intents and behavior regarding AI-integrated CRM systems. To forecast user behavior toward AI-integrated CRM systems, the study employs a meta-UTAUT technique. The results offer useful information for creating AI-integrated CRM solutions that are successful for decision-makers. According to the survey, CRM quality and satisfaction have an impact on employees' attitudes to adopt AI-integrated CRM systems. The study also emphasizes the limitations of the influence of CRM system compatibility on workers' perceptions regarding CRM systems with integrated AI. The study concludes that the meta-UTAUT approach can be utilized to forecast user behavior toward CRM systems with integrated AI. To change employees' attitudes and intentions toward using AI-integrated CRM systems, the study advises decision-makers to concentrate on enhancing CRM quality and satisfaction. The study suggests that while creating AI-integrated CRM systems, decision-makers should take the compatibility of CRM systems into account. Future research can benefit from the study's insights, which are also added to the body of knowledge on AI-integrated CRM systems.

Trang H. Nguyen. et al. (2021) employ the Unified Theory of Acceptance and Use of Technology (UTAUT) paradigm to gauge how readily university students embrace technology aids for learning English. The purpose of the study is to comprehend the variables that affect students' adoption of these tools and to shed light on their attitudes and intentions toward the use of technology for English study. The study uses the UTAUT model to estimate students' acceptance of technology aids by looking at several variables, including performance expectancy, effort expectancy, social influence, and facilitating settings. The UTAUT model provides a thorough framework for examining how these variables interact and influence students' intentions to adopt and use technology in their English language study. The study is primarily concerned with the demands and preferences of university students when it comes to studying English. The project seeks to aid in the design and deployment of more effective technological aids for English language learning in higher education by gaining a knowledge of the elements affecting acceptability. The results of this study shed important light on how readily university students adopt electronic resources for learning English. The findings can help improve the design, usability, and acceptance of these tools for educators, curriculum designers, and technology developers. The study's ultimate goal is to enhance students' overall learning outcomes and experiences in the field of English language studies.

Liyong Wan. et al. (2020) describe the effect of Massive Open Online Courses (MOOCs) on higher education. It offers insights into the evolution and expansion of MOOCs and how they are transforming conventional approaches to education. The advantages of MOOCs for students and universities are highlighted in the article, including improved access to education, reduced costs, and flexibility. The difficulties that MOOCs encounter are also covered, including low completion rates, a lack of accreditation, and worries regarding quality. The study looks at how MOOCs are affecting the world, including how they can democratize education and close the skills gap. It also examines how MOOCs may be used for professional growth and lifelong learning. The future of MOOCs and their potential to revolutionize education is covered in the article's conclusion. In general, the study offers a comprehensive overview of the MOOC phenomenon and its implications for higher education.

Dr. Share Aiyed M Aldosari. (2020) describes the prospective impacts of artificial intelligence (AI) on higher education. The study emphasizes the requirement for increased knowledge and comprehension of AI applications in education. The researcher used open-ended questions and multiple-choice clauses to elicit opinions from the collaborating experts. To create a prospective scenario for higher education in light of AI developments, three rounds of feedback were done. The study also covers the rising concerns about adopting AI and its possible effects on the labor market. The results imply that AI can raise educational standards and expand students' learning opportunities. However, proper training and development are required to ensure the effectiveness of AI systems. The research suggests Educational authorities take action to advance knowledge and comprehension of AI in higher education. Overall, the study offers insightful information about the need for additional research in this field as well as the possible effects of AI on higher education.

2.2.2 Empirical contributions of the Technology Opinion Leadership model in the research study.

Thakur. et al., 2016 aim to develop and test a model of Technology Opinion Leadership by empirically testing the relationships between personal innovativeness, technological innovativeness, and gadget lovers, and investigating the mediational role of gadget lovers between personal innovativeness and technological innovativeness. The statistical analysis tools used include confirmatory factor analysis (CFA) and structural

equation modeling (SEM). The findings of the study indicate that technological innovativeness and gadget lovers are important predictors of Technology Opinion Leadership, and gadget lovers mediate the relationship between personal innovativeness and technological innovativeness.

Risselada. et al., 2015 discuss a study on opinion leadership and social networks in the context of new product adoption and assess two alternative indicators of opinion leadership such as self-reported opinion leadership and degree centrality, the study investigates the interaction effect of these two indicators and the social network environment on opinion leadership. The study used (PCA-principal component analysis) to examine the factor structure of the self-reported opinion leadership, commitment, and involvement variables. Additionally, confirmatory factor analysis (CFA-confirmatory factor analysis) to assess the validity of these three antecedents.

Bruner. et al., 2007 aims to provide insights into the segment of gadget lovers, who are early adopters of technology and influential sources of information for others. The study also aimed to develop and validate a scale to measure the characteristics of gadget lovers and examine its ability to predict adoption-related behaviors better than other variables. The study also found that Technological innovativeness is positively associated with adoption behaviors and a significant positive correlation exists between technological innovativeness, adoption behaviors, and technological opinion leadership (TOL).the study also found that technological innovators who are gadget lovers have higher TOL scores compared to innovators who are not gadget lovers.Technological innovativeness is positively associated with optimism (general) and materialism(happiness) but the correlation was lower than expected.The research method used in the study is a combination of (EFA-exploratory factor analysis) and (CFA- confirmatory factor analysis). EQS was used to conduct the CFA analysis to assess the overall model fit of the five constructs measured by the 24 items. Additionally, Cronbach's alpha was calculated to assess the reliability of the scales, and hierarchical regression analysis was performed to predict adoption behaviors.

2.2.3 Hypothesis Development

According to Venkatesh. et al.,(2003) performance expectancy denotes an individual's perception of how an object can be valuable in enhancing certain aspects of their performance, Hao-Chu Lin. et al.,(2022) underline that Effort expectancy and social influence on users have a significant positive impact on the adoption of AI-enabled e-learning products, Ruchika Jain. et al., (2022) found that the likelihood that employees will adopt AI-enabled products was significantly predicted by performance expectations, effort expectations, and social influence. Sum mi kim. et al., (2022) found that the intention to use AI financial services was significantly influenced by performance expectations, social influence, and trust. Research by Hoang et al. (2022) found that customer expectancy (performance and effort) had a positive relationship with behaviour intention to purchase battery electric vehicles.

Ha1: There is a significant influence of the effort expectancy on behavioral intention.

Ha2: There is a significant influence of facilitating conditions on behavioral intention.

Ha3: There is a significant influence of the habit on the behavioral intention.

Ha4: There is a significant influence of the performance expectancy on behavioral intention.

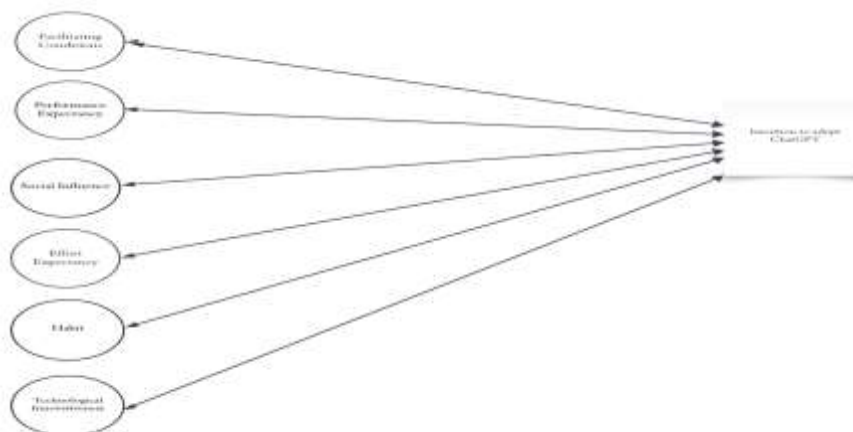
Ha5: There is a significant influence of the social influence on behavioral intention.

Bruner. et al.,(2007) argue that Technological innovativeness is positively associated with adoption behaviors and there exists a significant positive correlation between technological innovativeness, adoption behaviors, and technological opinion leadership (TOL), Thakur. et al., (2016) found that technological innovativeness and gadget lovers are predictors of technological opinion leadership.

Ha6: There is a significant influence of technological innovativeness on behavioral intention.

3. Conceptual Framework/Model, Constructs, and Items,

Figure No: 1 Conceptual Framework/ Model.



Source: Venkatesh et al.2003., 2012. and Bruner and Kumar., 2007.

The authors have proposed a model based on the (UTAUT 2 - unified theory of acceptance and use of technology) and (TOL- Technology opinion leadership model). 5 factors from the UTAUT model and 1 construct of the TOL model are taken to understand the behavioral intention of postgraduate management learners who are pursuing a Master in Business Administration (MBA) and Master in Business Management (MCOM - Business Management) to adopt ChatGPT as a text-based interactive AI Chatbot to undertake academic and research activities.

Table No: 1 Construct, Items, and Description.

Constructs	Meaning	Sources	Items and Description
Facilitating Condition	Facilitating conditions means the magnitude of the existence of technical support for using the new technology.	Venkatesh et al.,2003 Davis (1989), Shen et al.(2022), Venkatesh et al. (2012)	FC1: I have sufficient resources to use ChatGPT. FC2: Knowledge towards the ChatGPT usage is available for me. FC3: I have the availability of necessary help and from others.
Performance Expectancy	Performance expectancy is the degree to which an individual believes that using a particular tech driven product will enhance their productivity and facilitate accomplishment of task.	Venkatesh et al.,2003 Davis (1989), Shen et al.(2022)	PE1: I feel the usefulness of ChatGPT in daily life. PE2: Achieving important things are possible for me. PE3: ChatGPT helps to achieve things for faster and increases my productivity.
Social Influence	Social influence means the degree to which a person perceives how vital and important others believes and opinion is that he or she should use the technology.	Venkatesh et al.,2003	SI1: Important people to me suggest ChatGPT. SI2: Influential people motivate towards ChatGPT. SI3: Opinion leaders for me suggest ChatGPT.
Effort Expectancy	Effort expectancy is the degree of ease associated with the use of technology.	Venkatesh et al.,2003	EE1: I feel easy to learn the usage of ChatGPT. EE2: I have clear understanding in

			ChatGPT interactions. EE3: It is easy to acquire ChatGPT skills.
Habit	The Habit refers to the magnitude to which an individual has developed a pattern of automatic and repeated use of a technology.	Venkatesh et al.2003.,2012	H1: I have the Habit to use ChatGPT. H2: I am addicted to use ChatGPT. H3: Using ChatGPT is must for me.
Technological Innovativeness	Technological innovativeness is the magnitude to which a consumer is inspired to be the first to adopt new tech-driven goods and services.	Bruner and Kumar., 2007	TI1: I want to use ChatGPT before most other people know it exist. TI2: I get a thrill out of being the first to adopt ChatGPT. TI3: I want to own the newest technological products like ChatGPT.
Behavioral Intention	Behavioral Intention refers to the extent an individual has the willingness or intention to execute a specific behavior. Specifically, in the UTAUT2 model, behavioral intention refers to the user's behaviour intention to use a particular technology in the future.	Venkatesh et al.2003.,2012 Davis et al.(1989), Shen et al.(2022)	BI1: I have intention to use ChatGPT in future. BI2: I am using ChatGPT in daily Life. BI3: I am planning to use it frequently.

4. Data Collection and Analysis:

To collect the data, the questionnaire was initially shared with the undergraduate students in July based on only the UTAUT model and the data collection work was completed in August but the reliability and validity of the data were poor so again in September the questionnaire was modified by integrating UTAUT model with TOL model and adding one construct of Tol model i.e. technological innovativeness in the survey questionnaire, the research team implemented two methods, namely (i) offline survey sessions for postgraduate management learners of Somaiya University, Professors and faculty members in the research team have distributed survey questionnaires in physical form and learners where asked to fill the questionnaire. (ii) online survey questionnaires for the postgraduate management learners from other universities and management institutes in Mumbai because of the distance to reach post-graduate management learners on social media platforms used particularly LinkedIn. Learners from different institutions located at different locations in Mumbai have participated in the research study.

The questionnaire consists of 10 sections, that measure the various parameters, the following is the description of the sections:

Section 1: A short description of ChatGPT and its multiple uses for postgraduate management learners.

Section 2: Demographic profile

Section 3: Awareness of ChatGPT

Section 4: Performance Expectancy

Section 5: Effort Expectancy

Section 6: Social Influence

Section 7: Facilitating Condition

Section 8: Habit

Section 9: Technological Innovativeness

Section 10: Behavioral Intention.

The data collected is purely primary data, to test the reliability and validity of Cronbach's Alpha, Composite reliability and AVE is used, and for conducting statistical analysis of data AMOS SEM is used.

5. Results and Discussion:

5.1 Demographic Profile:

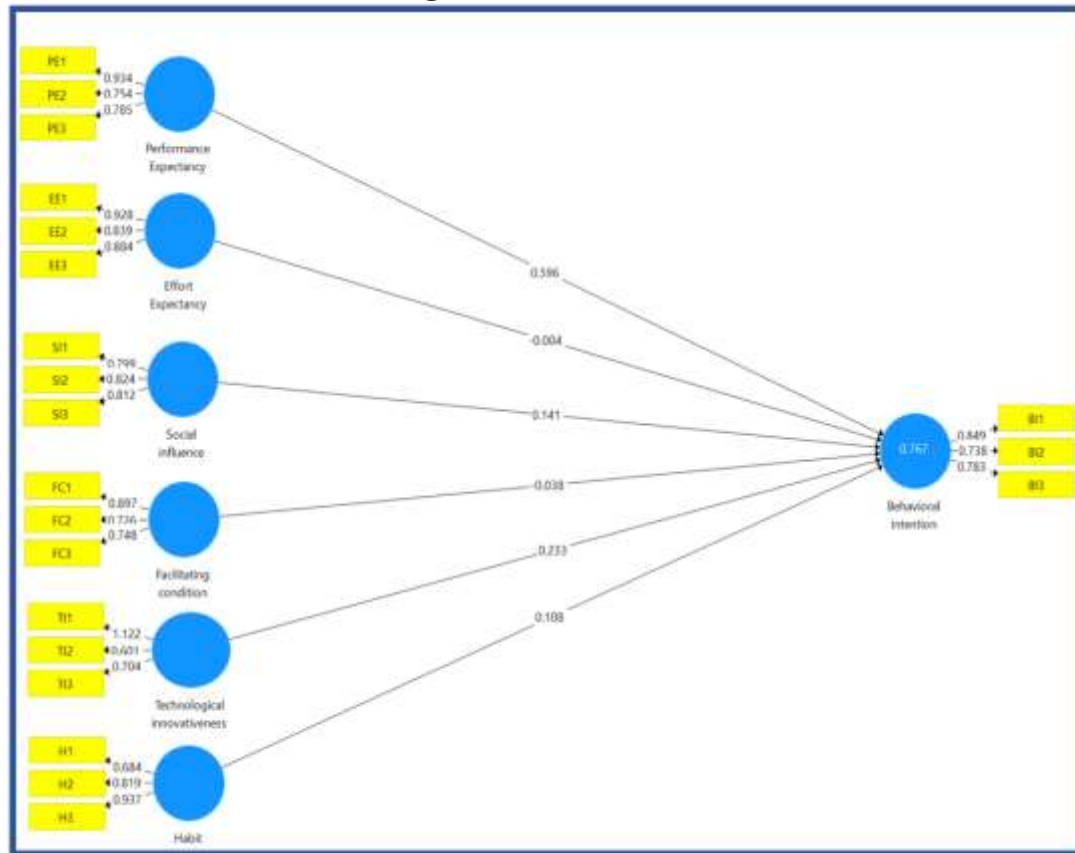
Characteristics	n=210	Percentage (%)
Age		
• 18-20	49	23.5%
• 20-25	130	62%
• 25-30	31	14.5%
Gender		
• Female	115	54.9%
• Male	95	45.1%
Education		
• Marketing Management	104	49.4%
• Finance & Accounting	84	40%
• Human Resource Management	22	10.6%
Profession		
• Salaried	26	12.2%
• Businessmen	6	2.7%
• Professional	12	5.5%
• Unemployed	166	79.6%

5.2 Awareness and use of ChatGPT among Postgraduate Management Learners.

Characteristics	n=210	Percentage (%)
Awareness		
• Yes	207	98.8%
• No	3	1.2%
Usage		
• Daily	46	22%
• Occasionally used	143	68.2%
• Only once	17	8.2%
• Never Used	4	1.6%
Version of ChatGPT		
• Paid	200	95.3%
• Unpaid	10	4.7%
Purpose of Using ChatGPT		
• Language Learning	46	22%
• Entertainment and Fun	30	14.5%
• Making Notes and Assignment	140	66.7%
• Searching for Knowledge	152	72.5%
• Creating Content	85	40.4%
• Research Work	126	60%
(Respondents have selected more than 1 options as checkbox method was used because ChatGPT has multiples of uses)		

5.3 Discussion of findings:

Figure No: 2 SEM model



The result related to **H1** states that the path coefficient is 0.596, this proves that performance expectancy significantly influences the behavior intention of postgraduate management learners in the adoption of ChatGPT for academic and research work, the finding confirm the results of **Raman. et al.,2023** ChatGPT's Ease of use significantly affects students' intention to adopt it. **Chaudhary. et at., 2023** Users' intent to use ChatGPT has a positive effect on their actual use of ChatGPT for healthcare-related queries. **Ruchika Jain. et al., (2022)** employees will adopt AI-enabled products was significantly predicted by performance expectations. **Hao-Chu Lin. et al. (2022)** Chinese users of online learning products, perceived utility, perceived usability, content, and functions all affect user adoption behavior. The finding also unsupported the results of **Tiwari. et al.,2023** Perceived ease of use and attitude were insignificant among students for learning and education. The result relates to **H5** states that the path coefficient is 0.233, this proves that technological innovativeness significantly influences the behavior intention of postgraduate management learners in adopting ChatGPT for academic and research work, the findings confirm the results of **Bruner. et al., 2007** Technological innovativeness is positively associated with adoption behaviors and a significant positive correlation exists between technological innovativeness, adoption behaviors, and technological opinion leadership (TOL). **Thakur. et al., 2016** technological innovativeness and gadget lovers are important predictors of Technology Opinion Leadership. The result related to **H2** states that the path coefficient is -0.004, which proves that effort expectancy is insignificant in influencing the behavior intention of the postgraduate management learners to adopt chatGPT.the finding un-supported the results of **Ruchika Jain. et al., (2022)** According to the study, the likelihood that employees will adopt AI-enabled products was significantly predicted by effort expectations and social influence **H3** states that the path coefficient is 0.141, which proves that social influence is insignificant in influencing the behavior intention of the postgraduate management learners to adopt chatGPT, the finding unsupported the results of **Tiwari. et al.,2023** Perceived social presence positively influences attitudes toward using ChatGPT for educational purposes. **H4** states that the path coefficient is 0.038, which proves that the Facilitating condition is insignificant in influencing the behavior intention of the postgraduate management learners to adopt chatGPT. and **H6** states that the path coefficient is 0.108, which proves that Habit is insignificant in influencing the behavior intention of the postgraduate management learners to adopt chatGPT.

Table No: 2 Reliability and validity

Path	Cronbach's Alpha	Composite Reliability	AVE
Behavioral Intention (BI)	0.834	0.834	0.626
Effort Expectancy (EE)	0.915	0.915	0.782
Facilitating Condition (FC)	0.836	0.835	0.630
Habit (H)	0.859	0.858	0.672
Performance Expectancy (PE)	0.867	0.867	0.686
Social Influence (SI)	0.852	0.853	0.659
Technological Innovativeness (TI)	0.869	0.870	0.706

Cronbach's alpha is also referred to as Cronbach's alpha or coefficient alpha, it is a measure of internal consistency reliability for a instrument. It is commonly used in the fields of psychology, education, and other social sciences to measure the reliability of a given set of items that are required to measure a latent construct whereas as Composite reliability (CR). Average Variance Extracted (AVE) are metric used in structural equation modeling (SEM), Composite reliability is a measure of the internal consistency reliability of a latent construct in a structural equation model. AVE is a measure of convergent validity, that indicates the amount of variance confined by a latent construct relative to the amount due to measurement error in the above table it is clear that all the values of Cronbach's alpha > 0.7 indicate reliability of response. It is seen that composite reliability > 0.7 and AVE > 0.5 indicating convergent validity.

Table No: 3 discriminant validity

Path	BI	EE	FC	H	PE	SI	TI
BI	0.791						
EE	0.758	0.884					
FC	0.682	0.761	0.794				
H	0.644	0.578	0.619	0.820			
PE	0.719	0.601	0.777	0.585	0.828		
SI	0.683	0.692	0.581	0.526	0.652	0.812	
TI	0.611	0.407	0.477	0.599	0.436	0.524	0.840

Square root of AVE > Correlation (r) thus it can be concluded that there exists an adequate discriminant validity.

Table No: 4 Hypothesis testing

Path	Beta Coefficient	t-statistics	P-value
EE à BI	0.148	1.115	0.265
FC à BI	0.027	0.273	0.785
H à BI	0.098	1.339	0.181
PE à BI	0.354	3.165	0.002
SI à BI	0.121	1.545	0.123
TI à BI	0.228	3.296	0.001

P (value) < level of significance 5% thus, Ho is rejected, and H1 is accepted in all the cases, indicating the significant impact of performance expectancy and Technological innovativeness on Behavioral intention. Whereas, it was seen that effort expectancy, facilitating conditions, habit, and social influence have an insignificant impact on behavioral intention.

Table No: 5 Summary of Hypothesis

Alternative Hypothesis	Result
Ha1: There is a significant influence of effort expectancy on behavioral intention.	Not Supported
Ha2: There is a significant influence of facilitating conditions on behavioral intention.	Not Supported
Ha3: There is a significant influence of the habit on the behavioral intention.	Not Supported
Ha4: There is a significant influence of the performance expectancy on behavioral intention.	Supported
Ha5: There is a significant influence of the social influence on behavioral intention.	Not Supported
Ha6: There is a significant influence of technological innovativeness on behavioral intention.	Supported

From the above summary of hypothesis it is clear that only performance expectancy and technological innovativeness have a significant influence on the behavioral intention of the post-graduate management learners to adopt ChatGPT for academic and research work under the construct technological innovativeness of TOL model learners are strongly agreed that they want to use or adopt ChatGPT before most other people know it exists and underperformance expectancy of UTAUT model learners are strongly agreed that they feel easy to learn the usage of ChatGPT.

6. Conclusion and Limitations:

6.1 Conclusion:

The outcomes highlight how crucial perceived expectancy is in influencing users' behavioral intentions, as is technological innovativeness. One important component that stands out is performance expectation, which is the notion that adopting ChatGPT would increase productivity or effectiveness. Similarly, users' intents to embrace ChatGPT are greatly influenced by how inventive they consider the technology to be, particularly when showing its novelty and sophisticated capabilities. On the other hand, it was discovered that elements like effort expectancy—which reflects the perceived ease of use—and enabling conditions representing the tools and assistance offered for using ChatGPT—had little effect on behavioral intention. This implies that although resource accessibility and simplicity of use are significant factors, consumers' decisions to embrace this particular technology may not be primarily influenced by them. In the context of ChatGPT, habit, and social influence—which are frequently important in adopting technology—were also found to have a negligible effect on behavioral intention. This suggests that societal influences or typical use patterns may not influence consumers' decisions to use this novel technology.

6.2 Limitations:

The sample size is 210 but there are a large number of students who enroll for post-graduation in Management. The study is conducted in Mumbai only but there are a large number of students who enroll for post graduation outside Mumbai as well and in many IIMs in India ChatGPT is also introduced in their training session so the result of the survey could be more authentic if the sample size and area of study are large. There are many Chatbots available for interactive text and content generation, the research paper focuses specifically on understanding the behavior intention to adopt ChatGPT. ChatGPT is available to all but the study focuses on the behavior intention of postgraduate management learners only.

7. Recommendations:

- Draw attention to and demonstrate ChatGPT's cutting-edge features and performance capabilities to prospective customers.
- Adoption may be accelerated by showing how it dramatically improves productivity, creativity, or problem-solving skills.
- Even if effort expectation didn't appear as a big component, making sure the interface is clear and easy to use can still improve the adoption process.
- Expanding the user base might be achieved by continuously improving the user experience to make it more accessible and frictionless.
- Given that social influence and habit were not important motivators, creating awareness-raising initiatives emphasizing ChatGPT's special features and advantages.

- Informing prospective users of its benefits and possible uses might encourage acceptance and interest. Maintain an innovative path and ensure the user community is informed about these developments.
- Specifically highlight ChatGPT's benefits for various businesses or use cases in your marketing campaigns.
- Giving instances from the real world and success stories can highlight its usefulness in the actual world and promote acceptance in particular industries.

8. Practical implications:

The study provides two major contributions. The first contribution of the literature is to elaborate extended UTAUT framework for the adoption and usage of ChatGPT for academic and research purposes. The study supports the validity of the UTAUT model and TOL model and expands our knowledge in the field of the adoption of artificial intelligence tools within the university setting for academic and research work. It contributes to a better understanding of students' perceptions and intention to adopt artificial intelligence chatbots for academic purposes by expanding the validity of UTAUT theory in education and allowing them to acquire a better understanding of the student's perceptions and behavioral intentions and then, use this knowledge for academic purposes. The second contribution of the study is that it provides practical knowledge to the designer of the ChatGPT to make appropriate advancements in the technology to validate the other construct and also to significantly influence the behavior of management learners to adopt ChatGPT. The practical implications of ChatGPT for postgraduate management learners are diverse and impactful, it offers opportunities to enhance various aspects of their academic experience and professional development. Learners can use ChatGPT to enhance their understanding of management concepts. By engaging in interaction with the model, they can clarify complex ideas, discuss case studies, and receive explanations to strengthen their knowledge base. The limitation of this study can be used for further research and fill in the research gap.

9. Appendix:

Section 1: A short description of ChatGPT and its multiple uses for postgraduate management learners.

Section 2: Demographic profile

Age:

- 18-20
- 20-25
- 25-30

Gender:

- Female
- Male

Education:

- Marketing Management
- Finance & Accounting
- Human Resource Management

Profession:

- Salaried
- Businessmen
- Professional
- Unemployed

Section 3: Awareness of ChatGPT

Awareness

- Yes
- No

Usage

- Daily
- Occasionally used
- Only once
- Never Used

Version of ChatGPT

- Paid
- Unpaid

Purpose of Using ChatGPT

- Language Learning
- Entertainment and Fun

- Making Notes and Assignment
- Searching for Knowledge
- Creating Content
- Research Work

Sections	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<p>Section 4: Performance Expectancy PE1: I feel easy to learn the usage of ChatGPT.</p> <p>PE2: I have clear understanding in ChatGPT interactions.</p> <p>PE3: It is easy to acquire ChatGPT skills.</p> <hr/> <p>Section 5: Effort Expectancy EE1: I have sufficient resources to use ChatGPT.</p> <p>EE2: Knowledge towards the ChatGPT usage is available for me.</p> <p>EE3: I have the availability of necessary help and from others</p> <hr/> <p>Section 6: Social Influence SI1: Important people to me suggest ChatGPT.</p> <p>SI2: Influential people motivate towards ChatGPT.</p> <p>SI3: Opinion leaders for me suggest ChatGPT.</p> <hr/> <p>Section 7: Facilitating Condition FC1: I feel the usefulness of ChatGPT in daily life.</p> <p>FC2: Achieving important things are possible for me.</p> <p>FC3: ChatGPT helps to achieve things for faster and increases my productivity</p> <hr/> <p>Section 8: Habit H1: I have the Habit to use ChatGPT.</p> <p>H2: I am addicted to use ChatGPT.</p> <p>H3: Using ChatGPT is must for me.</p> <hr/> <p>Section 9: Technological Innovativeness TI1: I want to use ChatGPT before most other people know it exist.</p> <p>TI2: I get a thrill out of being the first to adopt ChatGPT.</p> <p>TI3: I want to own the newest technological products like ChatGPT.</p> <hr/>					

<p>Section 10: Behavioral Intention.</p> <p>BI1: I have intention to use ChatGPT in future.</p> <p>BI2: I am using ChatGPT in daily Life.</p> <p>BI3: I am planning to use it frequently.</p>					
--	--	--	--	--	--

References

- V,Venkatesh. (2022). Adoption and use of AI tools: A research agenda grounded in UTAUT. *Annals of Operations Research*, Volume 308, P.641-652.DOI:10.1007/s10479-020-03918-9
- Aldosari,S.(2020). The Future of Higher Education in the Light of Artificial Intelligence Transformations. *International journal of higher education*. Volume 9, Issue 3, P. 145-151.<https://doi.org/10.5430/ijhe.v9n3p145>
- Nguyen,T., & Chu, P. (2021). Estimating University Students' Acceptance of Technological Tools for Studying English through the UTAUT Model.*International journal of TESOL & Education*. Volume 1, Issue 3, P. 210 - 234.DOI:10.11250/ijte.01.03.012
- Lin,H., Ho,C., & Yang,H. (2022). Understanding adoption of artificial intelligence enabled language e-learning system: an empirical study of UTAUT model. *International journal of mobile learning and organisation*, Volume 16, P. 74-94.<https://doi.org/10.1504/IJMLO.2022.119966>
- Kim,S., & Son,Y. (2022). A Study on the Intention of Financial Consumers to Accept AI Services Using UTAUT Model. *Journal of korean society for quality management*, Volume 50, P.43-61.DOI:10.1504/IJFIB.2019.102307
- Wheatley,A., & Hervieux,S., (2021). Artificial intelligence in academic libraries: An environmental scan. *Information service and use*, Volume 39, Issue 4, P. 347 - 356.DOI:10.3233/ISU-190065
- Jain,R., Garg,&N., khera,S. (2022). Adoption of AI-Enabled Tools in Social Development Organizations in India: An Extension of UTAUT Model.*Frontiers in Psychology*, Volume 13.<https://doi.org/10.3389/fpsyg.2022.893691>
- Dwivedi,Y., Hughes,L., Ismagilova,E., & et.al. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International journal of information management*, Volume 57.<https://doi.org/10.1016/j.ijinfomgt.2019.08.002>
- Chatterjee,S., Rana, N., Khorana, S., Mikalef, p., & Sharma, A. (2021). Assessing Organizational Users' Intentions and Behavior to AI Integrated CRM Systems: a Meta-UTAUT Approach. *Information system frontiers*, DOI:10.1007/s10796-021-10181-1
- Wan,L., Xie, S., & Shu, A. (2020).Toward an Understanding of University Students' Continued Intention to Use MOOCs: When UTAUT Model Meets TTF Model. *SAGE*. P .1-5DOI:10.1177/2158244020941858
- Sharma, G. and Thakur, A. (2023),ChatGPT in Drug Discovery, doi: 10.26434/chemrxiv-2023-qgs3k.
- Dwivedi, Y.K., Kshetri, N., Hughes, L., Slade, E.L., Jeyaraj, A., Kar, A.K., Baabdullah, A.M.,
- Koohang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M.A., Al-Busaidi, A.S.,Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., Carter, L., Chowdhury,S., Crick, T., Cunningham, S.W., Davies, G.H., Davison, R.M., De, R., Dennehy, D., Duan, Y.,Dubey, R., Dwivedi, R., Edwards, J.S., Flavian, C., Gauld, R., Grover, V., Hu, M.-C., Janssen,M., Jones, P., Junglas, I., Khorana, S., Kraus, S., Larsen, K.R., Latreille, P., Laumer, S., Malik, F.T., Mardani, A., Mariani, M., Mithas, S., Mogaji, E., Nord, J.H., O'Connor, S., Okumus, F.,Pagani, M., Pandey, N., Papagiannidis, S., Pappas, I.O., Pathak, N., Pries-Heje, J., Raman, R.,Rana, N.P., Rehm, S.-V., Ribeiro-Navarrete, S., Richter, A., Rowe, F., Sarker, S., Stahl, B.C.,Tiwari, M.K., van der Aalst, W., Venkatesh, V., Viglia, G., Wade, M., Walton, P., Wirtz, J. and Wright, R. (2023),“Opinion paper:‘So what if ChatGPT wrote it?’Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practiceand policy”,*International Journal of Information Management*, Vol. 71, p. 10264, doi: 10.1016/j.ijinfomgt.2023.102642
- Davis, F.D. (1989),“Perceived usefulness, perceived ease of use, and user acceptance of information technology”,*MIS Quarterly*, Vol. 13 No. 3, pp. 319-340, doi: 10.2307/249008.
- Shen, S., Xu, K., Sotiriadis, M. and Wang, Y. (2022),“Exploring the factors influencing the adoption and usage of augmented reality and virtual reality applications in tourism education within the context of COVID-19 pandemic”,*Journal of Hospitality, Leisure, Sport and Tourism Education*,Vol. 30, p. 100373.DOI:, doi: 10.1016/j.jhlste.2022.100373.
- Zhang, K. and Aslan, A.B. (2021),“AI technologies for education: recent research and future directions”,*Computers and Education: Artificial Intelligence*, Vol. 2, p. 100025, doi: 10.1016/j.caeai.2021.100025

17. Flynn, L. R., & Goldsmith, R. E. (1993). A validation of the Goldsmith and Hofacker innovativeness scale. *Educational and Psychological Measurement*, 53(4), 1105–1116
18. Bruner, G. C. II., & Kumar, A. (2007). Gadget lovers. *Journal of the Academy of Marketing Science*, 35(3), 329–339
- ChatGPT. (2022). ChatGPT: optimizing language models for dialogue. OpenAI. Retrieved from <https://openai.com/blog/chatgpt/> (accessed 31 January 2023).
19. Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*. doi: 10.1080/14703297.2023.2190148.
20. Menon, D., & K Shilpa. (2023). “Chatting with ChatGPT”: Analyzing the factors influencing users’ intention to Use the Open AI’s ChatGPT using the UTAUT model. *Heliyon*, 9(11), e20962–e20962. <https://doi.org/10.1016/j.heliyon.2023.e20962>
21. Tiwari, C., Mohd Abass Bhat, Shagufta Tariq Khan, Subramaniam, R., & Muhammad Ashraf Khan. (2023). What drives students toward ChatGPT? An investigation of the factors influencing adoption and usage of ChatGPT. *Interactive Technology and Smart Education*. <https://doi.org/10.1108/itse-04-2023-0061>
22. Choudhury, A., & Shamszare, H. (2023). Investigating the Impact of User Trust on the Adoption and Use of ChatGPT: Survey Analysis. *Journal of Medical Internet Research*, 25(1), e47184. <https://doi.org/10.2196/47184>.
23. Raman, R., Mandal, S., Das, P., Kaur, T., JP, S., & Nedungadi, P. (2023). University students as early adopters of ChatGPT: Innovation Diffusion Study. <https://doi.org/10.21203/rs.3.rs-2734142/v1>.
24. Agyemang Adarkwah, M., Amponsah, S., M van Wyk, M., Huang, R., Tlili, A., Shehata, B., Saleh Metwally, A. H., & Wang, H. (2023). Awareness and acceptance of ChatGPT as a generative conversational AI for transforming education by Ghanaian academics: A two-phase study. *Journal of Applied Learning and Teaching*, 6(2). <https://doi.org/10.37074/jalt.2023.6.2.26>
25. Le, T. T., Jabeen, F., & Santoro, G. (2023). What drives purchase behavior for electric vehicles among millennials in an emerging market. *Journal of Cleaner Production*, 428, 139213. <https://doi.org/10.1016/j.jclepro.2023.139213>