

Determinants The Use Of ChatGPT In The Marketing Industry: An Application Of UTAUT Model

Randrianarimalala Haingo Julianah

Rini Setiowati, M.B.A

Management Department, BINUS Business School Master Program,
Bina Nusantara University, Jakarta, Indonesia

Abstract: This study attempts to conduct an empirical investigation into the intention to use of ChatGPT in business marketing context in Madagascar. The purpose of this study is to evaluate the valuable insights and understanding of this technology as well as the scope of practice that it covers in customer retention. The data used in this study is primary data, which were acquired by sending questionnaires using Google form to the marketing in Madagascar. The data for the survey will be coming from unpredictable business marketing employees, that registered in Madagascar. A structural model assessment method by a software Smart PLS-SEM was utilized in the data process to analyse and to estimate the relationship between the latent variables and determines how well the UTAUT model explained the target constructs of interest. The researchers conducted a multigroup analysis to confirm the moderating effect of gender among the underlying relationship in the model. SEM analysis indicated that, gender did not moderate the four main UTAUT model. This study is valued to fill the gap in research which exposes scares studies that explore the relationship between UTAUT and ChatGPT, especially in business marketing. This study is only limited to the business marketing in Madagascar only.

Keywords: Open AI, ChatGPT, Business Marketing, Madagascar, UTAUT

I. INTRODUCTION

Artificial intelligence (AI) has experienced substantial advancements, in the past five decades (Duffet, 2017). It can potentially improve business performance by making it easier to carry out a wide range of management tasks, from accounting to marketing (Keinänen & Kuivalainen, 2015). ChatGPT is considered to be one of the advanced applications among a range of open AI tools. The chatGPT is a language model that has been developed by Open AI with the capability to generate human-like responses to text prompts (Gordijn et al., 2023); (Open Ai, 2023). The utilization of chatGPT is experiencing a growing trend in diverse sectors. This technology leverages natural language processing and machine learning techniques to offer automated customer service solutions, enabling businesses to enhance operational efficiency and mitigate expenses(Shareef, 2017) .Moreover, the system possesses the capacity to generate numerous conversation threads, thereby facilitating the creation of more authentic interactions between the user and the chatbot.

Previous research has investigated the determinants that influence the propensity of chatGPT users to engage in its utilization. The findings indicate that technology risk perception and expectation confirmation are significant subjective factors that impact the willingness of chatGPT users to utilize the system (Li & Zhang, 2023).

implement strategic initiatives aimed at optimizing the long-term value derived from customers (Weinsten, 2002). The role of the marketer in the integration of ChatGPT in the "customer retention" topic is rarely discussed. Previous research indicates that it is crucial to take into account various perspectives, including marketing and technological aspects, as well as macrolevel and microlevel considerations, when identifying innovations (Garcia & Calantone, 2002).

Therefore, the main objective of this research is to offer significant insights and enhance comprehension regarding the implementation of ChatGPT in customer retention strategies within the context of Madagascar. This research seeks to examine the elements that impact the desire to use Chat GPT using the Unified Theory of Acceptance and Use of

Technology (UTAUT) paradigm. It also wants to determine if these associations are influenced by gender. This study makes several significant contributions to the existing body of literature. By incorporating perceived danger and perceived cost factors into the existing UTAUT model, we enhance the analysis of Chat GPT usage as a service that elicits mixed feelings due to its impact the willingness of chatGPT users to utilize the system (Li & Zhang, 2023). It has the potential to be utilized in customer service applications and, in the development of virtual assistants capable of engaging in voice and text-based conversations (Shaji & Hovan, 2023). Another study conducted revealed that 70% of users prefer ChatGPT-powered conversational interfaces over traditional methods, with benefits including time savings, increased productivity, and a more tailored experience (Sakirin & Ben, 2013). For instance, chatGPT can be implemented in customer care application to provide tailored assistance to each user. It can understand and respond to customer questions and concerns, provide information about products and services, and aid customers with technical issues (Mhlanga, 2019).

Earlier studies have discovered that Chat GPT can be used to automate a wide range of tasks. Reports, marketing materials, and process analyses can all be produced with ease and speed. Moreover, the utilization of Chat GPT as a virtual customer service assistant enables it to promptly address customer inquiries, thereby autonomously augmenting the quality of service provided (Tarasiuk & Czapski, 2023). Despite the growth of using ChatGPT and its potential to revolutionize and enhance business sectors, there is a dearth of research dedicated to the application of ChatGPT in of customer retention. It is imperative for companies to cultivate a customer retention orientation and

ChatGPT is an NLP system that has been developed by Open AI. The purpose of this system is to produce conversations that resemble those between humans by comprehending the context of a conversation and generating suitable replies. ChatGPT is founded upon a deep learning model known as GPT-3, which has undergone training utilizing an extensive corpus of conversational data. ChatGPT has the potential to enhance operational efficiency through the automation of conversational interactions. The implementation of this approach can yield time and resource savings by obviating the necessity for manual conversations. Moreover, ChatGPT exhibits the capability to generate responses expeditiously, thereby facilitating prompt exchanges. The utilization of ChatGPT enables businesses to promptly and precisely respond to customer inquiries, thereby optimizing resource allocation and enhancing the provision of tailored customer experiences (Deng and Lin, 2022). Currently, developers are supported by a diverse range of tools, software, and applications that leverage Artificial Intelligence (AI), including Open AI's ChatGPT. The utilization of artificial intelligence (AI) systems that autonomously generate source code significantly expedites the application development process for associated advantages. Furthermore, through the analysis of the gender's moderating influence, a topic that has received little attention in prior Chat GPT research, we deepen our comprehension of how different user groups respond to Chat GPT.

II. LITERATURE REVIEW

A. TECHNOLOGY DEVELOPMENT

Artificial intelligence (AI) is a subfield of computer science that aims to develop robots with human-like intelligence. Artificial intelligence (AI) systems are specifically engineered to acquire knowledge from their surroundings and subsequently generate decisions by analyzing the information they receive (Deng and Lin, 2022). The emergence of artificial intelligence (AI), a collection of transformative technologies that mimic human intelligence and enable machine intelligence, has garnered significant attention in numerous countries and industries (Qin and Z. Jiang, 2019). The objective of AI solutions in marketing is to optimize business performance (Wirth, 2018). Regarding customer service Artificial intelligence (AI) is a technology-driven system that utilizes data from digital and/or physical sources to analyze real-time service scenarios. Its purpose is to offer personalized recommendations, alternatives, and solutions to customers' inquiries or problems, regardless of their level of difficulty (Xu, 2020). Technological innovation has played a pivotal role in shaping the execution of advertising and marketing campaigns (Qin and Z. Jiang, 2019).

differences between different types of users (Venkatesh et al., 2003). The UTAUT model has around 70% explanatory power, which is 20%-30% higher than that of TAM and typically explains 40%-50% of the user's intention or usage behaviour (Venkatesh et al., 2003). Consequently, numerous researchers studying the acceptance of users toward new technologies used UTAUT.

UTAUT has also been introduced in a variety of studies related to the digital marketing field, where technology changes and new products and services such as customer retention and many more are rapidly emerging.

For Chat GPT, (Kim, 2023) found that performance expectancy, effort expectancy and social influence positively affect the intention to use Chat GPT.

Performance expectancy is a fundamental component of the UTAUT model, which is employed to elucidate and forecast an individual's conduct in accepting technology (Menon & Shilpa, 2023). Performance expectancy refers to the extent to which developers (Ratovondrahona et al., 2023). With the current availability of this technology, scientists are equipped with advanced capabilities to design improved chatbots, virtual assistants, and other related applications that can offer beneficial services to individuals worldwide (Shaji & Hovan, 2023).

B. APPLICATION OF UTAUT MODEL

The theoretical framework of the Unified Theory of Acceptance and Use of Technology (UTAUT) is employed to suggest different possibilities for research, including individual characteristics, technology characteristics, environmental characteristics, and interventions (Venkatesh et al., 2003). These research directions have the potential to enhance the existing knowledge on technology adoption, specifically in the context of artificial intelligence (AI) tools.

Furthermore, they can assist organizations in effectively influencing the adoption of AI tools in a positive manner. The rapid development of AI tools and the opportunities they present to businesses are unprecedented. Companies are striving to implement AI tools across their operations in order to capitalize on the benefits, obtain an edge over competitors, and increase performance. (Venkatesh et al., 2003) has developed UTAUT to predict the user adoption predict the user adoption of information technologies.

Additionally, UTAUT suggests moderators such as gender, age, experience, and voluntariness of use from the perspective of social psychology. These moderating variables could thus help address inconsistency and the weak explanatory power of prior models and further explain the behavioural

(Fagan et al., 2012). Effort expectancy was found to play a significant role in chatbot adoption in a recent study of their use in the banking industry (Mogaji et al., 2021). Adoption and use of ChatGPT could be improved with the help of a large language model trained with a high effort expectancy. ChatGPT adoption and integration into daily routines are more probable when users perceive it as user-friendly. This may result in increased utilisation and enhanced utility of the technology. Therefore, understanding the effort expectancy should be a priority for individuals aiming to promote the usage and adoption of ChatGPT. This study defines effort expectations as the perceived level of usability of ChatGPT in providing assistance to customers.

H2: Effort expectancy has a positive impact with the intention to use ChatGPT.

Social influence pertains to an individual's perception of the recommendations made by influential individuals in their life, including family, peers, and colleagues, regarding the utilization of a an individual perceives that utilizing a specific technology will enhance their ability to carry out tasks with more effectiveness and efficiency (Venkatesh et al., 2003). Previous research on Chatbots indicates that performance expectancy plays a crucial role in predicting the acceptability and utilization of chatbots by users (Al-Emran et al., 2023), and it can be influenced by many elements associated with the chatbot's perceived utility, compatibility, and effect on job performance (Brachten et al., 2021);(Kasilingam, 2020), task accomplishment, sense of achievement, and enhanced engagement (Mogaji, 2021). UTAUT performance expectancy in the context of ChatGPT refers to how much users believe that adopting ChatGPT will improve their efficiency and effectiveness in completing their jobs. According to UTAUT, the user's beliefs regarding the compatibility of ChatGPT with their current work practices, the user's perception of the usefulness of ChatGPT, and their expectations regarding the impact of ChatGPT on their task performance are all potential determinants of performance expectancy. This study defines performance expectations as the extent to which individuals perceive that their utilization of ChatGPT contributes to the customer retention in the marketing industry. Therefore, this study proposes:

H1: Performance expectancy has a positive impact with the intention to use ChatGPT.

Effort expectancy refers to the perceived level of ease or difficulty associated with the utilization of the system

(Venkatesh et al., 2003). According to UTAUT, an individual's effort expectation is affected by a number of variables, such as their familiarity with technology, their confidence in their technical skills, the technology's complexity, and the accessibility of relevant resources and assistance (Muriithi et al., 2016). People are more likely to embrace new technologies if they believe they can easily use them daily activities (Menon & Shilpa, 2023). However, we have chosen to define facilitation criteria as the extent to which individuals perceive the existence of a system that enables the utilization of the new technology (Abrahão, 2016). Therefore, this study proposed:

H4: Facilitating Conditions has a positive impact with the intention to use ChatGPT.

C. PERCEIVED RISK

Perceived risk refers to the extent to which individuals hold the belief that they may encounter various forms of financial, social, psychological, physical, or temporal risks (Zhang et al., 2012). specific technology (Venkatesh et al., 2003). Previous research on chatbots indicates that social influence can impact the user's inclination to utilise a chatbot in various manners. The positive impact of social influence on the user's perception of the chatbots' usability and simplicity of use, as well as the perceived risks and barriers to their implementation, can be substantial (Mogaji, 2021);(Eng, 2009). Social influence can be derived from a multitude of sources, including friends, family, colleagues, experts, influencers, and online reviews (Fu et al., 2020). A user's social network can have a significant impact on their experience with ChatGPT, influencing their opinion of the app's usefulness and ease of use, their assessment of the benefits and hazards of adopting the app, and their belief in their own ability to make good use of the application. Social influence appears to play a crucial role in boosting the adoption of ChatGPT, as seen by its rapid global adoption and expanding usage quickly after its official launch (Saini, 2023);(Sier, 2022).

Therefore, this study proposed:

H3: Social influence will positively affect the intention to use Chat GPT.

Facilitating conditions refer to the degree to which an individual believes that there is sufficient organizational and technical infrastructure available to support the use of a specific system (Thompson et al., 1991). Incorporating this particular element into the ChatGPT system appears to pose a significant challenge. ChatGPT requires the presence of a computer or mobile device with internet access, a reliable and stable internet connection, and technical support to resolve any user-related issues. The presence of these facilitating conditions can have a significant impact on the adoption of ChatGPT. Provided that users have the necessary technological resources and assistance, they are more inclined to readily embrace ChatGPT and integrate it into their

H6b: The relationship between effort expectancy and the intention to use Chat GPT is moderated by gender.

H6c: The relationship between social influence and the intention to use Chat GPT is moderated by gender.

H6d: The relationship between facilitating conditions and the intention to use Chat GPT is moderated by gender.

H6e: The relationship between perceived risk and the intention to use Chat GPT is moderated by gender.

The research model and hypotheses are shown in Figure.1, based on the UTAUT model. Moreover, ChatGPT presents potential security implications. A significant issue of concern pertains to the potential for adversarial attacks, wherein an assailant endeavours to manipulate the model by supplying malevolent inputs that induce it to generate inaccurate or undesirable outputs (Lee, 2019). An additional concern pertains to the possibility of technology being utilized as a means to disseminate misinformation or propaganda, particularly in instances where it is incorporated into platforms with extensive user bases, such as social media (Lee, 2019). The potential for impersonation and identity theft is heightened by ChatGPT's ability to generate human-like text. When deciding whether or not to use ChatGPT or similar technologies, businesses and organizations should give careful consideration to these risks and take necessary precautions (Duffet, 2017). Therefore, this study proposed:

H5: Perceived risk will have a negative significant effect to the intention to use ChatGPT.

D. MODERATING EFFECT OF GENDER

The UTAUT model includes four moderators that influence the relationship between the model's core variables and users' behaviour: Gender, Age, Experience, and Voluntariness of usage (Venkatesh et al., 2003). The UTAUT model suggests that when predicting and explaining consumers' acceptance and usage behaviour of technology, it is important to consider these four moderators, as indicated by prior investigations (Dwivedi, 2019). However, this study is intended to focus on gender as a moderating effect. Previous research revealed that in the UTAUT model, gender is used as a key moderator in numerous users behaviour and technology usage studies (José , 2014). Additionally, in a study of gender differences in technology use, the effect of attitudes toward technology acceptance intention was moderated by gender (Thabane, 2010). This study proposes the following hypotheses based on the UTAUT model, including the moderating effect of gender.

H6a: The relationship between performance expectation and the intention to use Chat GPT is moderated by gender.

will be employed in a bigger and more thorough study (Thabane, 2010). (Johanson & Brooks, 2009) proposed that a pilot study aiming to conduct an initial survey or build a scale should include a minimum of 30 representative participants from the target group. Therefore, a preliminary examination of the survey tool was carried out through an online pre-questionnaire administered to 30 marketing professionals in Madagascar. The purpose was to

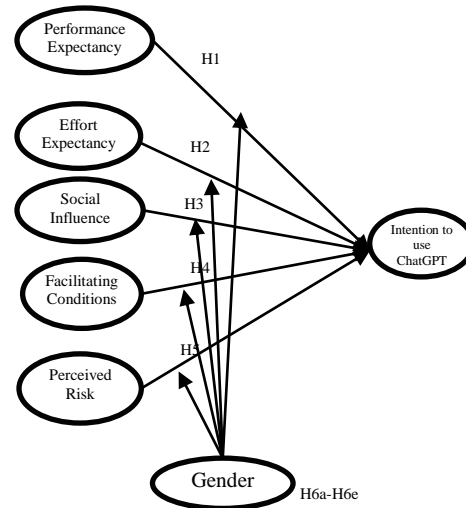


Figure 1: Research Model

III. METHOD

A. RESEARCH DESIGN

This study were employed a quantitative research approach to investigate the intention to use of chat GPT for business purposes in Madagascar. This study was undertaking an analysis within the framework of the Unified Theory of Acceptance and Use of Technology (UTAUT) focus on marketing employees in six provinces of Madagascar. Quantitative research was important for this study as it was allowing the researchers to collect numerical data that could be analyzed using statistical methods to draw conclusions.

B. DATA COLLECTION AND SAMPLE

The collection of data was conducted through two distinct stages: a preliminary pilot study followed by the primary survey. Pilot research is a preliminary examination conducted on a small scale to assess the practicality and viability of the methodologies that anchors ranging from “strongly disagree” (1) to “strongly agree” (5). The online survey questionnaire was consisting of three divisions. In first division, it was consisting of filter questions by using dichotomous scale (yes/no), if the answer was yes, automatically filtered as dismissed response but if the answer was no, the participant was allowed to fill the rest of the other parts. In the second division, thirteen items adapted from ((Venkatesh et determine its reliability and ensure the clarity of its wording. After carefully considering the feedback from the respondents, we conducted tests to assess the reliability of the scale. Additionally, we made revisions to the sentences to ensure a clear and unambiguous meaning. The main survey was conducted using a self-administered online questionnaire during October 18–20, 2023. Furthermore, the use of judgmental and snowball sampling, a form of non-probability sampling. The unit analysis was the marketing employee, it enabled the researchers to selectively focus on employees of marketing professionals at a certain level. A total of 128 sets were collected and were used for the

analysis. Table 1 shows the general characteristics of the sample.

Variables	Classification	Frequency	Percentage
Gender	Male	57	44.5
	Female	71	55.5
Age	20–29	63	49.2
	30–39	50	39.1
	40–49	14	10.9
	50 or more	1	0.8
Education level	High school or below	4	3.1
	Diploma	19	14.8
	Bachelor Degree	76	59.4
	Master	27	21.1
	PhD.	2	1.6
Year of Experience	1 year or below	16	12.5
	2-4 years	86	67.2
	5 years or more	26	20.3

Source: Research results.

Table 1: Demographics of the respondents Profile (n = 128)

C. MEASUREMENTS

The research model consists of five constructs. In order to ascertain the accuracy of all tools, each construct was assessed using various items, all of which were modified from prior studies to suit the technological setting of this GPT chat. All items were measured on a five-point Likert scale, with the sample (67.2%) had between two and four years of relevant work experience. According to this description, participants in the study are well-al., 2003) ;(Abrahão, 2016) ;(Lee, 2019) were used to measure the four constructs of UTAUT model: consumer's perceived level of performance expectancy, effort expectancy, social influence, and facilitating conditions for using chat GPT, then three items adapted from (Abrahão, 2016) were used to measure perceived risk. The measures for the intention to use Chat GPT was adapted from (Lee, 2019) and were included intent to use, to increase use, and to recommend chat GPT. While in the third division, it was consisting of the demographics (age, gender, education, experience). The survey questionnaire was prepared in double translations, from English to French to make it easier for Malagasy citizens to answer. The individual items used in the questionnaire are provided in the appendix.

D. DATA ANALYSIS

Smart PLS 4.0 software was used for the quality criteria r-square, discriminant Fornell Larker criterion and cross-loadings for validity test and composite reliability. For hypothesis testing, the study employed a structural equation model (SEM), using path coefficients. Fit indices were used to determine if the hypothesized model's fit with the sample data.

First, composite reliability was used in the evaluation of the measurement model to ensure that the constructs were internally consistent (Chin, 1998), which must have values greater than 0.7. The one-dimensionality of the constructs was then examined using Convergent Validity, with an AVE of at

least 0.5 being used for this purpose (Fornell & Larcker, 1981). Finally, the Fornell Larker criterion was used to determine whether or not the square roots of the AVEs were greater than the correlations between the constructs, so establishing discriminant validity.

The second step, evaluating the structural model, involved finding the proportion of variance in the dependent variable (intention to use) that could be attributed to the independent variables. This proportion is known as the coefficient of determination (R^2).

IV. RESULTS

The demographic of respondents is presented in the table 1 above. The majority of the sample (55.5%) was made up of women; the average age ranged from 20 to 29; the majority of the sample (59.4%) held at least a bachelor's degree; and the majority of the

QUALITY CRITERIA

Equipped to make advantage of the many channels of digital technology at their disposal for the purpose of client retention in the marketing sector. On the other hand, we can conclude from this that the sample is familiar with Chat GPT and other platforms that have a better developed infrastructure (i.e., are reliable, efficient, and cost-effective).

It is noteworthy that among the group of individuals familiar with technological advancements, particularly those pertaining to GPT chat, there exists a subgroup (4.6%) who initially reported no prior exposure to GPT chat. However, they expressed a growing interest in responding to additional inquiries.

A. RELIABILITY AND VALIDITY

The internal consistency of each construct in the model was tested using Composite reliability. The results show that all Composite reliability values were above 0.70, indicating the constructs employed in the model are reliable (Hair et al., 2006) And all average variance extracted values are above 0.50 (Fornell & Larcker, 1981). All standardized factor loadings for an item are statistically significant and above 0.60 (Hair et al., 2006).

Variable	Items	Factor loading	Composite Reliability	AVE
Performance expectancy (PE)	PE1	0.796	0.877	0.641
	PE2	0.851		
	PE3	0.718		
	PE4	0.831		
Effort expectancy (EE)	EE1	0.841	0.902	0.697
	EE2	0.772		
	EE3	0.911		
	EE4	0.810		
Social influence (SI)	SI1	0.694	0.777	0.639
	SI2	0.893		

Facilitating conditions (FC)	FC1	0.695	0.811	0.592
	FC2	0.886		
	FC3	0.712		
Privacy risk (PR)	PR1	0.830	0.903	0.756
	PR2	0.889		
	PR3	0.888		
Intention to use Chat GPT (IU)	IU1	0.840	0.895	0.741
	IU2	0.873		
	IU3	0.868		

Source: Research results

Table 2: Confirmatory factor analysis

	R-square	R-square adjusted
IU	0.281	0.252

Source: Research results

Table 3: Square-Overview

R^2 and R^2 adjusted are valuable tools for assessing the quality of regression models. R^2 focuses on the amount of variation explained, while R^2 adjusted accounts for model complexity. Both measures are used in conjunction with other relevant statistics and interpreted in the context of this research.

DISCRIMINANT VALIDITY TEST

Table 4 displays the comparison of the correlation between the constructs and the AVE root, which is the next criterion for validity. The AVE value of each construct is greater than the highest r^2 value of the other values. In other words, discriminant validity can be considered achieved.

The square roots of AVE are represented by the diagonal elements (bold figures), while the correlations among the constructs are represented by the off-diagonal elements. Values on the diagonal must be larger than those off the diagonal for the discriminant function to be valid (Fornell & Larcker, 1981).

Constructs	EE	FC	IU	PE	PR	SI
EE	0.835					
FC	0.577	0.769				
IU	0.363	0.367	0.861			
PE	0.737	0.634	0.415	0.800		
PR	0.053	0.041	-0.217	0.002	0.869	
SI	0.530	0.415	0.414	0.570	-0.296	0.799

Source: Research results

Table 4: Discriminant validity (Fornell-Larker criterion)

B. STRUCTURAL MODEL ASSESSMENT

The statistical test evaluates the association between variables by estimating the path coefficients. The path coefficient value signifies the substantial influence of external constructions on endogenous constructs. This analysis is conducted using the Bootstrapping procedure in the Partial Least Square (PLS) application program. Table 5 summarizes the findings of the Smart PLS 4 significance test for the research model's path coefficient.

	O.sample (O)	Sample (M)	Std.D	T statistics	P value	Result
H1.PE→IU	0.153	0.146	0.139	1.097	0.279	Not Supported
H2.EE→IU	0.030	0.045	0.130	0.229	0.410	Not Supported
H3.SI→IU	0.237	0.220	0.100	2.361	0.009	Supported
H4.FC→IU	0.164	0.179	0.097	1.679	0.047	Supported
H5.PR→IU	-0.223	-0.224	0.081	2.754	0.003	Supported

Source: Results of Data Processing Information

Note: *T Statistics $1,96 <$ and p-value (significant level= 5%).

Table 5: Path Coefficients- Mean, STDEV, T-Values, p Value

C. MODERATING EFFECT OF GENDER ASSESSMENT

To examine the moderating effects of gender in the adopted SEM model, a multiple group analysis approach comparing males and females was done by bootstrapping procedure in the Partial Least Square (PLS) 4 application program, including the data group of male and female. The significance of the path coefficient value, which shows the strong relationship effects between endogenous constructs to exogenous constructs carried out by the moderating effect of gender. The results are recapitulated in table 6.

Path Complete	Dif. (M/F)	1-tailed (M/F)	2-tailed (M/F)	Result
	P value	P value	P values	
H6.a PE →IU	-0.265	0.826	0.174	Not supported
H6.b EE→IU	-0.063	0.633	0.367	Not supported
H6.c SI→IU	0.196	0.249	0.249	Not supported
H6.d FC→IU	0.192	0.152	0.152	Not supported
H6.e PR→IU	0.228	0.138	0.138	Not supported

Source: Results of Data Processing Information

Note: *P-value (significant level=5%), M=Male; F=Female.

Table 6: Bootstrap Multigroup Results

V. DISCUSSION

As Open AI continues to be developed using new technologies, such as Chat GPT, GPT-3, GPT-4, which are currently promoted, it is expected that the use after adoption. This study investigated the factors affecting marketing employees intentions to use Chat GPT by extending the UTAUT model through exploring on perceived risk. We also revealed the moderating effect of gender on the relationships among variables. The empirical findings have some theoretical and practical implications.

First, the result suggested that the performance expectancy and effort expectancy have negative effects to the intention to use Chat GPT. These findings are specifically less common and could be specific to this study (Open Ai, 2023). Performance expectancy refers to an individual's perception of how much technology (Chat GPT) will not enhance their

performance or provide expected benefits. In context of marketing employees in Madagascar, the performance expectancy of Chat GPT can be interpreted as how their perception of using chat GPT will not improve their abilities in the fields of marketing. Fundamentally, in this case marketing employees believe that using Chat GPT will not significantly benefit their development marketing in customer retention. Also, effort expectancy refers to an individual's perception. In context of marketing employees in Madagascar, the effort expectancy of Chat GPT can be interpreted as how their perception of using chat GPT how easy or difficult it is to use Chat GPT. In this case, marketing employees in Madagascar perceive Chat GPT as not easy to use and requiring significant effort, they are more likely to have a stronger for non-intention to use Chat GPT. On the other hand, the effects of social influence and facilitating conditions on UTAUT model were positive and significantly impacted in this study. This result reflects the characteristics of marketing employees in Madagascar environment. Before taking a new advance technology such as Chat GPT, it is recommended to assist the users, providing a pre-training to the users to avoid inconvenient issues.

Second, the result showed that the added variable of perceived risk had a negative effect on the intention to use Chat GPT. The UTAUT model has been extended in various studies, in combination with other concepts and theories (Slade et al., 2016). Recently, there has been growing interest in the effects of the perceived risk of users for technology acceptance. However, most of these studies have limitations in integrating various types of risks into a single concept and measuring their influence. In this respect, this study contributes to a more complete understanding of marketing employees Chat GPT usage by extending the UTAUT model by exploring on perceived risk. Furthermore, in practice, the results highlight that chat GPT operators should not overlook user's perceptions of privacy risk when use of Chat GPT will become more common. However, for Chat GPT to completely replace existing methods in customer retention in marketing, it is necessary to eliminate the various obstacles in the process of expanding Chat GPT toward continuous unlike in previous studies, effort expectancy was not significant. This finding suggests that the perceived risk, not the complexity of the service or difficulty in using it, could be a major hindrance in Chat GPT adoption and diffusion.

Third, multiple group analysis showed that gender moderating in single and in two tailed paths in the model. Comparing to the both genders male and female, all variables had no significant effects on the intention to use Chat GPT. After conducting multiple group analysis, previous study confirmed that structural equation modelling analysis, gender did not moderate social influence, effort expectancy, performance expectancy, to intention to use (Hoy & Milne, 2010), and there is also a difference in the intensity of the negative effect of the perceived risk on user's behaviour according to gender (Sheehan, 1999). Considering the results of previous studies, in which there was no gender control effect in the model adding perceived risk to the UTAUT model, it is necessary to identify the different types of risk perceived by the marketing employees as in this study. Practically, these results show that various communication

tactics are needed per gender while promoting Chat GPT operations. However, in bootstrapping results suggested that for men, the use of Chat GPT may increase if organizations that offer ChatGPT platform will guarantee its proper functioning, while the important for women is the provision of technical support, information, and lowering the perceived risk.

V. LIMITATIONS AND FUTURE RESEARCH

Although this study divided users by gender, users can be categorized into multiple other groups using various criteria. (Venkatesh et al., 2003) suggested that past experience and the voluntariness of use can moderate the influence of independent variables on users' acceptance of technology. Therefore, in future studies, it is necessary to identify different user segments in the use of Chat GPT by examining the moderating effects of the various factors.

Another possible extension of this study could be dividing use by different user groups. The data for this study were only collected from Madagascar; thus, the findings may not be generalizable to other geographical and cultural areas. Because perception and attitudes toward technology have been reported using Chat GPT. The development of reliable, secure technologies and policy efforts to protect personal information would lower user's perceived risks and contribute to a more stable and continuous use of Chat GPT. Additionally, to exhibit significant differences by age, cultural background (Elias et al., 2012), and basic personality traits (Barford & Smillie, 2016), verifying the validity of a research model and analysing the differences according to these variables would be meaningful in future research.

REFERENCES

- [1] Al-Emran, M., AlQudah, A. A., Abbasi, G. A., Al-Sharafi, M. A., & Iranmanesh, M. (2023). Determinants of using AI-based chatbots for knowledge sharing: evidence from PLS-SEM and fuzzy sets (fsQCA). *IEEE Transactions on Engineering Management*, 71, 4985-4999.
- [2] Barford, K. A., & Smillie, L. D. (2016). Openness and other Big Five traits in relation to dispositional mixed emotions. *Personality and individual differences*, 102, 118-122.
- [3] Brachten, F., Kissmer, T., & Stieglitz, S. (2021). The acceptance of chatbots in an enterprise context—A survey study. *International Journal of Information Management*, 60, 102375.
- [4] Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research/Lawrence Erlbaum Associates*.
- [5] Deng, J., & Lin, Y. (2022). The benefits and challenges of ChatGPT: An overview. *Frontiers in Computing and Intelligent Systems*, 2(2), 81-83.
- [6] de Sena Abrahão, R., Moriguchi, S. N., & Andrade, D. F. (2016). Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance

- and Use of Technology (UTAUT). RAI Revista de administracao e Inovacao, 13(3), 221-230.
- [7] Duffett, R. G. (2017). Influence of social media marketing communications on young consumers' attitudes. *Young Consumers*, 18(1), 19-39.
- [8] Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information systems frontiers*, 21, 719-734.
- [9] Elias, S. M., Smith, W. L., & Barney, C. E. (2012). Age as a moderator of attitude towards technology in the workplace: Work motivation and overall job satisfaction. *Behaviour & Information Technology*, 31(5), 453-467.
- [10] Eng, T. Y., & Quaia, G. (2009). Strategies for improving new product adoption in uncertain environments: A selective review of the literature. *Industrial Marketing Management*, 38(3), 275-282.
- [11] Fagan, M., Kilmon, C., & Pandey, V. (2012). Exploring the adoption of a virtual reality simulation: The role of perceived ease of use, perceived usefulness and personal innovativeness. *Campus-Wide Information Systems*, 29(2), 117-127.
- [12] Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- [13] Fu (Fred), Jen-Ruei, Lu, I. W., Chen, J. H., & Farn, C. K. (2020). Investigating consumers' online social shopping intention: An information processing perspective. *International Journal of Information Management*, 54.
- [14] Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management: An international publication of the product development & management association*, 19(2), 110-132.
- [15] George, A. S., & George, A. H. (2023). A review of ChatGPT AI's impact on several business sectors. *Partners universal international innovation journal*, 1(1), 9-23.
- [16] Gordijn, B., & Have, H. T. (2023). ChatGPT: evolution or revolution?. *Medicine, Health Care and Philosophy*, 26(1), 1-2.
- [17] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6).
- [18] Hoy, M. G., & Milne, G. (2010). Gender differences in privacy-related measures for young adult Facebook users. *Journal of interactive advertising*, 10(2), 28-45.
- [19] Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: sample size for pilot studies. *Educational and psychological measurement*, 70(3), 394-400.
- [20] José Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Role of gender on acceptance of mobile payment. *Industrial Management & Data Systems*, 114(2), 220-240.
- [21] Kasilingam, D. L. (2020). Understanding the attitude and intention to use smartphone chatbots for shopping. *Technology in society*, 62, 101280.
- [22] Keinänen, H., & Kuivalainen, O. (2015). Antecedents of social media B2B use in industrial marketing context: customers' view. *Journal of Business & Industrial Marketing*, 30(6), 711-722.
- [23] Kim, H. J. (2023). A study on the intentions of ChatGPT users using the extended UTAUT model. *Journal of Digital Contents Society*, 24(7), 1465-1473.
- [24] Lee, J. M., Lee, B., & Rha, J. Y. (2019). Determinants of mobile payment usage and the moderating effect of gender: Extending the UTAUT model with privacy risk. *International Journal of Electronic Commerce Studies*, 10(1), 43-64.
- [25] Li, Y., & Zhang, Y. (2023, August). Analysis of factors influencing ChatGPT user's willingness to use based on principal component analysis. In *Sixth International Conference on Advanced Electronic Materials, Computers, and Software Engineering (AEMCSE 2023)* (Vol. 12787, pp. 643-647). SPIE.
- [26] Menon, D., & Shilpa, K. (2023). "Chatting with ChatGPT": Analyzing the factors influencing users' intention to Use the Open AI's ChatGPT using the UTAUT model. *Heliyon*, 9(11).
- [27] Mhlanga, D. (2023). The value of open AI and chat GPT for the current learning environments and the potential future uses. Available at SSRN 4439267.
- [28] Mogaji, E., Balakrishnan, J., Nwoba, A. C., & Nguyen, N. P. (2021). Emerging-market consumers' interactions with banking chatbots. *Telematics and Informatics*, 65, 101711.
- [29] Muriithi, P., Horner, D., & Pemberton, L. (2016). Factors contributing to adoption and use of information and communication technologies within research collaborations in Kenya. *Information Technology for Development*, 22(sup1), 84-100.
- [30] Open Ai. (2023). Open AI. <https://openai.com>
- [31] Qin, X., & Jiang, Z. (2019). The impact of AI on the advertising process: The Chinese experience. *Journal of Advertising*, 48(4), 338-346.
- [32] Ratovondrahona, A. J., Rakotozanany, H. M., Mahatody, T., & Manantsoa, V. (2023). Human like programming using SPADE BDI agents and the GPT-3-based Transformer. *Human Interaction and Emerging Technologies (IHET-AI 2023): Artificial Intelligence and Future Applications*, 70(70).
- [33] Saini, N. (2023). ChatGPT becomes fastest growing app in the world, records 100mn users in 2 month. *LiveMint*.
- [34] Sakirin, T., & Said, R. B. (2023). User preferences for ChatGPT-powered conversational interfaces versus traditional methods. *Mesopotamian Journal of Computer Science*, 2023, 22-28.
- [35] Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2019). Social media marketing: Comparative effect of advertisement sources. *Journal of Retailing and Consumer Services*, 46, 58-69.
- [36] Sheehan, K. B. (1999). An investigation of gender differences in on-line privacy concerns
- [37] Sier, J. (2022). CHATGPT takes the internet by storm, bad poetry and all. *Australian Financial Review*. December, 8.
- [38] Slade, E., Dwivedi, Y., Williams, M., & Piercy, N. (2016). An empirical investigation of remote mobile payment adoption. In *Let's Get Engaged! Crossing the*

Threshold of Marketing's Engagement Era: Proceedings of the 2014 Academy of Marketing Science (AMS) Annual Conference (pp. 441-442). Springer International Publishing.

- [39] Tarasiuk, G., & Czapski, G. (2023). Professional work in the era of Chat GPT.
- [40] Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., ... & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, 10, 1-10.
- [41] Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *MIS quarterly*, 125-143.
- [42] Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS quarterly*, 115-139.
- [43] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- [44] Weinstein, A. (2002). Customer retention: A usage segmentation and customer value approach. *Journal of Targeting, Measurement and Analysis for Marketing*, 10(3), 259-268.
- [45] Wirth, N. (2018). Hello marketing, what can artificial intelligence help you with?. *International Journal of Market Research*, 60(5), 435-438.
- [46] Xu, Y., Shieh, C. H., van Esch, P., & Ling, I. L. (2020). AI customer service: Task complexity, problem-solving ability, and usage intention. *Australasian marketing journal*, 28(4), 189-199.
- [47] Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in human behavior*, 28(5), 1902-1911.

IJIRAS