

The Study of Users' Satisfaction and Acceptance on Artificial Intelligence (AI)

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Abstract. The rise of ChatGPT in recent years has garnered significant attention, prompting widespread interest in the rapid global popularity of this AI technology. Conducting research on this topic would be quite intriguing. The objective of this study was to ascertain the satisfaction and acceptance levels of users of AI robots. This study presents an analysis of the technology acceptance model theory, which enables the prediction of users' intentions and behaviors. The methodology employed in this study involves the utilization of a SWOT analysis framework, which encompasses the identification and evaluation of strengths, weaknesses, opportunities, and threats. The tool has the capability to discern the internal and external factors that impact an organization. The outcome of the investigation will lead to enhancements in the capabilities of ChatGPT, thereby increasing its adoption as a daily tool and enhancing the long-term user experience. This study provides a substantial addition to the field of business, specifically within the domain of artificial intelligence (AI), hence serving as a valuable reference for forthcoming market objectives and strategies.

Keywords: ChatGPT; Technology Acceptance Model; SWOT analysis; Personalized; Convenience

1. Introduction

AI technology has recently produced a significant social shift by capturing people's attention and altering the way people live and interact with the world around us. The simple inclusion of AI into people's daily lives has changed numerous businesses and elevated it to a topic of high interest and relevance. Consider entering a crowded hot pot restaurant where an AI robot serves as the waitress, taking care of tables and bringing dishes from the kitchen. Consider checking into a future hotel and having an AI robot ring the doorbell, move up the elevator, and offer someone a new pair of slippers. Even if a person gets lost in a shopping mall, AI robots will direct them to the movie, optimizing their travel. These are just a few examples of how artificial intelligence is becoming more common. It is used in many industries, including healthcare, entertainment, banking, commerce, and food. This technology has changed the way people work and interact with their surroundings, ushering in an era of unparalleled efficiency and ease. Labor expenses have fallen as AI machines have replaced repetitive chores, freeing humans to focus on more sophisticated, creative initiatives. However, the advancement of AI extends beyond basic technology. An example of an AI robot is Open AI, which can not only execute jobs but also conduct meaningful conversations, answer queries, and even produce poetry. It has successfully bridged the gap between a human and a machine. Artificial intelligence is ushering in a new era of limitless possibilities, providing consumers with unprecedented ease, disrupting entire sectors, and altering how people interact with AI robots.

As ChatGPT gained popularity, numerous academics and universities conducted studies based on its application. On January 25th, 2023, University of Minnesota Law School scholars reported that they have investigated how ChatGPT as an AI aids students in a law school test involving multiple choice and written questions in four law courses [1]. They discovered that the average grade for these four courses is C+, which allows a student to graduate [1]. ChatGPT performed admirably on multiple-choice questions but not so well on written questions [1]. Also, ChatGPT only got 8 out of 29 mathematics questions correct, but it can get 16 out of 31 non-mathematics questions correct [1]. It demonstrates inconsistent skill in a law exam [1]. Another study found that a few research scientists

used ChatGPT to perform a survey on student motivation [2]. According to the findings, students utilize ChatGPT for academic content creation, information seeking, novelty, and convenience [2].

Based on their experiences, ChatGPT users believe ChatGPT robots encounter numerous restrictions and obstacles [3]. For example, when deployed, ChatGPT does not appear to be emotionally intelligent or empathic [3]. ChatGPT is unable of comprehending human speaking tone and emotions [3]. [3] The resultant responses are always chilly and shallow. Furthermore, the grammar and vocabulary it generates are inaccurate and difficult to understand [3]. When users enquire how the weather is in their city, ChatGPT cannot provide appropriate answers since it lacks reliable location information [3]. These issues may cause users to lose interest in ChatGPT and hence lose additional clients.

From the details shown above, there's a research gap in that no one has thought about the user's satisfaction based on ChatGPT or other AI models. How did users feel about the ChatGPT model when they were using it? The value and importance of this research gap is that, although artificial intelligence can provide convenience for everyone, is it a good feeling to use it? Will customers be satisfied with this model? The Technology Acceptance Model (TAM) concept is needed on these issues.

2. Literature Review

Along with the enhancement of technology improvement and innovation, users' satisfaction and acceptance of technology are significant. The theory of the TAM explains and shows the acceptance of information from users of a technology [4]. It was discovered by Davis in 1989 based on the theory of reasoned action (TRA) in psychology research [4]. TAM is predominance because of its information technologies, validity and reliability, extensive application, and research tradition [5]. It formed with three parts: perceived ease of use, perceived usefulness, and attitude [5].

The significance of users' pleasure and acceptance of technology is evident in conjunction with the advancement of technology through development and innovation. The Technology Acceptance Model (TAM) is a theoretical framework that elucidates the factors influencing the acceptance of information by users of a given technology [4]. Davis made a discovery in the field of psychology research in 1989, drawing upon the theory of reasoned action (TRA) [4]. The dominance of TAM can be attributed to several factors, including its utilization of advanced information technology, its emphasis on validity and dependability, its wide-ranging application across several domains, and its established research tradition [5]. The construct consisted of three components, namely perceived ease of use, perceived usefulness, and attitude [5].

When a person believes a technology system is simple to comprehend and operate, this is referred to as perceived ease of use (PEOU). The majority of researchers believed it could influence consumer behavior and intentions [6]. For example, Rauniar et al. discovered in their study of 389 Facebook users in 2004 that perceived ease of use had a beneficial effect on watching movies online [6]. Hubert et al. (2018) discovered that smart houses can influence perceived ease of use since it is easier to give consumers convenience and a lucrative life [6]. Furthermore, the purpose of smart homes is to deliver enjoyment to their users, and users believe smart houses can provide a more comfortable living environment when they are at home [6]. When customers acquire Korean sports and fitness wearable items, perceived ease of use leads to favorable behavior [6]. Innovations and optimism about positive technologies can also impact consumer buying intentions.

When a person gains or learns something helpful from a certain service or system that is useful to them, this is referred to as perceived usefulness (PU) [6]. Some researchers suggested it could have an impact on customer behavior and intentions. Huang et al., for example, conducted research using COPLINK technology. Huang used a women-focused website to examine 390 subjects [5]. Mathieson et al. discovered in 2001 that 401 users accepted a bulletin board system for professional accountants [5]. However, Chau and Hu (2002) studied the utilization of telemedicine technology in

a research study with 409 physicians [5]. All of the research mentioned above illustrates that perceived utility influences consumer behavior and intentions.

Attitude refers to how an individual or a consumer feels about an activity in a technology system [7]. Researchers also argued that consumers' attitudes could influence their behavior and intentions. In one study, Rauniar et al. (2014) discovered that users use Facebook, Twitter, and YouTube because they develop a good attitude when using these social media sites [8]. They may receive millions of comments on a post or millions of likes on a YouTube video [8]. Manis and Choi conducted model testing on over 800 members of LinkedIn, the VR social networking site, in 2019 [9]. According to the findings of this study, the majority of users are attentive and concerned about their views regarding the purchase of VR hardware [9]. Min et al. conducted a study on Uber customers in 2019 that included age, gender, and cultural background data [10]. They discovered that Uber users are more familiar with the new technology and business strategy, resulting in a favorable opinion toward them [10].

Overall, the research above emphasizes the significance of PEOU, PU, and attitude in TAM theory. Users and ChatGPT have a favorable and significant association with usability and hospitality influence, which might alter their acceptance rate towards ChatGPT according to perceived ease of use. Because all artificial intelligence models have sophisticated technology systems, ease of use as an AI might be the deciding factor in whether a user wants to utilize ChatGPT or not. When consumers believe that ChatGPT can provide them with convenience and efficacy, perceived usefulness is vital to the system. It can save users time by creating relevant responses for each customer. At times, users' attitudes toward ChatGPT can influence their behavior and intentions. ChatGPT will deliver a positive service experience and attract more reliable users who accept this technology if they maintain a positive attitude. ChatGPT, on the other hand, will not provide accurate replies to users if they have a bad attitude.

3. Method

3.1. Research Design

This study will employ the SWOT analysis methodology to assess the investigation conducted on ChatGPT. The SWOT analysis is widely regarded as an effective tool for doing a comprehensive analysis that encompasses both internal factors, such as strengths and weaknesses, and external factors, such as opportunities and threats [11]. The utilization of several pieces of evidence aids in the comprehensive comprehension and enhancement of a product or brand [11]. The utilization of ChatGPT research holds relevance in the context of the SWOT analysis approach as it facilitates the enhancement of the research backdrop by providing readers with a comprehensive array of information pertaining to the prospective effects of AI advancements on their client base.

3.2. ChatGPT

Open AI is the brand of ChatGPT, which has been hosted since December 11, 2015, in San Francisco, California, in the United States. It is a company brand that specializes in doing research on artificial intelligence technology by using mass data and powerful neural networks. It originally wanted to become an unprofitable organization but gave up on that idea because of the salary of one of its employees in 2016. They found out that an employee's salary has to be 1.9 million dollars. It is too expensive for Open AI to survive because their computing skills need to be strong. During the first few years of working, in the year 2019, Open AI officially became a profitable organization. Sam Altman, the CEO of Open AI, got \$1 billion in investment from Microsoft, and Microsoft accepted to license and commercialize some of Open AI's technology and computing. The arrival of ChatGPT changed Open AI's position in the AI field and brought a huge turning point. Although ChatGPT is an AI software, it is no longer an AI software that does not understand human nature and does not show authenticity. It will be more down-to-earth and understand what the customer wants. Also, it can generate different answers to calculate what a customer's personality or characteristics

are by using pictures and texts. Until now, Open AI has generated \$25 million to \$50 million in annual revenue and has up to 51 to 200 employees.

3.3. SWOT-Analysis

3.3.1. Strength

ChatGPT's greatest strength is its capacity to provide consumers with convenience. With the advancement of technology, practically everyone now uses mobile technology, such as cell phones, as a daily communication tool. ChatGPT is taking advantage of this occurrence to create ChatGPT, which allows customers to receive all the information they need using only their mobile phones or PCs. ChatGPT can also provide users with customized responses [12]. When using ChatGPT, consumers may have the impression that they are conversing with a real person rather than an AI robot.

Large language models (LLMs) are a type of model that can interpret and create natural language [13]. ChatGPT also has memory in its system [12]. For example, if a user asks something connected to food while attempting to ask something else, ChatGPT will automatically respond with food-related responses. Users do not need to type "food" many times. ChatGPT is simple to use by simply typing users' inquiries into the textbox.

These advantages can improve users' perceived ease of use and perceived utility, attracting more attention and allowing them to continue using ChatGPT in their daily lives. In the United States, there is a survey focused on whether ChatGPT is useful or not for adult users over and under the age of 50 [14]. ChatGPT is rated as highly beneficial for amusement, education, and work by 74 out of 101 users [14].

3.3.2. Weakness

While ChatGPT offers many benefits to its users, it also exhibits several limitations during user interactions. According to the available evidence [3], ChatGPT's responses are devoid of emotional content. Several nouns and phrases within the discourse exhibit a lack of comprehensibility [3].

There is a discernible inclination among users to exhibit a negative trend with regards to this particular vulnerability. The available data indicates a substantial decline in the user base of ChatGPT for both mobile phone and desktop platforms during the months of June and July in the year 2023. Between these two options, there was a decrease in the number of computer users starting in May. The BofA Global Research survey findings indicate that users of ChatGPT exhibit a decline in engagement with this artificial intelligence entity after a duration of fifteen interactions [15]. According to the survey data, a majority of respondents, specifically 60%, reported using ChatGPT for search purposes. However, a significant proportion, 45% of these respondents, indicated that they would continue to utilize Google for search despite their usage of ChatGPT [15]. This particular shortcoming has the potential to diminish users' enthusiasm for utilizing ChatGPT, thereby impacting their perception of its ease of use and usefulness. Over time, users may experience a decline in their recollection and inclination to utilize ChatGPT as a tool.

3.3.3. Opportunity

ChatGPT can have an opportunity in education [12]. There are not many AI models that can provide academic references, such as Google Scholar. ChatGPT can cooperate with universities and scientific labs to get information from them [12]. Therefore, ChatGPT can surpass Google and Baidu with a wider database and great personalized responses in natural languages. Student users only need to use ChatGPT as the only search engine for schoolwork. This opportunity can bring a wider market chance for ChatGPT as an AI and a perceived ease of use and usefulness to users. The focus audience group of ChatGPT users becomes more spread out.

3.3.4. Threats

If ChatGPT is capable of meeting the educational needs mentioned before, it may introduce a potential risk of plagiarism within the academic materials. The preservation of academic integrity

holds significant importance, particularly within educational institutions. According to a poll, a majority of college students in the United States engage in the utilization of ChatGPT during examinations and academic assignments, a practice that is deemed academic dishonesty and plagiarism [16]. In order to enhance its utility for students completing academic assignments, ChatGPT should address the issue of work-cited issues more effectively. Simultaneously, the perceived simplicity of use and perceived usefulness as viewed by users present a potential challenge. There exists a possibility that users, particularly students, may opt for alternative technologies as substitutes for ChatGPT due to concerns that its usage could potentially undermine academic integrity within their academic curricula.

4. Results & Discussion

In general, ChatGPT proves to be a valuable and convenient tool for consumers seeking to inquire about or acquire information. Its accessibility on mobile devices facilitates prompt research endeavors. ChatGPT possesses the capability to autonomously provide answers to inquiries posed by users and provide tailored responses for their specific needs. However, ChatGPT does not possess emotional capabilities, particularly when it comes to infrequently used terminology and phrases. The comprehension of the content is a significant challenge for users.

Overall, ChatGPT demonstrates its worth and convenience as a beneficial tool for consumers who are seeking to inquire about or obtain information. The ease of accessing information on mobile devices greatly promotes efficient study efforts. ChatGPT exhibits the capacity to independently furnish responses to user queries and deliver customized replies that cater to their individual requirements. Nevertheless, ChatGPT lacks emotional capacities, notably in relation to less commonly employed vocabulary and expressions. Understanding the content is a considerable obstacle for users.

Previous scholars suggested that social media platforms or a product have the potential to elicit positive customer behavior, a notion that aligns with the ChatGPT model's ability to enhance user efficiency and convenience throughout its utilization. ChatGPT has the potential to effectively address the users' perceptions of both ease of use and usefulness over time. This research article shares a commonality with previous research. In contrast, it is noteworthy that researchers did not extensively address the aspect of product quality while communicating with clients. While ChatGPT has commendable performance as an AI model, there is room for improvement and enhancement in the quality of its generated responses. The system should provide responses that are unambiguous and rich in affective content, fostering a sense of interpersonal interaction for users rather than a mechanistic exchange.

5. Conclusion

Based on the results of this study, it gives a solution: during the era of widespread technology, people strongly rely on technology every day. In the meantime, AI is slowly appearing in people's lives. ChatGPT is one of the popular AI tools people use very often. Do users fully accept and are satisfied with ChatGPT? Yes, they are gradually accepting this AI tool, and ChatGPT is finding ways to improve its function.

This research paper dives into an in-depth analysis using the TAM as a guide. With the three key components: PEOU, PU, and attitude. By investigating these elements, it aims to shed light on their multifaceted application across various dimensions. Furthermore, this paper makes a notable contribution to the field of AI, particularly in the context of ChatGPT and similar AI tools. This paper takes these innovations as exemplars of a broader endeavor to enhance the user experience when interacting with AI models. Through this examination, this paper seeks to illuminate pathways for developing AI systems that are more user-friendly, intuitive, and accommodating, thus paving the way for a more seamless integration of artificial intelligence into people's daily lives.

However, the limitation of this research study is not explaining too much detail about the researchers' research and visual pictures. In the future, adding more graphs or data tables will be more beneficial for this paper so that the readers can understand it easily.

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