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Consumption Values, Attitudes and Continuance Intention to Adopt ChatGPT-driven E-Commerce AI Chatbot (LazzieChat)

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Abstract

The rapid rise of chat generative pre-trained transformer (Chat GPT) has brought huge opportunities for e-commerce platforms to use it for consumer communication and service. This paper proposes a research framework to expand the value-attitude-behavior model by integrating the theory of consumption values. The purpose is to explore key consumption values that affect consumers' attitudes and their continuance intention to adopt ChatGPT-driven chatbots (i.e., LazzieChat) in the e-commerce services context while examining the moderating effect of online shopping self-efficacy in this process. A questionnaire survey was conducted in Singapore, involving 305 participants who had experienced LazzieChat in Lazada. Use the structural equation modelling of Smarts 4 to analyze the data. The results show that consumer 'attitudes towards LazzieChat have significantly affected their continuance intention to adopt LazzieChat, and online shopping self-efficacy has moderated this relationship. In addition, the research confirms that emotional value and epistemic value are the main driving factors of consumer 'attitudes, followed by functional value, social value and epistemic value. Consumers' attitudes towards LazzieChat mediate the relationship between functional value, social value, epistemic value, and continuance intention to adopt LazzieChat. By developing a research framework that follows the logic of value-attitude-behavior model, this study provides theoretical and practical insights based on the theory of consumer values, which could guide e-commerce platforms to more

effectively cater to their consumers' continuance intention of adopting ChatGPT-driven e-commerce AI chatbot service.

Keywords: Theory of consumption value, the value-attitude-behavior (VAB) model, ChatGPT, chatbots, LazzieChat continuance intention, inline shopping self-efficacy.

1. Introduction

The rapid development of artificial intelligence (AI) has changed the online consumer service experience and created great opportunities for companies to interact with their consumers via chatbots. (Chen et al., 2021; Hollebeek et al., 2023; Kumar et al., 2019; Sidaoui et al., 2020). In Singapore, nearly half of IT professionals have reported accelerated AI tool development, particularly chatbots (Straits Times, 2021). E-commerce leads in chatbot adoption, with predictions of over $100 billion in transactions by 2023 (ServiceBell, 2023). This trend reflects the increasing use of AI-driven chatbots to enhance e-commerce consumer service (Chen et al., 2021; Sidaoui et al., 2020).

Although the adoption rate of chatbots is getting higher and higher in e-commerce consumer service, there are challenges like development expertise and context awareness (Lei et al., 2021), leading to issues like repetitive responses and delayed replies (iiMedia Research, 2021). To address these challenges, advanced AI tools like Chat Generative Pre-Trained Transformer (ChatGPT) offer precise and personalized responses (GlobeNewswire, 2023). Since its launch on November 30, 2022, ChatGPT, a new generation of generative artificial intelligence chatbot, has brought surprises to users with its revolutionary functions, which can answer conversation allies and show stronger professional knowledge and awareness of context (Anders, 2023). Hence, the ChatGPT-driven chatbot is highly adaptable and has already been integrated into various e-commerce platforms (Jumpseller, 2023), such as Kronos, Air India, Expedia, and eBay (GlobeNewswire, 2023; Outlookindia, 2023; Internet Retailing, 2023). Besides, e-commerce giants such as Alibaba, Amazon and Lazada have implemented Generative artificial intelligence chatbot applications to enhance their e-commerce operations capabilities (Kshetri, 2024; Yordan, 2023). For example, Lazada consumers can access LazzieChat by swiping down the Lazada app homepage (Lazada, 2023). LazzieChat can naturally answer its consumers' shopping queries and recommend relevant products or themes to consumers, and can also find product descriptions and link them to products provided on the e-commerce platform (Yordan, 2023), which promotes LazzieChat to achieve an impressive utilization rate with the support of ChatGPT-driven e-commerce AI chat robot (Lazada, 2023; SimilarWeb, 2023). This shows that using ChatGPT as a chatbot for online consumer experience in e-commerce is a growing trend with great market potential. However, there is limited research that focuses on consumers' continuance intention to adopt ChatGPT-driven chatbots, specifically LazzieChat.

Academic studies have explored AI chatbots in e-commerce, emphasizing usability, empathy, personality, and consumer attitudes (Hollebeek et al., 2023; Kumar et al., 2019; Sidaoui et al., 2022). In the ChatGPT-driven context, Kshetri (2024) suggested that ChatGPT-driven chatbot can provide consumers with a personalized and interactive e-commerce experience in e-commerce, which greatly improves efficiency and strengthens value proposition. Nevertheless, empirical data on ChatGPT-driven chatbots in e-commerce are scarce, and the role of consumer perceived values is underexplored (Hu et al., 2018; Kshetri, 2024)). Hence, there is still a gap in the dimension of value proposition concerning the online consumer experience with ChatGPT-driven chatbot adoption in e-commerce, while the moderating effects on chatbot adoption remain underexplored (Chen et al., 2023). Meanwhile, Strzelecki (2023) called for more literature about individuals' intentions to adopt ChatGPT. Therefore, this paper attempts to use the ChatGPT-driven e-commerce chatbot (i.e., LazzieChat) for further research in this field. In other words, this study extends the consumption values theory and follows value-attitude-behavior logic to investigate factors influencing consumer attitudes and continuance intention to adopt LazzieChat, considering the moderating effect of online shopping self-efficacy in this process.

In other words, this study aims to address the research gap by providing empirical data on consumers' continuance intention to adopt ChatGPT-driven e-commerce AI chatbots (i.e., LazzieChat). By exploring the role of consumption values and the moderating effect of online shopping self-efficacy, the study contributes to a better understanding of consumer value proposition and decision-making processes regarding the adoption of advanced ChatGPT-driven chatbots. The findings of this study are of practical significance to e-commerce enterprises and chatbot developers. By understanding the factors that affect consumers 'value proposition, attitudes and intentions towards ChatGPT-driven chatbots, companies can customize their consumer service strategies and implementation of chatbots to better meet consumers' needs and preferences. Additionally, the study's theoretical contributions can inform future research in the field of consumer behavior and the adoption of AI-powered technologies in e-commerce and beyond.

This paper addresses three key research questions: (1) Do consumption values influence attitudes towards LazzieChat? (2) Do attitudes mediate the relationship between consumption values and the intention to adopt LazzieChat? (3) Does online shopping self-efficacy moderate the link between attitudes and the intention to adopt LazzieChat?

The paper proceeds with a literature review, conceptual model, and hypothesis development, followed by methods and results, and concludes with discussions on contributions, implications, limitations, and future research directions.

2. Literature Review

2.1. Chatbot and ChatGPT-driven Chatbot

Previous studies have proposed various definitions of chatbots. For example, they are described as software agents that promote automatic dialogue through natural language processing" (Brandtzaeg and Folstad, 2017), artificial structures of human interaction using natural language as input and output" (Brennan, 2006), and "dialogue entities or computer programs driven by artificial intelligence respond to users' queries through text-based dialogue" (Shawar and Atwell, 2007). In this study, the chatbot was defined as a tool that delivers immediate responses to requests via text-based interactions, transforming business-consumer communication and interaction without temporal or spatial restrictions and eliminating the necessity for human involvement (Gatzioufa and Saprikis, 2022).

Meanwhile, ChatGPT, a generation pre-training converter chatbot application developed by OpenAI, is good at generating natural language text to solve complex problems that require advanced analysis (Natural et al., 2023). It generates human-like responses, mimicking statistical language patterns found online, effectively addressing various user queries (Gilson et al. 2022; Fernandez, 2023; Haleem et al., 2023; Lund and Wang, 2023). Unlike traditional chatbots that rely on predefined rules limited to specific domains, ChatGPT uses machine learning to generate responses from a large amount of text data (Panda and Kaur, 2023). This allows addressing broader queries, including novel ones traditional chatbots struggle with, by continuously learning from new data without manual rule updates.

Chatbots are widely integrated into business strategies and consumer service, offering 24/7 natural language capabilities mimicking human conversation (Zumstein and Hundertmark, 2018). Effective chatbot integration provides high-quality, fast service (Cordero et al., 2022). In e-commerce, chatbots leverage data to address consumer inquiries, enhancing the shopping experience with convenient, personalized interactions to build consumer relationships and reduce uncertainty (Cui et al., 2017; Chen et al., 2021). Haleem et al. (2023) highlight ChatGPT's power in evaluating retail strategies, consumer bases, and product attributes to identify success reasons and recommend enhancements. Kumar et al. (2023) deem ChatGPT indispensable for retailers, delivering seamless consumer experiences through personalized recommendations, efficient inquiry handling, and round-the-clock assistance. Hence, integrating ChatGPT-driven chatbots into e-commerce benefits businesses and consumers (Kshetri, 2024).

2.2 Value–Attitude–Behavior Model

Gatzioufa and Saprikis (2022) conducted a comprehensive literature review and found that research on consumer service chatbots is a highly relevant and popular topic at present, and key factors affecting the intention of adopting chatbots include consumers 'performance expectations and attitudes. Pasupuleti and Thiyyagura (2024) also found that a positive attitude towards ChatGPT is more likely to continue to adopt it and recommend it to others.

Hence, attitudes may directly affect factor consumer's continuance intentions to adopt ChatGPT-driven e-commerce chatbot. Besides, Gatzioufa and Saprikis (2022) also emphasize the importance of further exploration to identify additional factors and dimensions affecting chatbot adoption in the e-commerce domain. To address this call in the literature, this paper explores the logical relationship among consumption values, attitudes and continuance intentions to adopt LazzieChat.

Furthermore, existing literature has explored the interplay between values, attitudes, and behavioral intentions in online or information technology contexts through various perspectives (Hasan, 2022). For instance, Jayawardhena (2004) highlighted that consumers' values, encompassing traits like self-direction, hedonism, and achievement, exert a positive influence on their attitudes toward e-shopping. These attitudes, in turn, shape their intentions to adopt e-commerce, with attitudes serving as intermediaries between values and behavior. Kang (2014) demonstrated that monetary, convenience, emotional, and social values indirectly impact consumers' continued adoption of augmented reality and motion capture apparel in e-commerce through the mediating role of attitudes, particularly utilitarian performance expectations. Xu et al. (2020) found that consumers' value perceptions regarding technology usage in restaurants are influenced by attitudes, encompassing aspects like pleasure and utilitarian expectations, which subsequently drive consumers to adopt onsite restaurant interactive self-service technology. Additionally, according to Dwivedi et al. (2019), attitudes play a crucial role in the acceptance and utilization of innovative technologies and applications. Yan et al. (2021) emphasized that attitudes are critical antecedents in the continued adoption of online technologies.

Value-Attitude-Behavior (VAB) model is a sequential progression from values to attitudes to behavior is a robust framework in research and has gained widespread acceptance as a framework for assessing measurement and structural models aimed at explaining or predicting behavioral intentions, with attitudes serving as a mediating factor that connects individual values and behaviors (Homer and Kahle, 1988; Johnston et al., 2023). Therefore, employing the VAB model logically not only enhances our comprehension and exploration of the fundamental driving factors and characteristics underlying consumers' continued adoption of LazzieChat but also directs the attention of scholars and practitioners toward the key role of attitudes as a crucial bridge facilitating the continued adoption of ChatGPT-driven chatbots.

2.3 Theory of Consumption Value

Both marketing and information systems researchers have long held a keen interest in the concept of value (Karjaluoto et al. 2021). When it comes to accepting products and services, consumption value as a key determinant of consumer decision-making has been widely studied (Karjaluoto et al. 2021; Sheth et al., 1991; Turel et al. 2010). Previous studies have also effectively applied the theory of consumer value to carefully study the

continuous behavior of users in the network environment, including mobile technology (Yang and Lin, 2017) and augmented reality applications (Wang et al. 2022), and mobile banking services (Karjaluoto et al. 2021). Hence, the rationale behind consumer adoption service decision-making can be explained via the theory of consumer value (Sheth et al., 1991). This theory offers a robust framework for predicting, elucidating, or characterizing consumer-level choices regarding product or service adoption by delineating five distinct consumer values: functional, social, emotional, epistemic, and conditional (Sheth et al., 1991).

Past literature research demonstrated the effectiveness of the theory of consumption value in both conceptualizing and investigating the adoption of digital applications and services. For example, Turel et al. (2010) contend that the theory of consumption value can explain why users opt to adopt digital products and services after evaluating multiple facets of value. Kaur et al. (2018) disclosed that sustained usage of online social media brand communities is influenced, in part, by social and emotional values. Furthermore, Kaur et al. (2021) identified epistemic value as the primary driving factor behind consumer adoption of food delivery apps, followed by conditional, functional, and social value. Omigie et al. (2017) pointed out that consumers' continued adoption of M-PESA mobile financial services is positively affected by consumption values like aesthetics, convenience, monetary aspects, epistemic factors, and self-gratification. Therefore, in the online environment, we should reiterate the theory of consumption value relevance in predicting specific value propositions, which can help us to understand and guide consumers to continue to adopt ChatGPT-driven chatbots (i.e., LazzieChat) in e-commerce. Besides, Kaur et al. (2018) have observed that conditional value predominantly addresses consumer decision-making within a marketing context and should be excluded from consideration when it comes to decisions related to the adoption of information technology. Consequently, this paper concentrates on functional value, social value, emotional value, and epistemic value.

3. Research Hypotheses

3.1 Functional Value

Functional value is related to consumers' perceived benefits from the actual and physical utility of a product or service, including its characteristics, attributes or practicality (Sheth et al. 1991). The functional value of any product or service can be gauged by the utilitarian advantages consumers gain from its tangible performance (Suki, 2013). Consumers' choices to adopt a product or service is affected by its important functional characteristics and the value generated by its practical or physical attributes. In the context of mobile applications, consumers' greater perceived functional value is related to the higher possibility of forming a good attitude and receiving service (Goh et al. 2014). Early studies have determined the functional value of online retail options, including efficiency, economic value, time-saving, task completion and successful results (Andrews, 2007).

There are several studies emphasize the key role of the functional characteristics of chatbots in shaping consumers' intentions and attitudes. For example, Cicco et al. (2020) emphasize that adopting chatbots enables retailers to meet the needs of young consumers anytime and anywhere. Chatbots' functionality is mainly reflected in the interaction between consumers and chatbots, thus affecting their attitudes towards retail brands (Zarouali et al. 2018) and Brand preferences (Trivedi, 2019). Therefore, the functional value of chatbots is related to the services and functions they provide, such as answering users' queries, providing high-quality related information, and showing high responsiveness, which minimizes the energy and time spent by users for a specific purpose (Gilson et al. 2022; Fernandez, 2023). As the latest version of chatbot, the ChatGPT-driven e-commerce chatbot has the potential to offer more functional value (e.g., stronger professional knowledge and awareness of context) than its predecessors, potentially leading to more positive user attitudes toward its adoption. In other words, the functional advantage of ChatGPT is that it can understand the background of the dialogue to generate more realistic, coherent and personalized responses. Besides, ChatGPT provides many functional advantages, including providing detailed product descriptions, promoting virtual try-on experiences and the ability to seamlessly integrate with augmented or virtual reality technologies. These capabilities empower consumers with up-to-date knowledge and high-quality, valuable functionalities (Kumar et al. 2023).

In the field of e-commerce, LazzieChat is the latest ChatGPT-driven chat robot integrated into the Lazada platform. LazzieChat is good at understanding their consumers' queries quickly and responding naturally and intuitively. In addition, it can recommend related products or themes according to consumers 'interests. Consumer can easily access product descriptions in the chat interface and directly navigate to Lazada's products. This simplified and efficient process ensures that consumers are well-informed and can make a purchase quickly, conveniently and confidently. In other words, functional value plays an important role in shaping consumers 'attitudes towards LazzieChat. The literature emphasizes the importance of functional characteristics, such as efficiency, time saving and successful results, which influence the adoption and attitudes of consumers. Therefore, this study posits that:

- H1. Functional value is positively related to the consumer's attitudes towards LazzieChat.

3.2 Social Value

Social value was described as the perceived benefit derived from the connection between an option and one or more specific social groups by Sheth et al. (1991), which is attained through the use of observable products or services and is influenced by the social influence of reference groups (Sheth et al., 1991). Consumer behavior is often driven by the desire for social status (Holbrook, 1999), which can also be a primary motivator for the adoption of products and services (Rogers, 1995). In the realm of digital technology, social value encompasses the emotional gratification, boost in self-esteem, and sense of belonging that users experience through the use of applications (Jordan, 2008). Wu et al. (2018) found that attitudes towards

hedonism and utilitarianism can regulate the relationship between social value and purchase intention in the online social shopping environment. Kaur et al. (2021) and Omigie et al. (2017) reported that social values have a positive impact on users' intention to adopt digital technology services.

On the other hand, Sweeney and Soutar (2001) found that social value encompasses social acceptance, interpersonal relationships, and the social image associated with the service being accepted by consumers. When consumers perceive digital technology services as a means to enhance their self-image, express their personality, or position themselves within a specific social status, their perception of social value drives them to exhibit a strong attitude and intention to adopt this service (Chaouali et al., 2023). Therefore, in this study, consumer social value can be perceived in the context of friends, colleagues, or family members using the ChatGPT-driven chatbot service (i.e., LazzieChat). This service offers personalized marketing information and advice based on consumers' previous behaviors (such as online comments, reviews, and social media posts), needs, preferences, and consumption patterns, thereby enhancing consumers' emotional satisfaction and their perception of social status (Carvalho and Ivanov, 2023). LazzieChat provides greater social value (e.g., in terms of image and social relationships) compared to traditional chatbot services, thus resulting in consumers' positive attitudes toward the adoption of LazzieChat in consumer service. Therefore, this study posits that:

- H2. Social value is positively related to consumers' attitudes toward LazzieChat.

3.3 Emotional Value

Emotional value can be defined as the perceived benefit that consumers derive from the ability to evoke sensations, memories, emotional states, and the impact of emotions (Sheth et al., 1991). The past literature emphasizes the importance of emotional value in influencing consumers 'attitudes and behaviors towards digital technology applications (including artificial intelligence chatbots). In other words, emotional value pertains to the positive and enjoyable feelings that arise during the use of digital technology applications (Berraies et al., 2017). Emotional value has the capacity to trigger consumers' emotional states, consequently influencing their inclinations or behaviour (Yang et al., 2015). Peng et al. (2014) reported that the presence of emotional value within the domain of mobile digital technology applications and its effect on consumers' attitudes toward brands. Karjaluoto et al. (2021) provided evidence that emotional value stands as a key variable driving force behind consumers' intentions to adopt new digital technology applications. Previous studies have also indicated that AI chatbots can be involved in simple conversations and effectively offer solutions to consumers' queries, influencing consumers' emotions or attitudes within the e-commerce context (Kasilingam, 2020). In other words, the ability of AI chatbots to provide accurate advice instils a sense of being understood by consumers, making them feel that the AI chatbot genuinely cares about their emotions (Chen et al., 2023). LazzieChat, as the newest ChatGPT-driven chatbot integration, aims to elevate consumer service by delivering superior service and emotional experiences compared to previous AI chatbots. LazzieChat can offer high-quality consumer service and effective product

recommendations via human-computer interaction to create consumers' positive and enjoyable experiences feelings, consequently shaping positive consumers' attitudes towards LazzieChat. Therefore, this study posits that:

- H3. Emotional value is positively related to consumer's attitudes toward LazzieChat.

3.4 Epistemic Value

Epistemic value holds significant sway over the inclination to adopt novel mobile technology services (Karjaluoto et al., 2021). Sheth et al. (1991) offer a definition of epistemic value as the perceived benefit gained from an alternative's ability to spark curiosity, offer novelty, and/or fulfil a thirst for knowledge or unique consumption. Previous literature has emphasized the importance of epistemic value in influencing consumers 'attitudes and intentions. For example, epistemic value pertains to the perceived worth derived from a service's capacity to pique curiosity and provide new insights, gratifying consumers' hunger for fresh knowledge and experiences through the adoption of innovative services (Omigie et al., 2017). For many consumers, the perception of epistemic value carries weight and purpose, as it shapes their attitudes and intentions (Wu and Chang, 2016). In other words, epistemic value promotes consumer service attitudes and behavior intentions, and consumers' curiosity about new things and technology knowledge or the exploration of novelty promotes this attitude and intention. Therefore, epistemic value plays a key role in influencing consumers' decisions to adopt or abandon services (Omigie et al., 2017). LazzieChat is a ChatGPT-driven e-commerce AI chatbot, which can help consumers understand product details, navigate the purchase process and solve problems through professional and personalized guidance and responses. This can stimulate consumers' curiosity and desire for novelty to impact their attitudes toward LazzieChat. Hence, this study posits that:

- H4. Epistemic value is positively related to consumer's attitudes toward LazzieChat.

3.5 Attitude and Continuance Intentions to Adopt LazzieChat

Attitude has been proven to be a decisive factor in predicting individuals' intentions to accept various products and services (Bananuka et al. 2019). Users usually evaluate the adoption of a particular technology through their attitude towards using a product or service (Athiyaman, 2002). For example, past studies have reported consumers' attitudes have a positive influence on their continuance intentions toward adopt mobile commerce (Khoi et al., 2018), users' intentions to continue using Uber services (Min et al., 2019), and intentions to continue adopting e-learning (Rahi et al., 2021). Hence, Ashraf et al. (2019) suggested that optimistic and pessimistic attitudes directed at any product or service can establish a framework concerning technological innovations.

On the other hand, attitude is defined as a psychological tendency to express an evaluation of a specific entity or object by accepting or rejecting it to a certain extent ((Ajzen, 1991; Eagly and Chaiken, 1993). Previous studies assume that there is a direct relationship between attitude and continuance intentions toward adopt technology context (Khoi et al. 2018). For example,

Kaakeh et al. (2019) reported that the tendency towards a positive attitude has a positive impact on the intention of users to continue to adopt Islamic banking business. Foroughi et al. (2019) suggested that consumers' attitudes positively influence their intentions to continue adopting mobile banking. Besides, the positive relationship between attitude and intentions of continuing to adopt has been firmly established in the adoption technology context (Nabavi et al., 2016), including the adoption of mobile application services technology (Khoi et al. 2018) and the application of chatbots in e-commerce (Karjaluoto, 2021; Tandem et al. 2023; Yoon and Yu, 2022). Therefore, it is reasonable to believe that this logical relationship will be extended in the context of LazzieChat, which is also supported by the logic of the value-attitude-behavior model. In other words, the more positive consumers are toward LazzieChat, the more likely they are to continue adopting LazzieChat. Hence, this study posits that:

- H5. Consumer's attitudes toward LazzieChat is positively related to their continuance intention to adopt LazzieChat.

3.6 Attitude as Mediator

Attitude, as defined by Ajzen and Fishbein (1980), pertains to an individual's preferences or aversions toward an object and carries positive implications. Attitude essentially represents a person's evaluative judgment (Ajzen and Fishbein, 1977) or an evaluative evaluation (Bagozzi and Yi. 1999) of the object under consideration. Attitude plays a significant influence in shaping a person's choices and intentions (Dabholkar, 1994). Previous studies have also reported the mediating role of attitudes in the relationship between consumers' perceived value and their intention towards adopting and using technology. For example, Al-Hujran et al. (2015) discovered that attitudes towards the use of e-government services play an active intermediary role in the relationship between perceived public value and the intention to continue to use e-government services. Hasan (2022) reported that e-attitudes mediate the relationship between consumers' perceived value and their intention to continue using Uber ride-sharing services. Kaur et al. (2023) reported that attitudes play a mediator role in the context of job-seekers' intentions towards adopting e-recruitment. Besides, the value-Attitude-Behavior model emphasizes a sequential process logically while attitudes play a key moderator role in the relationship between personal values and behaviors, which is widely recognized as a useful framework for explaining or predicting behavior intentions ((Homer and Kahle, 1988). Based on the above theoretical foundations and empirical evidence, attitude may play a moderator role in the relationship between consumers' consumption values and continuance intention to adopt LazzieChat. Hence, this study posits that:

- H6a-e. Consumer's attitudes toward LazzieChat mediate the relationship between consumer's consumption values: functional value(H6a), social value(H6b), emotional value(H6c), epistemic value(H6d) and consumers' continuance intention(H6e) to adopt LazzieChat.

3.7 The Moderating Role of Online Shopping Self-Efficacy

Self-efficacy is an individual personality trait that exhibits variations among people (Compeau and Higgins, 1995). Some individuals possess a high degree of self-efficacy, empowering them to exercise control over and master task-related behaviors (Liu et al., 2017). The confidence individuals have in their internet-related skills significantly influences their intentions to engage in e-commerce activities (Eastin, 2002). Online shopping self-efficacy represents consumers' self-assessment of their ability to successfully carry out e-commerce activities and services (Dash & Saji, 2008). Hsu and Chiu (2004) argued that the potential importance of online shopping self-efficacy lies in its capacity to explain consumer intentions within electronic services.

Prior research has demonstrated that online shopping self-efficacy is a major determining factor and plays a moderating role in online shopping-related behavior. For instance, Dash and Saji (2008) investigated consumers' purchase intentions toward online shopping, employing online shopping self-efficacy as a moderator. The results highlighted the significant role played by online shopping self-efficacy, indicating its association with individuals' perception of their ability to plan and execute e-commerce actions. Zha et al. (2013) found that high levels of online shopping self-efficacy strongly moderated consumers' perceived decision quality and satisfaction with online shopping. Consequently, individuals with strong self-efficacy in the realm of online shopping demonstrate the confidence needed to successfully navigate their digital experiences (Yi and Gong, 2008). Besides, Yi and Gong (2008) also suggested advocating for further exploration of the moderating effects of online shopping self-efficacy in different contexts. Therefore, exploring the mediator role of online shopping self-efficacy may help clarify consumers' intentions toward continuing to adopt LazzieChat. In other words, e-commerce platforms that provide consumer service chatbots lead to a higher level of perceived control and stronger behabior intentions, and online shopping self-efficacy plays a mediator role in enhancing the influence of perceived control on online shopping behavior intention (Li et al., 2018). Therefore, there are reasons to connect under the background of this study, when consumers have a positive attitude toward LazzieChat, people with higher online shopping self-efficacy are more likely to continue to adopt LazzieChat than individuals with lower online shopping self-efficacy levels. Consumers with high self-efficacy in online shopping show greater confidence in their ability to continue using LazzieChat. Hence, this study posits that:

- H7. Consumer's online shopping self-efficacy moderates the relationship between consumer's attitudes toward LazzieChat and consumer's continuance intention to adopt LazzieChat. In high online shopping self-efficacy, the relationship is stronger.

Figure 1 illustrates the conceptual framework designed to investigate the connection between four consumption values (the independent variable) and the continuance intention to adopt LazzieChat (the dependent variable). This relationship is mediated by attitudes toward LazzieChat and moderated by online shopping self-efficacy.

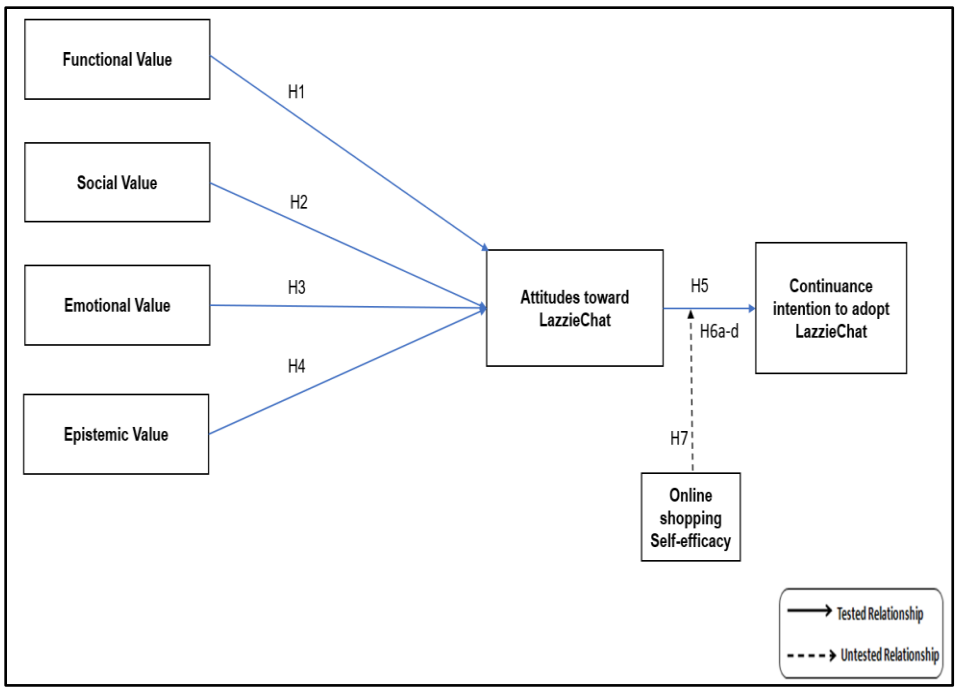

Figure1: A Conceptual Model

4. Research Method and Data Analysis

4.1 Instrument Design

Based on an extensive review of relevant literature and considering the specific context of ChatGPT-driven chatbot usage, particularly LazzieChat, a meticulously structured questionnaire was crafted. This questionnaire was developed by adapting established measurement scale items. It comprised 25 measurement items and organized into seven distinct constructs (see Table 1 for items in annexure). In the questionnaire, a uniform five-point Likert-type scale was employed for all constructs. Respondents were asked to express their level of agreement on a scale ranging from 1 to 5, where 1 indicated strong disagreement and 5 signified strong agreement. To enhance clarity and organization, the questionnaire was divided into three distinct sections. Initially, participants were required to respond to a screening question to determine their awareness and usage of LazzieChat. After that, participants were asked to provide demographic information. Finally, the main section of the questionnaire consisted of items designed to measure consumption values, attitudes, online shopping self-efficacy, and continuance intention.

4.2 Sample and Data Collection

Based on our research object, the responder must use LazzieChat. The purposive sampling technique can help researchers judge and choose respondents based on the appropriate characteristics (Zikmund et al. 2012). Hence, purposive sampling method was employed to recruit Lazada consumers from Singapore as our study participants. Several key reasons informed our choice of Singapore as the target country. Firstly, Lazada introduced LazzieChat, an e-commerce consumer service chatbot integrated with ChatGPT technology, to the Singaporean market in May 2023. Consequently, consumers in Singapore had early access to ChatGPT-powered chatbots for e-commerce consumer service compared to consumers in other regions. Secondly, the Singaporean government actively promotes the widespread use of ChatGPT, including incorporating AI tools into educational curricula and allowing government officers to utilize ChatGPT for document preparation. Lastly, Singapore boasts a thriving e-commerce market, characterized by a high internet penetration rate of 98% and over 3 million e-commerce users, representing more than 58% of residents making online purchases. This attractive market environment has drawn numerous major e-commerce companies, such as Alibaba, Amazon, eBay, Lazada, and Shopee, to establish their headquarters or regional offices in the country. Consequently, the likelihood of successfully collecting data in Singapore was anticipated to be higher than in other regions.

This paper's sample data was collected from Singaporean residents using a structured online questionnaire administered via Wenjuanxing, which is a widely recognized online survey platform known for its efficiency and cost-effectiveness in recruiting a large number of participants (Yang and Li, 2021). To enhance the response rate, we provided random monetary incentives and E-vouchers. We administered the survey between July and August 2023 while we enlisted the assistance of four volunteer students who acted as interviewers for data collection. They employed an interception technique at Merlion Park in Singapore, approaching individuals who appeared to have leisure time, minimizing any potential disruptions. To ensure that respondents met our criteria for participation, they were required to meet two screening conditions: i) be 18 years of age or older, and ii) have previous experience with LazzieChat. To identify individuals who had adopted LazzieChat, interviewers posed three questions: “Have you used Lazada for online shopping?”, “Could you please tell us the name of the chatbot in Lazada?”, and “Have you interacted with LazzieChat?”. Additionally, participants were requested to engage with LazzieChat for at least 3 minutes to ensure their familiarity with the technology, before responding to the survey. Figure 2 illustrates the LazzieChat within the Lazada mobile app with an example of a response from LazzieChat. Subsequently, interviewers shared QR codes or web links to an English online questionnaire and guided participants in completing the survey. Following a five-week data collection period, the initial sample comprised 346 responses. Among these, 41 responses did not meet the screening criteria or exhibited

identical responses across various variables and were subsequently excluded. This left us with 305 valid responses.

Among the 305 participants, men accounted for a large proportion, accounting for 62.30%, while women accounted for 37.70. This means that male respondents enjoy LazzieChat more actively than females. The sample includes 70.40% of respondents aged between 18 to 35 years old, 41.00% of the respondents have bachelor's degrees, and 26.20% of the respondents have master's degrees. This led to the conclusion that young people with higher education are more likely to use LazzieChat. In addition, 40.70% of respondents in the sample earned between $ 2,501 to $ 5,000 a month, and 36.10% earned between $ 5,001 to $ 7,500 a month. At the same time, 40% of respondents use LazzieChat for 3 to 6 hours a week. The sample profile of the respondents is exhibited in Table 2 (reference in annexure).

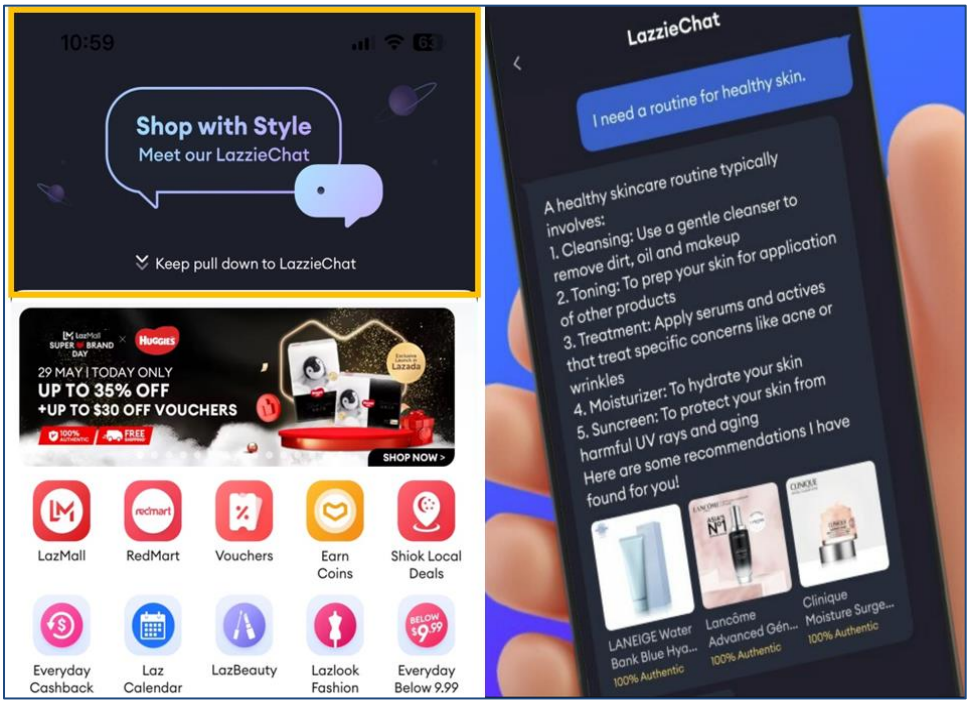

Figure 2: Example of LazzieChat Communication

4.3. Data Analysis

This study used partial least squares (PLS) modeling using the SmartPLS 4 (Ringle et al., 2022) as the statistical tool to examine the measurement and structural model as it does not require normality assumption and survey research is normally not distributed (Chin et al.,

2003; Hair et al., 2013). In other words, the basic principle of selecting PLS-SEM is based on the non-normal distribution of collected data, among which PLS-SEM is considered to be more suitable for analyzing non-normal distribution data (Hair et al., 2017). Inspired by the above research, the author uses PLS-SEM technology to analyze the research results. Meanwhile, the component-based method was adopted by the bootstrapping technology to strictly evaluate all the proposed assumptions through a large number of iterations (n = 5,000). Besides, since data was collected from a single source, we first tested the common method bias according to the recommendations of Kock and Lynn (2012) and Kock (2015). In this method, all the variables will be regressed according to a common variable. If the VIF value is less than or equal to 3.3, there is no deviation in single-source data. The analysis result (see Table 3) shows all variable VIF values less than 3.3 thus single source bias is not a serious issue with our data.

Table 3: Full Collinearity Testing

FUV	SOV	EMV	EPV	ATL	OSS
1.265	1.232	1.398	1.362	1.307	1.291

Note (s): FUV, Functional Value; SOV, Social Value; EMV, Emotional Value; EPV, Epistemic Value; ATL, Attitudes toward LazzieChat; OSS, Online shopping Self-efficacy

4.4 Measurement Model

We use various indicators to evaluate the model using various metrics, which cover loadings, composite reliability (CR), and average variance extracted (AVE). To be specific, factor loadings value > 0.5 means are indicative of good measurement item consistency (Chin, 1998). Nunnally and Bernstein (1994) studied that the value of composite reliability (CR) between 0.7 and 0.9 is considered satisfactory. Besides, Cronbach's alpha value is usually regarded to be reliable data at values greater than 0.7 (Netemeyer et al., 2003). Fornell and Larcker (1981) suggested that the Average Variance Extracted (AVE) should exceed the minimum cutoff value of 0.5 to obtain sufficient convergence effectiveness. Table 4 shows this study's analysis result of the construct validity of the model. The factor loading values range from 0.868 to 0.668, higher than 0.5. Cronbach's alpha values range from 0.812 to 0.894, higher than 0.7. The AVE values range from 0.585 to 0.631, higher than 0.5. The CR values from 0.813 to 0.896 which are all above 0.7.

Table 4: Loadings, Reliability and Validity

Constructs	Items	Mean (SD)	Outer VIF	Factor Loadings	Cronbach's alpha	CR	AVE
Functional Value					0.849	0.853	0.585
	FUV1	3.357 (1.104)	1.934	0.809			
	FUV2	3.311 (1.127)	1.943	0.779			
	FUV3	3.361 (1.154)	1.861	0.794			
	FUV4	3.407 (1.162)	1.923	0.668			
Social Value					0.812	0.813	0.591
	SOV1	3.289 (1.152)	1.726	0.782			
	SOV2	3.262 (1.100)	1.837	0.741			
	SOV3	3.321 (1.149)	1.753	0.782			
Emotional Value					0.862	0.865	0.611
	EMV1	3.426 (1.135)	1.862	0.705			
	EMV2	3.485 (1.134)	2.028	0.815			
	EMV3	3.528 (1.173)	2.118	0.809			
	EMV4	3.548 (1.150)	2.173	0.793			
Epistemic Value					0.836	0.840	0.631
	EPV1	3.459 (1.142)	1.988	0.737			
	EPV2	3.407 (1.139)	1.913	0.782			
	EPV3	3.430 (1.169)	1.946	0.858			
Attitudes Toward LazzieChat					0.825	0.825	0.611
	ATL1	3.328 (1.238)	1.757	0.801			
	ATL2	3.308 (1.186)	1.932	0.750			
	ATL3	3.367 (1.194)	1.934	0.791			
Online Shopping Self-efficacy					0.894	0.896	0.627
	OSS1	3.387 (1.221)	2.189	0.865			
	OSS2	3.426	2.111	0.816			

		(1.188)					
	OSS3	3.433 (1.205)	2.299	0.720			
	OSS4	3.364 (1.191)	2.333	0.740			
	OSS5	3.459 (1.165)	2.241	0.808			
Continuance Intention to Adopt LazzieChat					0.834	0.839	0.627
	CUI1	3.256 (1.165)	1.985	0.749			
	CUI2	3.331 (1.214)	1.859	0.868			
	CUI3	3.348 (1.227)	1.963	0.753			

Note(s): SD: Standard deviation; CR: Composite reliability; AVE: Average variance extracted; VIF: Variance inflation factor

The evaluation of discriminant validity used Fornell-Larcker criterion and The Heterotrait-Monotrait ratio of correlations (HTMT). Fornell-Larcker criterion compares the correlation between the square root of AVE and the latent variables (Fornell and Larcker, 1981). Table 5 reports the square root of the AVE exceeded the correlations between variables, thus providing support for discriminant validity (Hair et al., 2013). The HTMT criterion suggested that the HTMT values should be ≤ 0.85 (Henseler et al., 2015; Franke and Sarstedt, 2019). As shown in Table 6, the values of HTMT were all lower than the stricter criterion of ≤ 0.85 as such we can conclude that the respondents understood that seven constructs are distinct (Henseler et al., 2015).

Table 5: Fornell-Larcker criteria

	ATL	**CUI**	**EMV**	**EPV**	**FUV**	**OSS**	**SOV**
ATL	**0.781**						
CUI	0.553	**0.792**					
EMV	0.603	0.521	**0.782**				
EPV	0.526	0.515	0.549	**0.794**			
FUV	0.534	0.478	0.427	0.371	**0.765**		
OSS	0.552	0.574	0.503	0.452	0.418	**0.792**	
SOV	0.483	0.541	0.372	0.392	0.424	0.449	**0.768**

Note (s): ATL, Attitudes toward LazzieChat; CUI, Continuance intention to adopt LazzieChat; EMV, Emotional Value; EPV, Epistemic Value; FUV, Functional Value; OSS, Online shopping Self-efficacy; SOV, Social Value

Table 6: Discriminant Validity (HTMT Criterion)

	ATL	CUI	EMV	EPV	FUV	OSS	SOV
ATL	-						
CUI	0.552	-					
EMV	0.602	0.521	-				
EPV	0.525	0.520	0.550	-			
FUV	0.533	0.481	0.430	0.370	-		
OSS	0.552	0.571	0.505	0.452	0.420	-	
SOV	0.482	0.543	0.371	0.394	0.423	0.447	-

Note (s): ATL, Attitudes toward LazzieChat; CUI, Continuance intention to adopt LazzieChat; EMV, Emotional Value; EPV, Epistemic Value; FUV, Functional Value; OSS, Online shopping Self-efficacy; SOV, Social Value

4.5 Structural Model

Streukens and Leoi-Weeds (2016) reported that there was a lack of guidelines to determine the minimum required bootstrap samples, and there was a significant difference in the number of bootstrap samples used in PLS-SEM applications. Wilcox (2022) suggests that a minimum of 2,000 bootstrap samples might be necessary for robust analysis. Hence, we employed 5,000 bootstrap resamples to test the hypotheses in this study (refer to Tables 7, 8, 9, and Figure 3).

Path analysis used to intensity and direction of the relationship between variables is studied. The significance of the path coefficient is tested to verify the reliability of the hypothesis correlation. The analysis process followed the strategy proposed by Hair et al. (2013). According to the level of significance, the statistical significance of the correlation between variables is evaluated. Table 6 shows the results, indicating that functional value (β=0.248, p=0.000), social value (β=0.184, p=0.009), emotional value (β=0.329, p=0.000), and epistemic value (β=0.181, p=0.018) all had significant effects on consumers' attitudes toward LazzieChat. Furthermore, attitudes toward LazzieChat (β=0.306, p=0.000) significantly influenced consumers' continuance intentions to adopt LazzieChat. As a result, hypotheses H1, H2, H3, H4, and H5 were all supported.

Table 7: Hypotheses Testing Results

Hypothesis	Path Coefficient	$f2$	t-value	p-values	Results
H1: FUV → ATL	0.248	0.092	3.536	0.000***	Supported
H2: SOV → ATL	0.184	0.052	2.617	0.009**	Supported
H3: EMV → ATL	0.329	0.141	4.130	0.000***	Supported
H4: EPV → ATL	0.181	0.044	2.368	0.018*	Supported
H5: ATA → CUI	0.306	0.114	4.055	0.000***	Supported

Note (s): *p<0.05; **p<0.01; ***p<0.001; ns=nonsignificant at .05 level

FUV, Functional Value; SOV, Social Value; EMV, Emotional Value; EPV, Epistemic Value; ATL, Attitudes toward LazzieChat; CUI, Continuance intention to adopt LazzieChat

The adjusted coefficient of determination value (R2) represents the proportion of variance accounted for in a given model. The result shows attitudes towards LazzieChat (R2 =0.508) and continuance intention to adopt LazzieChat (R2 =0.437) indicating that the structural model represents a good value for predictive accuracy in behavioral research (Hair et al., 2017). In addition to assessing the magnitude of the R^2 value as a criterion for predictive accuracy, researchers also frequently examine Stone-Geisser's Q^2 value (Stone, 1974; Geisser, 1974) as a criterion for predicting correlation. By using the blindfolding procedure, the results show that the Q^2 values for attitudes towards LazzieChat (Q^2 =0.373) and continuance intention to adopt LazzieChat (Q^2 =0.344) are greater than zero which indicates the structural model's predictive relevance.

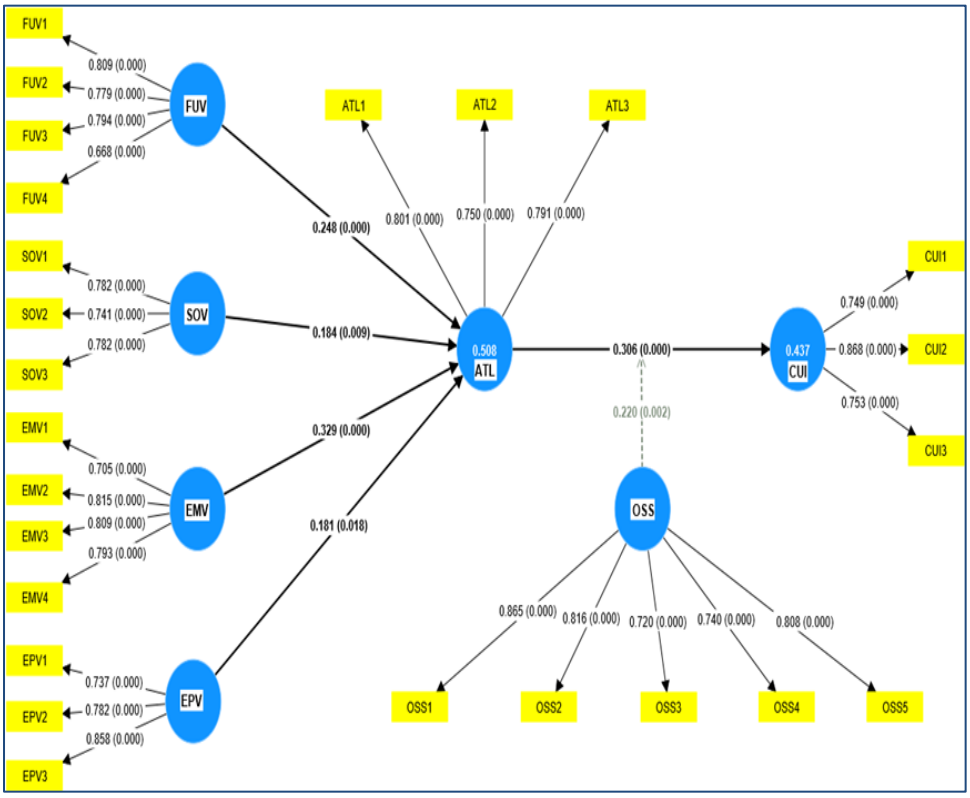

Figure 3. Structural Model

4.6 Assessment of Mediating Effects

Table 8 show the hypotheses testing of mediating effects results which shows consumers' attitudes toward LazzieChat as playing a significant mediating role in affecting the

relationship among functional value (β=0.076, p=0.015), social value (β=0.056 p=0.035), emotional value (β=0.101, p=0.003) and epistemic value (β=0.055, p=0.046) on consumers' continuance intention to adopt LazzieChat. Thus, all hypotheses of H6 are supported based on H6a, H6b, H6c and H6d showed significant mediating effects. It confirmed that full mediation exists in the data set (Hair et al., 2013).

Table 8: Hypotheses Testing of Mediating Effects Results

Hypothesis	Path coefficient	t-value	p values	Results
H6a: FUV →ATL →CUI	0.076	2.436	0.015*	Significant
H6b: SOV→ATL →CUI	0.056	2.106	0.035*	Significant
H6c: EMV→ ATL→CUI	0.101	2.938	0.003**	Significant
H6d: EPV →ATL →CUI	0.055	1.993	0.046*	Significant

Note (s): *p<0.05; **p<0.01; ***p<0.001; ns=nonsignificant at .05 level
FUV, Functional Value; SOV, Social Value; EMV, Emotional Value; EPV, Epistemic Value;
ATL, Attitude towards LazzieChat; CUI, Continuance intention to adopt LazzieChat

4.7 Assessment of Moderation Effect

Table 9 shows the hypotheses testing of moderating effects results, in which the findings indicate that consumers' online shopping self-efficacy (β=0.220, t value=3.142, p value=0.002<0.05) has a significant moderating effect on consumers' attitudes toward LazzieChat and consumers' continuance intention to adopt LazzieChat. It confirmed that full moderation exists in the data set (Hair et al., 2013).

Table 9: Hypotheses Testing of Moderating Effects Results

Hypothesis	Path coefficient	t-value	p-values	Results
H7: OSS x ATL →CUI	0.220	3.142	0.002**	Significant

Note (s): *p<0.05; **p<0.01; ***p<0.001; ns=nonsignificant at .05 level
OSS, Online shopping Self-efficacy; ATL, Attitudes toward LazzieChat;
CUI, Continuance intention to adopt LazzieChat

Furthermore, SmartPLS 4 provides simple slope plots in the results report to explain the moderation effect strength relationship (Hair et al., 2017). Figure 4 shows that for individuals with high Online shopping Self-efficacy (i.e., +1 standard deviation above the mean; green line), there is a stronger relationship (i.e., steeper line) between ATL and CUI. For individuals with low Online shopping Self-efficacy (i.e., -1 standard deviation below the mean; red line), the slope is flatter. Thus, H7 was supported. This means that compared to consumers with low online shopping self-efficacy, consumers with high online shopping self-efficacy will more strongly transform their attitudes toward LazzieChat to their continuance intention to adopt LazzieChat.

Figure 4. Simple Slope Plot

5. Discussion and Conclusion

Although more and more ChatGPT-driven chatbots are used in the field of e-commerce, little is known about the factors that positively affect consumers' attitude towards this technology and their intention to continue to adopt it. Previous literature shows that the role of consumers' perceived value in the context of e-commerce chatbots has not been fully explored, nor has the moderating role in the adoption of the chatbot process (Chen et al. 2023; Hu et al. 2018). To clarify this problem, based on the previous research on e-commerce customer service chatbots, our research extends the theory of consumer values, following the logic of value-attitude-behavior, studies the factors that affect consumers' attitude and intention to adopt LazzieChat, and considers the moderating role of online shopping self-efficacy in this process. This is still a limited research field.

The empirical results confirm the consistency between the findings of this study and previous studies, especially the logical flow of personal values-attitudes-behaviors, which is an effective structural model for understanding and predicting behavior intentions. Attitudes play a key intermediary role in linking personal values to behavior, and this concept has been supported by previous literature (Homer and Kahle, 1988; Johnston et al., 2022; Khoi et al., 2018). In other words, our research results show that functional value, social value, emotional value and epistemic value significantly affect China’s consumers' attitudes towards LazzieChat. Attitudes towards LazzieChat play a key mediating role in

the relationship between consumption values (i.e., functional value, social value, emotional value and epistemic value) and continuance intention to adopt LazzieChat. It is worth noting that emotional value is the strongest predictor of consumers' attitudes towards LazzieChat, followed by functional value, social value and epistemic value in adopting ChatGPT-driven e-commerce AI chatbots in e-commerce consumer services.

According to the study's findings, the study suggests that functional value and epistemic value serve as important drivers of consumer attitudes and intentions to continue using ChatGPT-driven chatbots. This finding is consistent with previous literature in the chatbot context, indicating that consumers who perceive functional value and possess a curiosity for novelty and new knowledge are more likely to form positive attitudes and adopt chatbot services (Cicco et al., 2020; Zarouali et al., 2018). Results confirm that ChatGPT-driven e-commerce chatbots can offer higher responsiveness with high accuracy, reducing consumer effort and time while providing knowledge information about products. This efficiency-driven function and consumers' curiosity then affect the formation of attitudes and intentions. This study found that social value demonstrates a significant impact on consumers' attitudes toward LazzieChat, subsequently affecting their intentions to continue using it. This result is similar to previous research that highlights the influence of social value on user attitudes and intentions toward adopting digital technology services (Chaouali et al., 2023; Kaur et al., 2021; Khoi et al., 2018; Omigie et al., 2017; Wu et al., 2018). For example, Khoi et al. (2018) reported that social values influence Vietnamese consumers' attitudes and their intention to adopt mobile commerce services while calling for paying attention to exploring developing country consumer values to understand the adoption of mobile commerce technology. Hence, this study is a supplement to his, which further confirms the previous research results to confirm the importance of consumers' social value to their attitude. In addition, the results support that consumers' attitude towards LazzieChat has a significant impact on their continuance intention to adopt LazzieChat. It is similar to past literature that shows that attitudes positively directly influence behavior intention (Johnston et al. 2022; Kumar et al. 2024). For example, Kumar et al. (2024) emphasized that user's attitudes directly influence their intentions to adopt ChatGPT.

According to the study's findings, online shopping self-efficacy confirms its significant moderating role between attitudes toward LazzieChat and continuance intentions to adopt it. This finding was similar to past literature (Liu et al., 2017; Yi and Gong, 2008; Zha et al., 2013). For example, Zha et al. (2013) found that online shopping self-efficacy strongly moderates the effects of consumers' online shopping behavior and decision process. This means that compared with consumers with low online shopping self-efficacy, consumers with high online shopping self-efficacy are more capable of effectively transforming their attitudes to their continuance intention to adopt ChatGPT-driven e-commerce chatbots in e-commerce services.

5.1 Theoretical Implications

Theoretically, the investigation of this study can be used as new information to support ChatGPT in business knowledge. The concept of ChatGPT is still in the evolutionary stage (Kumar et al., 2024). The purpose of this study is to explore the motivation factors that affect consumers' continuous intention to adopt ChatGPT-driven chatbots in the e-commerce consumer service context. It fills a major research gap by studying consumers' continuous intention to adopt ChatGPT-driven e-commerce chatbots from the perspective of consumer values, which is a perspective that is often overlooked in existing research (Hu et al. 2018). Previous studies of e-commerce chatbots mainly focused on personification (Sheehan et al. 2020), continued use (Li et al. 2021), emotional attachment (Lee et al. 2021), trust (Cheng et al. 2021), perceived decision quality (Chen et al. 2020) and the relationship between customer loyalty and service quality (Chen et al. 2023). There is limited explore the role of consumption values in the context of AI e-commerce chatbots. In the ChatGPT context, most researchers have explored ChatGPT from educational and technological perspectives, for example, applications and backgrounds (Pasupuleti and Thiyyagura, 2023) and management concepts and theories (Korzynski et al. 2023). Besides, the past literature studies on ChatGPT used in the e-commerce context have been commentary-based studies, such as (Kshetri, 2024), overlooking exploratory studies that could provide deeper insights into potential factors influencing the adoption of ChatGPT-driven e-commerce chatbot. ChatGPT-driven e-commerce chatbots have great potential, there are huge theoretical implications to understand how value-based consumer-driven motives affect their continuance intentions to adopt ChatGPT-driven e-commerce chatbots in e-commerce consumer services. Hence, this paper can be used as the basic framework for future research to gain further insights and information on ChatGPT-driven e-commerce chatbots.

In addition, this study proved the applicability of consumption values within the value-attitude-behavior model. Our research results confirm that emotional value and cognitive value are the main drivers of consumers' attitudes towards LazzieChat, followed by functional value, social value and epistemic value, which indirectly affect continuance intention to adopt LazzieChat through their attitudes. This study is helpful to the theoretical progress and applicability context of the literature by integrating the theory of consumption value with this model, which can be extended to explore and predict the influence of various values on consumer attitudes and intentions toward adopting any artificial intelligence chatbot service. At the same time, this study emphasizes the moderating effect of consumers' online shopping self-efficacy between consumers 'attitudes and their continuance intentions to adopt ChatGPT-driven chatbots in e-commerce services. This expands the existing literature on the regulatory effects of consumer characteristics, such as online shopping self-efficacy in the context of using ChatGPT-driven chatbots in emerging technologies and e-commerce.

5.2 Managerial Implications

The findings of this research offer several implications for the integration of ChatGPT-driven chatbots into the e-commerce industry. Firstly, these study results provide valuable insights into consumers' perceived consumption value when adopting ChatGPT-driven chatbots in e-commerce services. This understanding can guide actionable strategies for ChatGPT's application in the specific domain of e-commerce consumer service. For instance, the high value placed on emotional, functional, social, and epistemic values indicates that the innovative technologies and features offered by ChatGPT-driven chatbots hold strong appeal for consumers. This can contribute to enhancing consumers' emotional satisfaction, improving their social connections and image, and stimulating their curiosity. Managers operating in the e-commerce and consumer service sectors can leverage ChatGPT-driven chatbots to enhance their e-commerce consumer support. They should focus on operational excellence and explore pioneering consumer service approaches to deliver emotional, functional, social, and epistemic values, ultimately enhancing the overall e-commerce consumer service experience.

Secondly, our findings emphasize the significance of attitude as the primary direct driver of consumers' continuance intentions to adopt LazzieChat. This shows that consumers' attitudes play a key role in them adopt new digital technology services. As the use of ChatGPT-driven chatbots in e-commerce services represents a novel and innovative method, compared with traditional chatbots, managers should give priority to service quality and provide valuable information, to create a unique consumer service experience. This method can positively influence people's attitudes, and thus lead consumers to be more willing to adopt this new technology to meet their e-commerce consumer service demand.

Thirdly, the research results emphasize the moderating effect of online shopping self-efficacy between consumer 'attitudes and their continuance intention to adopt LazzieChat. This means that consumers with high self-efficacy in online shopping are more likely to use ChatGPT-driven chatbots in e-commerce services. E-commerce consumer service providers and managers should take measures to enhance consumers' power by providing clear calls to action and guidance tips on online consumer service platforms. This can be achieved through a user-friendly website design, intuitive navigation and quick customer support. In addition, online retailers can guide consumers on how to interact effectively with ChatGPT-driven chatbots by providing tutorials or frequently asked questions. Such measures will promote the adoption of ChatGPT-driven chatbots in e-commerce services and improve the overall consumer experience.

Finally, it is possible to improve the efficiency and quality of e-commerce consumer service by using chatbots driven by ChatGPT in e-commerce service. However, ChatGPT is biased against certain cultural and language combinations, which leads to inappropriate or biased responses, and it may take additional fine-tuning and experiments to achieve the correct balance between control and quality (Kumar et al., 2024). Hence, understanding consumers' consumption value factors that influence their continuance intention to adopt

ChatGPT-driven e-commerce chatbots to meet user expectations may contribute to practitioners' set standardization of ethics and behavior in the e-commerce industry. Standardization Chatgpt-driven e-commerce chatbot will result in a better consumer experience, impacting consumer attitudes, behavioral intentions and even lifestyle choices.

5.3 Limitations and Future Research

Although this research has made remarkable contributions, it also has some limitations that must be admitted. Firstly, the sample for this study is completely from the situation in Singapore. This limits the applicability of its conclusion outside this field. Future research should cover different cultural situations with larger geographical areas to improve external effectiveness. This approach would help extend the applicability of the proposed model and shed light on how different country-specific characteristics influence key consumption value-driven variables related to the continued adoption of ChatGPT-driven chatbots in e-commerce services.

Secondly, Sheth et al. (1991) found that the research environment may make some consumption values irrelevant, and some new values specific to this environment may be found. This study only focuses on the functional, social, emotional and epistemic values of consumer value theory. Future research can further explore the specific conditional value in the context of exploring consumers' continuity intention to adopt a chatbot-driven e-commerce chatbot. It will also provide valuable insights for chatbot-driven e-commerce AI chatbot service providers.

Lastly, this study explored the potential of employing ChatGPT-driven chatbots in e-commerce services by soliciting input from individuals with experience with LazzieChat on Lazada only. With the introduction of new-generation consumer service bots based on ChatGPT technology across various shopping platforms, researchers could leverage other platforms to investigate consumption value preferences and arrive at more comprehensive conclusions.

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Annexure

Table 1: Measurement Items

Functional Value (FUV) (Roig et al., 2006)	
FUV1	I think that LazzieChat knows its job well.
FUV2	I think that LazzieChat can offer knowledge information that is up to date.
FUV3	I think that the information provided by LazzieChat has always been very valuable to me.
FUV4	I think that LazzieChat offer high-quality service.
Social Value (SOV) (Omigie et al.,2017)	
SOV1	I think that using LazzieChat will show my better social image to others.
SOV2	I think that using LazzieChat can provide reliable services and honest opinions.
SOV3	I think that using LazzieChat increases my social relationship with family, friends, groups, associations, and so on.
Emotional Value (EMV) (Karjaluoto et al., 2021)	
EMV1	I can use LazzieChat at any time.
EMV2	I think that LazzieChat enables me to express my personality.
EMV3	I think that LazzieChat makes me feel fashionable.
EMV4	I think that LazzieChat helps me live and work satisfactorily.
Epistemic Value (EPV) (Omigie et al.,2017)	
EPV1	I started using LazzieChat because I was curious about its service.
EPV2	I started using LazzieChat because of discussions and recommendations from people around me.
EPV3	I started using LazzieChat because I wanted to learn a new lifestyle.
Attitudes toward LazzieChat (ATL) (Han et al., 2017)	
ATL1	I am interested in using LazzieChat.
ATL2	I would like to treat recommendations by LazzieChat as one of my online purchase decisions.
ATL3	It gives me a positive feeling to use LazzieChat.
Online shopping Self-efficacy (OSS) (Dash & Saji, 2008)	
OSS1	I feel confident communicating with LazzieChat if there are clear instructions for my reference.
OSS2	I feel confident communicating with LazzieChat even if no one tells me how to use it.
OSS3	I feel confident communicating with LazzieChat even though I have never experienced the same before.
OSS4	I feel confident communicating with LazzieChat even if I have just seen someone using it before trying it myself.
OSS5	I feel confident communicating with LazzieChat if I have just the online help function for assistance.

Continuance intention to adopt LazzieChat (CUI) (Choudhury and Shamszare,2023)	
CUI1	I would use LazzieChat for online shopping-related queries.
CUI2	I would take decisions based on the recommendations provided by LazzieChat.
CUI3	I would continue using LazzieChat in future.

Table 2: Demographic Profile of 305 Survey Respondents

Items	**Frequency (N=305)**	**Percent (%)**
Gender		
Male	190	62.30
Female	115	37.70
Age		
18-25	52	17.00
26-35	163	53.40
36-45	67	22.00
>45	23	7.50
Education level		
Doctorate	17	5.60
Master's degree	83	26.20
Bachelor's degree	125	41.00
Other	80	26.20
Individual monthly income (SGD$)		
Under 2,500	44	14.40
2,501-5,000	124	40.70
5,001-7,500	110	36.10
7501 or higher	27	8.90
Hours spend on LazzieChat (per week)		
Less than 3 hours	66	21.60
3-6 hours	122	40.00
7-9 hours	93	30.50
More than 9 hours	24	7.90