



Utility and Acceptability of AI-Enabled Chatbots on the Online Customer Journey in E-Retailing

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Abstract: Retailers use artificial intelligence (AI) to serve customers better. This study examines the role of chatbots in shaping attitudes of customers relating to usefulness, usability, and trust when shopping for groceries online. Automated conversational agents, or chatbots, not only understand customers, but also provide them product knowledge, and promote behavioral change. Chatbots, automated and cost-effective as they are, provide efficient first-level support because a human employee cannot answer the whole range of customer questions round the clock. For Analysis, Structural Equation Modeling (SEM) with the AMOS analysis programme version 23 is used in this investigation. The online questionnaire was circulated via Google forms (N-375) promoted on social media to respondents who are at least 18 years of age and have completed online transactions, selecting them using a sampling quota in the survey procedure. A novel model will be tested and compared to prior research. According to the study's findings, attitudes are significantly influenced by usefulness, usability, and trust, whereas attitudes have a major impact on decisions. However, it appears that trust has little impact on consumers' views about online purchasing. This conclusion could be yet more support for previous research that consistently claims that trust affects customer purchases. In the case of online purchasing, not only is the trust element important for customers to make a choice, but it also matters more than the attitude factor because attitude is a product of many different aspects. Significantly consumer confidence in internet retailers is the factor that most affects attitude. The quantitative investigation revealed that a deep majority of respondents were apprehensive about employing AI and online-retail (e-retail) chatbots, primarily due to concerns about their accuracy and security, but would like to seek the advice of chatbots for informative purposes.

Keywords: Artificial intelligence (AI), Chatbot, E-retail, customers, acceptability, Perceived Utility, Customer Journey, Conversational agents

1. INTRODUCTION

Customers want prompt, personalized, and convenient service on their preferred channel, 24 hours a day, seven days a week, and chatbots provide them with the same. According to a survey conducted by the National Retail Federation nrfConnectsInstore, 54% of shoppers go online to buy something specific. The following factors influence their decision: the ability to find what they want quickly and easily, excellent customer service, quick and easy checkouts and chatbots acting as a solution [1] to this. Chatbots have all of these functions built-in, making them ideal for integrating with e-retail websites and communication platforms. For example, the e-commerce chatbot of denim retailer Levi's provides customer service and acts as a virtual stylist. Customer service abilities are fairly standard. The user chooses from a menu of predefined responses (such as deliveries and returns) and

the bot takes them to the appropriate page on the Levi website. The virtual stylist is far more engaging, assisting users in finding the best style, fit, rise and stretch of jeans. It starts with multiple-choice questions about body shape and preferred appearance, fit and occasions, such as the choice being for office or casual use [2]. The bot then makes personalised jean recommendations. All recommendations are synchronised with Levi's real-time inventory, preventing cart abandonment due to out-of-stock items at the checkout. Users can also see their selections 'styled' as part of an ensemble to persuade them to buy the jeans. The most appealing aspect of Levi's chatbot is that it solves a specific problem identified by the retailer. It reduces online returns due to sizing issues by assisting customers in locating the best-fitting jeans. The chatbot can present a variety of product possibilities, depending on the customer's preferences regarding the



product, saving the customer's time, energy and effort [3]. Frazer Brookes is a well-known network marketer who teaches other network marketers how to use social media to grow their businesses. His Instagram account, which has over 140,000 followers, serves as his primary means of communication with his audience. Brookes receives many Instagram direct Messages daily but cannot respond to everyone. He used ManyChat's Instagram Automation to streamline conversations and respond to each one immediately. With the Story Mentions trigger enabled, Brookes' Messenger bot automatically responded to people's messages and Story mentions, ensuring they felt heard and valued. The bot responded to each person individually with various responses, ensuring that no one received the same blanket statement [4]. Both conventional and modern buyers can benefit from a chatbot service. Chatbots are a gift to modern buyers since they can receive the perfect goods delivered to their doorstep [5]. For traditional buyers, a chatbot can assist them in finding nearby stores [6]. A customer may wish to see or try on a product they saw on the website by visiting the store [7]. The user can use the chatbot to search local stores and learn about opening hours and product availability without going to the store. Chatbots are linked to the database of the e-retail website, which contains all product, service, feature, and location [7] information. Customers can use the chatbot to select the product they want to buy, provide their address and contact information and place their order [8].

Upcoming products related to the customer's intent allow them to place pre-orders for such products before they go out of stock. After placing an order with the chatbot, the consumer can inquire about their package's location, delivery date [9] and time, and obtain information about the postal service and their contact information [10]. Most chatbots will ask for the user's contact information during a conversation. Retailers can utilize this feature to give user updates and notifications about new items, annual or seasonal specials, branch openings and events [11]. For example, Lego, one of the world's most successful toy companies, was the first toy retailer to provide a customer e-commerce chatbot [12]. Ralph, Lego's e-commerce chatbot, now guides customers through the company's vast catalog all year long. It begins by categorising the user into categories such as region, age, gift interests and budget. This helps with both refining and customising gift suggestions. Based on this information, Ralph recommends several Lego toy sets. Users can quickly purchase the set by clicking on it and being transferred to website shopping basket. If users fail to complete a task, they are retargeted with a Facebook message asking if they require additional assistance within 24 hours. The overall concept is simple, but it has proven to be highly effective for Lego in increasing sales and conversions. Ralph's (or should we say his!) personality is what distinguishes him from the others. It's very engaging

and conversational, with phrases like "oh my bolts" and animated gifs of the bot at work. Because of these characteristics, it distinguishes itself from the rest of the pack. A consumer's information, demographics, preferences, searches and prior orders generate these messages and notifications. Chatbots can send automated messages to clients who receive points for purchases, tell them how many points they have left in their account and guide them to shopping links or deals where they can use their points, inducing customers to make repetitive purchases. Emotions are expressed through words. Affective AI systems can scan all customer conversations to get a customer satisfaction estimate without requiring customers to complete surveys [12]. Integrating AI technologies into retail allows merchants to provide a better consumer experience. Nivea, a German body care brand, has a simple e-commerce chatbot dedicated solely to face care. Its purpose is to help users determine their skin type. All of this is accomplished through the use of only three questions. Users can choose one of four responses to each question. The user is aware of their skin type by the end of the conversation, which lasts less than a minute. They are then directed to a Nivea website that contains skin-specific tips and products. The Nivea chatbot is compelling despite its simplicity. Nivea developed a highly targeted chatbot that targeted a specific customer persona by focusing on a particular objective and a specific customer need.

Additionally, the chatbot [9] can provide information on chatbox which is a significant technological development. Text-based and speech-based language processing are the two types of language processing. Automated conversational [13] agents can enhance communication and prompt customer behavior change. To forecast acceptance, research into the incentive to utilize chatbots is needed in retail services. Investigations into their perceived utility and acceptability from customers' perspectives are the need of the hour. The goal of this study is to see how willing people are to interact with AI-powered retail chatbots. The word "chat" means conversation, and "bot" refers to the robot; its combination means that it is a conversation robot [14]. The chatbot is a software application that enables a dialogue with humans with the help of natural language [15] AI. In particular, computational linguistics methods are used in chatbots to create a natural language interface that can interpret and respond to user requests in [16] natural language. Customers' queries are answered in real-time. The input language is examined using a pattern-matching approach to locate critical phrases in the chatbot's rules, triggering scripts to respond to the user. Text-based systems have become obsolete due to speech recognition, linguistic processing, and other AI capabilities [17]. Customers who have used online and offline services now believe that online services are more efficient, effective, and cost saving [18]. The significant environmental changes brought on by COVID-19 have a variety of effects on the retail sector. The crisis has

highlighted significant variations in performance across various types of operations. COVID-19 has left [19] a particularly negative impact on retail business procedures. Appropriate social distancing positions and the cleaning of shopping carts became paramount in retail enterprises. Customers are encouraged to use e-commerce by placing orders online for pick-up in-store. The pandemic has changed the way people work, learn, and shop. This is just the beginning. Frequent business consumer expectations have shifted as they rely increasingly on virtual resources for day-to-day tasks. People demand self-service alternatives to solve problems, obtain information, process returns, schedule services, and more when they go online. This has speeded up the adoption of customer care chatbots, particularly in e-retail and e-commerce [20]. Hence, retailers worldwide have opted to use chatbots to embrace the customer journey to facilitate online shopping. The pandemic also enabled the retailers to strengthen their online web channels to help customers attain the desired product and services on time and under safety measures.

A report titled "Perspective on retail and consumer goods" by McKinsey & Company was issued on Aug 8, 2020, forecasting the need for AI in the retailing sector to improve the customer journey. The report aimed to provide case laws of multinational companies like Alibaba and Amazon on the attitude of generation Z on the application of AI and ML algorithms in grocery, skincare, beverages, dairy, and apparel in countries like Indonesia, Australia, Japan, Thailand [9] and South Korea. Technology and data aided the entire company, not just in sales and marketplaces but also in the back-end office, customer support, and every other department.

2. THEORETICAL FRAMEWORK

1) AI in e-retailing

AI and retail systems work together to enhance customer experiences, forecasting, inventory management, and other areas. The consumer touch points offline and online collect massive information on inventory, advertising efforts, sales numbers, and other insights. Brick-and-mortar businesses can benefit from real-time intelligence provided by computer vision and other technologies. For instance, AI applications in e-retail shops could help with product pricing by displaying the expected outcomes of alternative price strategies.

In this exceptionally competitive e-retail sector, direct communication with customers is the key to growing sales and enhancing customer happiness (Kull et al., 2021). Thus, it is pushing e-retailers to use automated replies of recurring communication by users, establishing the genesis of AI based Chatbots. They enable customers to use natural language to communicate with the system and ask queries. The call center agent can respond, ask follow-up questions, and guide customers through the decision-making process, allowing consumers to find a solution to

their cases faster and with more satisfaction (Rai, 2020).

An emerging trend is people wishing to search online by snapping a picture of a product offline. This is especially popular among young millennials in e-retail sectors for clothes, fashion, and home products. Chatbots assist retailers in developing a customised computer vision model that can be used for making product catalogs. The developer may incorporate this feature into the customer's mobile app, providing new experiences for customers (Lei et al., 2021).

AI is also assisting retailers in developing a plan to combat bogus reviews. AI is capable of processing enormous amounts of user-generated content. For example, the research conducted by Aspectiva (an AI-based company). Using machine learning (ML) techniques, they analyzed evaluations for the Bellagio, a Las Vegas hotel, and acquired roughly 25,000 opinions. There are always more genuine reviews than phony ones; the overwhelming numbers allow customers to perceive reality opinions already expressed on the internet (Rajaobelina and Ricard, 2021) (Ameen et al., 2021).

The efficiencies required to deliver good value to retailers necessitate a high level of scalability in AI and ML (Sotolongo and Copulsky, 2018) and its use in various domains. By utilizing conversational synthetic intelligence through AI-powered chatbots, retailers can present clients with a blended virtual, personalized, and on-the-spot conversational level (Przegalinska et al., 2019). Retailers can further use these chatbots to deliver updated customer experience, enhanced value perception and in-store customer engagement.

A. AI in e-retailing along customer journey

This study intends to find customers' adaptability to chatbots in the e-grocery retailing industry and their willingness to communicate with to a Chatbot rather than a human on the other end.

As per extant literature many customers will choose an online chatbot to purchase grocery when they have a positive attitude towards it (Indarsin Ali, 2017). For assessing someone's attitude, three independent variables can be used, namely perceived usefulness, perceived ease-of-use, and trust (Yadav et al., 2016). Accepting the mindset of customers to use chatbots in online commerce is significantly influenced by perceptions of perceived utility and simplicity of use (Pavlou, 2003). Another study found that consumers' perceptions of usefulness have a large and favorable impact on their views regarding shopping at online retailers (Delafrooz et al., 2011). When customers opt to purchase goods or services online, they are unable to physically inspect the items they are purchasing or interact in person with the vendor of those goods. As a result, they cannot be convinced that their expectations will be met. This demonstrates the need to increase customer and

seller trust (Alwafi Magnadi, 2016). Customers will have a positive attitude toward chatbots used by online retailers if this trust is established from the ground up by the seller by delivering the items or providing the services as requested.

The trust factor is a crucial aspect that affects consumer interaction with chatbot while purchasing (Pavlou Fygenon, 2006). Because in online retails, building customer trust plays a crucial role in modifying the attitudes of interested visitors. Customers rely on the promises made by sellers when they shop online. The main reasons why customers don't choose to shop grocery online may include lack of trust on online retailers, apprehension about fraud and the payment process (Solomon, 2018). Customers are aware that they can report and receive feedback from a chatbot in the event of a problem. "Varus," a Ukrainian grocery chain, features a chatbot that receives customer input and manages it based on the customer's items. The first page shows how the chatbot displays a receipt for the most recent transaction and an option to rate the service. About 15% of loyalty program users utilize [21] a chatbot to submit comments or receive the most recent offers and discounts. About 30% of consumers prefer to submit comments in the chatbot's form or polls.

Risk is another crucial aspect in determining characteristics that affect how consumers feel about chatbot-based online purchases (Shu-Hung Bayarsaikhan, 2012). Risk is an element that shapes consumers' attitudes towards using chatbots while buying online, as there is risk of online fraud and other incidents to negatively impact consumers' online purchase decisions (Hsu et al., 2014). Due to the ability to compare prices between sellers of items from different vendors, online businesses have the advantage of reducing costs, time, and effort involved in purchasing. However, there are also many fraud instances that negatively impact online purchases (Hong Cho, 2011). This illustrates the importance of fostering trust between online merchants and their clients (Alwafi Magnadi, 2016). Risk must be considered by marketers who wish to influence consumer purchase decisions because it affects consumers' views towards shopping at online merchants (Hsu et al., 2014).

Using online stores involves combining shopping with technology, thus there will be adjustments to new technologies like chatbots that users will use when making purchases online. This study will offer empirical support while highlighting the variables that affect customers' decisions to shop online using chatbots. This study looks at how customer attitudes and choices, particularly those related to purchasing grocery items from online retailers, are influenced by views of comfort, usefulness, trustworthiness, and risk.

For this examination, the research uses the Technology

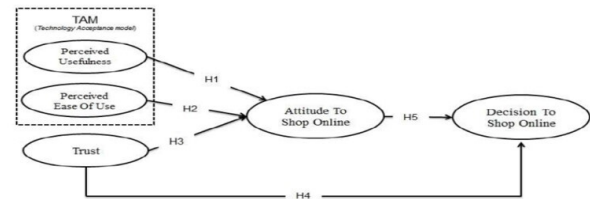


Figure 1. Suggested framework of the Work

Acceptance Model. Two factors are used by TAM: Usefulness, which measures how the new strategy will improve performance, and Ease of usage, which relates to how easy is the adoption of new approach for people (Davis, 1989). Additionally, there are other factors influencing how consumer attitudes develop, such as trust and danger associated with shopping online. It is possible to say that a consumer's attitude towards a store plays a significant role in their decision about where to shop, making attitude the primary predictor of decisions made in online retailers. The direct link between consumer attitudes and choices when purchasing in online retailers is explored in this study. This study suggests a model to investigate the direct relationship between convenience, usability, trust, and risk to the mindset of customers deciding to shop online with chatbots, as illustrated in Figure 1.

The customer journey outlines how customers interact with a company's website at three stages: pre-buy, purchase, and post-purchase. Chatbots can enhance the customer journey (Zhang et al., 2022) as human assistants cannot answer all the customer questions but chatbots can provide automated and cost-effective first-level support. Chatbots can help at pre-purchase by instantly matching a customer's requirement with all available products and price points by using AI learning algorithms and predictive modeling (Rajaobelina et al., 2021). The factors affecting decision to shop online can be theoretically scrutinized further.

Perceived Usefulness

The notion of Perceived Usefulness facilitates attitude building (Davis, 1989). In the study the main idea is to use technology acceptance model TAM, and include factors like trust, attitude and decision which are derived from the theory of reasoned action TRA into the conceptual framework. The study revealed that a strong, favorable, and important connection exists between perceived usefulness and attitudes (Indarsin Ali, 2017), demonstrating the influence of attitude dimensions with the original TAM theory (Suleman et al., 2019). The chatbot will ask the user a few questions when the conversation begins by showing a series of photographs to choose between different styles (Rai, 2020). It's a unique way to learn more about the user's preferences and suggest products matching the customer's style through Machine learning.

For example, the Barista chatbot provides various coffee and cake options. As a result, researchers initially propose the first hypothesis:

H1: The usefulness of shopping with chatbots has a significant effect on grocery consumer attitudes.

Ease of use

This variable has been researched to predict consumer attitudes and discover how established perceptions had an impact on attitudes (Suleman et al., 2019; Indarsin Ali, 2017). This convenience perception has demonstrated a greater impact on opinions when consumers shop at online retailers (Palvia, 2009). Offering to make a new purchase based on a customer's previous preferences is another way to increase sales. A chatbot can predict when specific clients may require your services again (with vendor assistance) [22] and give them a notification. Sephora is aware of its clients' purchasing patterns and reminds them of unique tailored offers when they haven't made a purchase in a while or cannot select a product.

In online retailing the authors Lim and Zhang, (2022), explored the customers' adoption of AI-driven personalization in long run using an integrative model of TAM and the perceived contingency model. It helped in determining the willingness of the customer to use e-learning platforms during COVID-19 and technology adoption based upon different gender and age groups (Copulsky, 2019). Nowadays healthcare is using artificial intelligence (AI) powered chatbots for promoting healthcare reports, disseminating information, and potentially influencing behavior change. Exploring the motivation to use health center chatbots is necessary for predicting adoption. The study conducted by (Nadarzynski et al., 2019) investigated the acceptability of patients willing to interact with AI-driven health chatbots. The studies (Mostafa and Kasamani, 2021) used the technology acceptance model and diffusion of innovation theory to determine the consumers' attitude and intention to use the chatbot while shopping. Their finding suggested that the perceived utility and choice to use a chatbot is directly influenced by the awareness level and attitude of the consumer. While using smartphones for shopping also suggested that chatbots and other emerging digital technologies will have a far-reaching impact on retailers and consumers. Pointing out that consumer awareness about the chatbot directly influences the perceived utility.

An antecedent variable, such as innovation, was found to have a favourable impact on perceived usefulness and simplicity of use. According to Lu et al. (2022), social influence and individual creativity affected American students' perceptions of the usefulness and usability of online mobile technologies. Innovation positively increased customers' propensity to utilize drone food delivery services, according to a study by Waris et al. (2005) that looked at customers' adoption intentions for these services. In-

novativeness had a favourable impact on perceived utility in a study by Sun and Chi (2018). Hedonic, social, and functional motivation were the characteristics of consumer innovativeness that were found to be important predictors of attitude and behavioural intentions in the setting of food delivery services, according to Hwang et al. (2019). A chatbot can assist a consumer if there is a problem with the goods, especially in the case of electronics. A chatbot then offers service status to reassure the customer that their wants will be met. For example, if something goes wrong with Phillip Morris' IQOS gadget, a chatbot might detect [23] the problem and notify the necessary personnel.

H2: Chatbots lead to ease of shopping having a significant effect on grocery consumer attitudes.

Trust

Previous studies have found that the most important factor influencing attitude is trust (Suleman et al., 2019). Trust in a customer's ability to make a purchase enables them to accept risks in business dealings and shapes their views (Indarsin Ali, 2017). Research has proven that trust affects people's attitudes regarding online buying (Ha Stoel, 2009). In addition to having a favorable impact trust also influences consumers' decisions to shop online (Suleman et al., 2019). Retailers use chatbots to provide services, manage customer information, identify customers, and quickly acquire feedback [24]. In the Ukrainian market, an excellent example is the cafe chain's chatbot, which offers a variety of features such as personalized offers, point-scoring, and information about free sandwiches or coffee. Customers can utilize a built-in chatbot bonus card to pay for purchases at Metro [25]. With chatbots, you don't need Google to find out where your favorite coffee shop or your favorite bakery is. Chatbots could send a list of addresses and the location closest [26] to them. This feature is available at Aldi, 2Cups, and IQOS retailers. Consequently, the following hypothesis are formed:

H3: Trust in shopping with chatbots has a significant effect on grocery consumer attitudes.

H4: Trust in shopping with chatbots has a significant effect on buying grocery decisions.

Attitude to Shop with Chatbots

The definition of attitude is the propensity to cultivate consistent behavior in favor of or against an object (Schiffman et al., 2010). The degree of optimism with which consumers approach their buying can be understood as their attitude. It is thought that this optimism gives consumers additional options when it comes to where they shop (Suleman et al., 2019; Hsu et al., 2014). Earlier research found a significant beneficial relationship between attitudes and decisions (Wu Chen, 2014). It was shown that customers would be more likely to shop online



TABLE I. Constructs Used

Construct	Defination	References
Perceived Usefulness	Is when customers think using chatbots for purchasing will enhance their performance	(Davis, 1989)
Ease of Use	Customers think using Chatbots for online food shopping can make the task easy	(Davis, 1989)
Trust	Positive expectation as consumers trust to take risks in Technology	(Suleman et al., 2019)
Attitude	Positive feelings of consumers as they shop from chatbots	(Davis, 1989)
Decision	The intensity of consumers' positive sentiment feel when they shop with chatbots	(Suleman et al., 2019)

if they had more self-assurance and a more upbeat mindset. The retailer is familiar with his customers and has creative ways to sell them more of what they desire. For example, [27] a consumer electronics retailer may provide individualized discounts to anyone who subscribes to a bot or deals on [28] power banks or headphones after purchasing a mobile phone. The studies [29] used the technology acceptance model and diffusion of innovation theory to determine the consumer's attitude and intention to use the chatbot while shopping. Their finding suggested that the perceived utility has a direct influence on attitude of the consumer. Increasing utilization of smartphones for shopping [30] is also suggestive that chatbots are an emerging digital technology with a widening impact on retailers and consumers.

As a result, hypothesis number five is established:

H5: The attitude of shopping at online grocery has a positive effect on grocery consumer decisions.

After exhaustive literature review, the research uses following operationalized definition of the five constructs used in the research model namely, Usefulness, Ease of Use, Trust, Attitude and Decision as depicted in Table I

The novelty of the current study lies in its projection of a holistic view of customers using a chatbot in the online retailing sector. As mentioned, chatbots' utility is being investigated in hospital services, banking, and healthcare. The COVID-19 pandemic presented an unexpected challenge to the hospital admissions. To help patients with low health literacy, a chatbot named HarborBot assists in the social needs screening of the patients. (Kocielnik

et al.,2019). Literature establishes the guest's intent to use artificial intelligence (AI) and robotics as a protective measure in response to COVID-19 by extending the protection motivation theory (PMT) (Aker, 2020).

Hence this study aims to fill the gap by investigating the utility and acceptability of chatbots by the Indian customers in e-grocery retailing sector. The authors have mentioned that to understand customers' willingness to adopt new technologies, they must be aware of the application and usage of such technologies. They are benefitted from their customer journey. Once the customers' awareness level rises, they are willing to adopt the novel technology in their routine buying behavior, improving the customers' acceptability of the same.

3. RESEARCH METHODOLOGY

A. Sample and Study Procedure

It is already established that there exists a sizable community of online grocery shoppers in India, giving rise to increasing providers like Blinkit, Zepto, Swiggy Instamart , Bigbasket and Amazon fresh etc. This study is centred around shoppers who have already done their grocery shopping online and are aged above 18 years. The geographical parameter of respondents chosen is Delhi NCR and nearby areas. The questionnaires were distributed via Google forms. Before the questionnaires were officially floated, the researchers did a pilot test to ensure that all the items were understandable. The researchers shared the questionnaire with research scholars to determine its understandability and check its reliability and validity. The questionnaire was modified further to make it easier for respondents to complete. In total, 375 responses were collected.

In the current study purposive sampling was used (Etikan et al., 2016) to see the overall effect of the investigation.

The research sample entails referencing the requirements suggested by Hair et al., 2010, specifically the Maximum Likelihood Estimation (MLE) technique due to sample sensitivity of Structure Equation Modelling (SEM). According to MLE, 100–200 samples constitute a considerable sample size. Also, it is suggested that the sample size should be at least five times as there are indicator variables (Ferdinand, 2014). As the study uses five indicator variables, therefore, the study needs at least 150 participants (Almalki, 2020).

B. Measurement Model

With four theoretical elements from the Technology Acceptance Model, the study used modifications of the research architecture linked to online businesses after considering the findings of earlier studies. An indication scale with six items is used to gauge people's impressions of utility and ease (Davis, 1989). Likert type scales with a five-point range from "Strongly Agree" to "Strongly



TABLE II. Measurement Model Scale

Decision to shop grocery online with chatbots	
DSC1	Ease and Comfort when shopping with chatbots
DSC2	Grocery items in this shopping way are available
DSC3	Buy Grocery Items regularly with the help of chatbots
DSC4	Flexibility of time of purchase
DSC5	Chatbots assist while payment
DSC6	With chatbot assistance, payment are protected from fraud
Attitude to shop grocery online with chatbots	
ASC1	Love to shop with chatbots
ASC2	Chatbots assistance has advantages
ASC3	Chatbots helps in wiser shopping
ASC4	Shopping with chatbots is interesting
ASC5	Chatbots presents interesting product combinations
Perceived usefulness of chatbots in online grocery shopping	
PUC1	Time taken with chatbots in online shopping is shorter
PUC2	Product information is clear to understand with chatbots
PUC3	Chatbots provides product specific information
PUC4	Shopping for grocery is easier with chatbots
PUC5	Shopping process us simple with chatbots on online grocery
Perceived Ease of Use of Chatbots in online grocery shopping	
PEC1	The ordering procedure is not complicated with chatbots
PEC2	The terms used with chatbots on online grocery shopping are common
PEC3	Chatbot helps in order monitoring
PEC4	The chatbot can be used to cancel orders
PEC5	Grocery chatbots provide clear product information.
PEC6	The product's directions are clear.
Trust to shop online grocery with chatbots	
TSC1	Chatbot is able to accept product orders
TSC2	Chatbots are not involved in fraud cases.
TSC3	Retail chatbots are attentive to client inquiries.
TSC4	chatbots address client problems and provide assistance.
TSC5	Chatbots protect customer data and information
TSC6	Chatbots can maintain the confidentiality of transactions about payment data.

Disagree" were used to measure all research constructs by providing each respondent with a questionnaire that has 30 questions. A short piece of the questionnaire was also included to examine the respondents' characteristics (Kwek et al., 2010). Table II represents the development of measurement model and constructs used:

For Analysis, Structural Equation Modeling (SEM) with the AMOS analysis programme version 23 is used in this investigation. In SEM, the degree of data compatibility with the model is evaluated in accordance to number of stages (Hair et al., 2010). The measurement model fit and structural fit need to be taken into account, starting with the overall model fit (model suitability of the entire model). SEM is used in this study to test a theory by determining whether the model fits the data, and it allows a variable to be applied dynamically so that it can serve as both an independent and a dependent variable in a model. A pilot study was conducted to determine the understandability of the questionnaire and check its reliability and validity. The statements were modified as per response received. The questionnaires were distributed via Google forms and 204 responses were collected.

To evaluate each construct's internal consistency, composite reliability between 0.5 and 0.6 is considered acceptable. If a measurement model's extracted variance (VE) value is higher than 0.05 or its construct reliability (CR) value is 0.7, it is said to have strong reliability for measuring each hidden variable (2014 (Ferdinand). The normality assumption is shown to be violated at the significance level (P) 0.05 (5%), as indicated by the critical value (CR) being determined to be > 1.96.

In SEM AMOS testing, one direction is completed with a confidence level of 95%, considering that all variables measured must pass the validity and reliability tests. To calculate the magnitude of each latent variable's loading factor, loading factors above 0.70 are strongly advised, although loading factors above 0.60 are still acceptable as long as the model is still being developed. The estimation of each latent variable was based on indicators using a five-point Likert response scale arrayed from 1 coded as "strongly disagree" to 5 as "strongly agree".

Table III represents the demographic information of the respondents. 43.1% were male respondents within the sample, and 56.9% were female respondents. In addition, 34.4% of respondents were below the age of 25. Moreover, most of the respondents were college post-graduates, with 54.9%. Table III below shows the distribution of the participants.

Cronbach's alpha coefficient, which measures how far the different indications for a construct converge, is used to test the reliability of internal consistency. Table IV shows the estimated Cronbach's alpha score, which is higher than the generally accepted level of adequacy of 0.70. It offers proof of adequate dependability as well as support for internal consistency between measurement items. Table IV results show that there are still values below 0.60, hence the indicator needs to be eliminated for all results to be over 0.60.



TABLE III. Demographic Profile

Variable	Demographic Profile	Frequency	%
Gender	Male	162	43.1
	Female	213	56.9
Age	Below 25 yrs	129	34.3
	25 yrs to 45 yrs	204	54.4
	Above 45 yrs	42	11.3
Education level	Graduation	125	33.3
	Post-graduation	206	54.9
	Doctorate	44	11.8

C. Data Analysis

Data analysis was done using a two-step approach, as Anderson and Gerbing (1988) recommended. Confirmatory factor analysis (CFA) has been used to independently assess the measurement model in order to determine whether the observed variables accurately reflect the measurements of the latent variable. The results have been evaluated using the SEM method. The validity of the measurement model in the SEM analysis had to be proven before the structural component of the entire SEM could be developed (Kline, 2011). The standardised path coefficient, which quantifies the directional dependencies between the variables, was used to assess the structural model. The standardised path coefficient, which quantifies the directional dependencies between the variables, was used to assess the structural model.

4. RESULTS

The direction of the association is denoted by the coefficient symbol in correlation, which evaluates the relationship between variables. Various methods can be employed for this purpose. The most well-known technique employed by researchers is undoubtedly the Pearson correlation coefficient (r). According to these findings, the correlation values did not rise above 0.80, proving that multicollinearity is not a major issue (Asrar-ul-Haq et al., 2019).

A. Measurement Model

A CFA-based measurement methodology was evaluated in the current study utilizing AMOS 22.0 (analysis of moment structures). CFA evaluates the measurement model's acceptance and dimensionality. Factor loading, AVE, Composite reliability (CR), and Cronbach's alpha are considered to examine validity and reliability. The construct validity denoted range of the measured variables through which the latent concept was measured (Hair et al., 2010). Using statistical analysis, the hypothesised associations based on theoretical considerations were evaluated. The two elements of concept validity were convergent validity and discriminant validity. According to Hair et al. (2010), convergent validity identified the degree of connection between two measurements of a

related construct. It demonstrated the relationship between two theoretically related constructs.

As shown in Table IV, the Cronbach's alpha coefficient for the constructs utilized in the analysis ranged from 0.89 to 0.97, exceeding the minimum requirement of 0.70 (Nunnally, 1978). The following are convergent validity touchstones: $CR > AVE$, composite reliability ($CR > 0.70$), and Average Variance Extracted ($AVE > 0.50$) (Hair et al., 2010). Table II shows that the AVE ranged from 0.552 to 0.827 while the CRs of the three constructions ranged from 0.872 to 0.926, demonstrating significant convergent validity.

According to Hair et al. (2010), discriminant validity establishes the distinction between two conceptually related ideas. It is a test to make sure there isn't a lot of variation among the factors that might have a relatively common source. It speaks of distinguishing one build from another. The discriminant validity is assessed using AVE. According to Hair et al. (2010), the construct correlation value should be less than the value of the AVE square root. Table IV bracket values show the square root of the AVE, indicating that the obtained results confirm the discriminant validity for all variables.

Model fit indicators have been analysed and validated using the given criteria to determine whether the model matches the data. First, the absolute fit indices were computed. These include the goodness-of-fit index (GFI), the modified GFI, the root-mean-square residual (RMR), and the ratio of chi-square fit statistics to degree of freedom (CMIN/df) (RMSEA). Absolute fit indices assess how well a previous model fits the data or does so (McDonald and Ho, 2002). Second, there aren't many relative fit indices available, such as the Tucker-Lewis, normed, and comparative fit indices (CFI) (TLI). The chi-square from the proposed model is combined with one from a "baseline" model to provide relative fit indices. They are also known as incremental fit indices (KA, 1993; McDonald and Ho, 2002) and comparative fit indices (Bentler, 1990).

B. Structural Model

Utilising the greatest likelihood estimation discrepancy, the offered hypothesis has been evaluated. The study hypothesis has been put to test using three metrics: the regression coefficient (β), the degree of effectiveness (p -value 0.05), and the critical ratio ($CR > 1.96$). The theories have either been approved or rejected based on the criteria given in table V.

Four hypotheses, with the exception of hypothesis H4, show significant results, according to Table V's AMOS output data. If the t -value $>$ t table (1.96) and 0.05, then decision-making is significant.

The test results at H1 show that perceptions of a



TABLE IV. Measurement Model Results

Construct	Indicators	Loadings	Cronbach's alpha	CR	AVE
Decision to shop grocery online with Chatbots	DSC1	0.67	0.733	0.872	0.552
	DSC2	0.57			
	DSC3	0.74			
	DSC4	0.79			
	DSC5	0.80			
	DSC6	0.76			
Attitude to shop grocery online with chatbots	ASC1	0.86	0.881	0.914	0.813
	ASC2	0.57			
	ASC3	0.74			
	ASC4	0.79			
	ASC5	0.80			
Perceived usefulness of chatbots in online grocery shopping	PUC1	0.94	0.731	0.926	0.827
	PUC2	0.95			
	PUC3	0.92			
	PUC4	0.92			
	PUC5	0.91			
Perceived Ease of Use of chatbots in online grocery shopping	PEC1	0.88	0.891	0.993	0.719
	PEC2	0.71			
	PEC3	0.77			
	PEC4	0.75			
	PEC5	0.83			
	PEC6	0.78			
Trust to shop online grocery with chatbots	TSC1	0.81	0.817	0.714	0.815
	TSC2	0.80			
	TSC3	0.76			
	TSC4	0.79			
	TSC5	0.73			
	TSC6	0.74			

TABLE V. Hypothesis Status

Hypothesis	Slf 1	t-value	Conclusion
PUC < ASC	0.45	4.7	Supported
PEC < ASC	0.43	5.5	Supported
TSC < ASC	0.51	6.2	Supported
TSC < DSC	0.00	0.6	Not-supported
ASC < DSC	1.1	9.5	Supported

chatbot's usefulness in online grocery retailing have a positive and significant impact on attitudes towards using chatbots for online shopping. In contrast to table 1.96, the output value has a larger t-value of 4.8 and a smaller correlation coefficient between consumer decisions and trust in chatbots of 0.40 less than 0.05. Next to H2, which claims that perceptions of chatbot usability have a positive and significant impact on consumers' attitudes towards online chatbot shopping. While the size of the correlation coefficient between trust and consumer decisions is smaller than that of 0.05 at 0.40, the output value's t-value is higher than that of table 1.96 at 5.6. Contrarily, H3 shows that Perceived Trust has a favourable and significant impact on Attitude Towards Online Shopping.

When compared to table 1.96, the output value of t-value 6.5 is higher, and the correlation coefficient between trust and customer decisions is 0.50. For individuals who do not significantly contribute to hypothesis H5, which claims that one's mindset has a little but beneficial influence on whether or not they shop online. Higher than 0.05. Perceived trust, according to Hypothesis H4, has a negligible and minor impact on consumers' decisions to shop online. With the correlation coefficient between customer decisions and trust being 0.00 less than 0.05 and the output value t-value 0.6 being less than table 1.96, correspondingly.

C. Supporting Theory: Technology Acceptance Models

In predicting users' adoption of AI-driven personalization in digital news platforms, the authors developed an integrative model using the technology acceptance model (TAM) and the perceived contingency model (Lim and Zhang, 2022) [29]. They were used as distance learning for students across the country during the COVID-19 pandemic. The authors (Sulayman., et al.) [30] determine whether students' willingness to use e-learning platforms varies by gender and age group. Theoretically and practically not only in retail but also in healthcare, artificial intelligence (AI) is being increasingly utilised. In this



context, AI-powered chatbots can function as automated conversational agents capable of promoting health, disseminating information, and potentially influencing behavior change. Exploring the motivation to use health chatbots is necessary for predicting adoption; the study conducted by (Nadarzynski et al., 2019) [27] investigated the acceptability of patients willing to interact with AI-driven health chatbots.

Accessing patients' social needs in emergency departments is a critical challenge. However, most emergency departments do not have extra personnel to administer screeners, and without personnel administration, response rates are low, particularly for patients with low health literacy. To help patients with low health literacy, a chatbot named HarborBot assists in the social needs screening of the patients. (Kocielnik et al., 2019). [31] [32]. The COVID-19 pandemic presented an unexpected challenge to the hospitality industry. This study presents its novelty by indicating the customers outlook to use chatbot while online grocery retailing. As mentioned above, chatbot's utility is being investigated in in healthcare domain. Hence this study aims to fill the gap by investigating the utility of chatbots by the Indian customers in online grocery retailing.

5. DISCUSSIONS

It has been discovered that chatbots allow some consumers to share their unpleasant questions, hence facilitating access to expert in e-retail services. Even though they are perceived as a convenient and anonymous method for pity minor concerns. Chatbots are less acceptable to some users due to empathy [21] [33] [34] and a professional human approach. According to the participants in the survey they would like to use the chatbot application to gather general e-retail information on goods rather than to findings specialist service advice. A positive attitude toward using chatbots in the e-retail sector leads to customers' curiosity [35] [36] to use new technologies that could improve customer journey. Those who disliked having conversations with chatbots wanted to address their problem and demands with a salesperson face-to-face were also less inclined to embrace chatbots. Although most participants approved of these new services, the study's authors believe that AI apprehension among respondents will have a detrimental impact on the engagement and effectiveness of AI technology. As a result, the customer's perspective must be considered when designing AI-enabled [24] [37] [38] retail services: past researchers and their theoretical frameworks on the acceptability of innovative initiatives in retail support these findings. The ambiguous position of 'artificial,' which has negative and 'inferior-to-natural' connotations, has already been stated by Laufer as a threat to AI systems' social acceptability.

The Diffusion of Innovation theories accepts novel

technologies requiring widespread awareness, understanding, and application [39] [40]. According to the theoretical framework the burden of interacting with the intervention, ethical repercussions, and poor user experiences likely induce hesitation or failure. As a result, concerns about accuracy, reliability, privacy, and a perceived lack of empathy are likely to interfere with AI adoption in the retail sector. [41] [42] [43] User-centered approaches necessitate a detailed examination of consumer awareness, comprehension, and motivation to employ novel retail initiatives. Personal agency, intervention content, quality, and user experience, particularly the interaction and perceived support, must be studied and optimized for best adoption. It's important to highlight that users regarded retail chatbots as having a variety of benefits, including anonymity, convenience, and quicker access to relevant information [44] [45].

Previous research has found that people are inclined to disclose emotional and factual information with a chatbot as they are with a real friend. In encounters with chatbots and humans, [46] [47] [48] perceived comprehension, disclosure proximity, and cognitive reappraisal were similar, suggesting people interact with chatbots in the same way they interact with people psychologically. A few participants in information about goods and services emphasize the supposed anonymity. Simultaneously, the preferences for specific chatbot use in retail environments must be investigated further. [48] [49] The readiness to utilize chatbots in specific e-retail segments and community-based populations is correlated with user-perceived IT skills. This research has several ramifications.

No AI-powered e-retail chatbot should be deployed without extensive testing to address customer concerns and remove potential roadblocks. Many participants stated face-to-face connection is preferred, hence e-retail chatbots should be used as a complement rather than a professional e-retail salesperson. While some users regarded chatbots as a decline in service quality.

The findings and the study's results suggest that users are willing to use AI-chatbot in e-retail to smooth customer journeys and engagement. The study's findings are similar to the previous studies [34] [50] [51]. The new-age customers want instant solutions to their problems and instant interaction. Users should be reassured about the human qualities of AI systems created to improve the e-retail experience. The customer is reluctant to use AI, due to cybersecurity issues. The study's findings suggest that generation z is willing to use chatbots in online retailing compared to elderly people. The younger generation is busy in their work-life hence shopping of goods and service rendering becomes easy with the 24 × 7 availability of chatbot services. More study is needed to properly define and operationalize this idea to have a comprehensive grasp [52] [53] of customer



motives to engage with AI systems. Given the significant investment in AI research and development in e-retail, which is only motivated by cost-effectiveness. Finally, as AI chatbot services become more widely used in e-retail, service consumers' motivation, and participation will rise, which will help maximise the advantages of new technologies. Designers should employ theory-based user-centered methodologies to provide effective and ethical services by resolving user issues and closing the gap between consumer and brand awareness of customer contact demands. This study is a novel approach to help the markets, retailers, and managers to understand that consumers find it helpful and accept using chatbots in retailing [33].

Incorporating virality into the chatbot is necessary because they store sensitive customer information such as their residential address, social security number, credit card information, etc. Thus, retailers must first meet the users' needs for an effective strategy based on blockchain technology and highly secure passcodes in the form of biometric and retain scans. Second, retailers must employ secure cloud computing techniques based on self-learning algorithms such as Markov Chains, Long Short Term Memory (LSTM), and Natural Language Processing (NLP).

6. CONCLUSION AND FURTHER DIRECTIONS

At first glance, chatbots appear to provide numerous benefits for both businesses and consumers. The current study's findings suggest that it is vital to raise customer knowledge of chatbots and assess how well the supplied communications structure is acceptable and valuable to customers from a company's perspective. Rapid developments in AI text-based chatbot dialogues have extended their limits rather quickly than conventional shopping apps.

The findings and the study results suggest that users are willing to use AI-chatbot in e-retail to smooth customer journeys and engagement. The use of chatbots in e-retailing is new. Customers' intention to use this feature depends on the awareness level of customers and their acceptance of the new age shopping medium. Hence the retailer should build awareness among customers about the same. Our study has findings that are similar to the recent studies [51].

Furthermore, clients' privacy concerns are a problem when sharing personal information. Finally, chatbots are predicted to be the future of e-retail, as they are superior to traditional shopping apps that do not provide instant support. The stimuli were created to mimic real-life interactions with e-retail businesses, with users interacting with a chatbot [53] [54] [55] [56]. Future research could use live feed to improve study validity for participant engagement. Another interactional chatbot should be investigated further in future investigations. Future research

should also examine whether outcomes change among age groups that have never used a chatbot [57] [58].

REFERENCES

- [1] D. Baier, A. Rese, M. Röglinger, D. Baier, A. Rese, and M. Röglinger, "Conversational user interfaces for online shops? a categorization of use cases." in *ICIS*, 2018.
- [2] "Perspective on retail and consumer goods," https://www.mckinsey.com/-/media/mckinsey/industries/retail/our%20insights/perspectives%20on%20retail%20and%20consumer%20goods%20number%208/perspectives-on-retail-and-consumer-goods_issue-8.pdf, [Accessed 05-Jun-2023].
- [3] A. Kerly, P. Hall, and S. Bull, "Bringing chatbots into education: Towards natural language negotiation of open learner models," *Knowledge-based systems*, vol. 20, no. 2, pp. 177–185, 2007.
- [4] R. Dale, "The return of the chatbots," *Natural Language Engineering*, vol. 22, no. 5, pp. 811–817, 2016.
- [5] M. N. Huhns and M. P. Singh, "Conversational agents," *IEEE Internet Computing*, vol. 1, no. 2, p. 73, 1997.
- [6] P. Gentsch and P. Gentsch, "Conversational ai: how (chat) bots will reshape the digital experience," *AI in Marketing, Sales and Service: How Marketers without a Data Science Degree can use AI, Big Data and Bots*, pp. 81–125, 2019.
- [7] M. Song, X. Xing, Y. Duan, J. Cohen, and J. Mou, "Will artificial intelligence replace human customer service? the impact of communication quality and privacy risks on adoption intention," *Journal of Retailing and Consumer Services*, vol. 66, p. 102900, 2022.
- [8] Z. Wang and Y. Xie, "Authentic leadership and employees' emotional labour in the hospitality industry," *International Journal of Contemporary Hospitality Management*, 2020.
- [9] Y. Cheng and H. Jiang, "Customer-brand relationship in the era of artificial intelligence: understanding the role of chatbot marketing efforts," *Journal of Product & Brand Management*, vol. 31, no. 2, pp. 252–264, 2022.
- [10] J. Jiménez-Barreto, N. Rubio, and S. Molinillo, "'find a flight for me, oscar!' motivational customer experiences with chatbots," *International Journal of Contemporary Hospitality Management*, vol. 33, no. 11, pp. 3860–3882, 2021.
- [11] H. Mydyti and A. Kadriu, "The impact of chatbots in driving digital transformation," *International Journal of E-Services and Mobile Applications (IJESMA)*, vol. 13, no. 4, pp. 88–104, 2021.
- [12] A. J. Kull, M. Romero, and L. Monahan, "How may i help you? driving brand engagement through the warmth of an initial chatbot message," *Journal of business research*, vol. 135, pp. 840–850, 2021.
- [13] M. A. Selamat and N. A. Windasari, "Chatbot for smes: Integrating customer and business owner perspectives," *Technology in Society*, vol. 66, p. 101685, 2021.
- [14] A. Reijo, "Mapping chatbot types and features: case rescue services," 2022.



- [15] S. Borau, T. Otterbring, S. Laporte, and S. Fosso Wamba, "The most human bot: Female gendering increases humanness perceptions of bots and acceptance of ai," *Psychology & Marketing*, vol. 38, no. 7, pp. 1052–1068, 2021.
- [16] G. Pizzi, D. Scarpi, and E. Pantano, "Artificial intelligence and the new forms of interaction: Who has the control when interacting with a chatbot?" *Journal of Business Research*, vol. 129, pp. 878–890, 2021.
- [17] G. Murtarelli, A. Gregory, and S. Romenti, "A conversation-based perspective for shaping ethical human–machine interactions: The particular challenge of chatbots," *Journal of Business Research*, vol. 129, pp. 927–935, 2021.
- [18] R. Roy and V. Naidoo, "Enhancing chatbot effectiveness: The role of anthropomorphic conversational styles and time orientation," *Journal of Business Research*, vol. 126, pp. 23–34, 2021.
- [19] R. B. Mostafa and T. Kasamani, "Antecedents and consequences of chatbot initial trust," *European Journal of Marketing*, vol. 56, no. 6, pp. 1748–1771, 2022.
- [20] E. Moriuchi, V. M. Landers, D. Colton, and N. Hair, "Engagement with chatbots versus augmented reality interactive technology in e-commerce," *Journal of Strategic Marketing*, vol. 29, no. 5, pp. 375–389, 2021.
- [21] "Facebook Messenger - Anzahl der verfügbaren Chatbots 2018 — Statista — de.statista.com," <https://de.statista.com/statistik/daten/studie/662144/umfrage/anzahl-der-verfuegbaren-chatbots-fuer-den-facebook-messenger/>, [Accessed 05-Jun-2023].
- [22] E. Forrest and B. Hoanca, "Artificial intelligence: Marketing's game changer," *Trends and innovations in marketing information systems*, pp. 45–64, 2015.
- [23] L. Rajaobelina and L. Ricard, "Classifying potential users of live chat services and chatbots," *Journal of Financial Services Marketing*, vol. 26, pp. 81–94, 2021.
- [24] C. M. Marinchak, E. Forrest, and B. Hoanca, "Artificial intelligence: Redefining marketing management and the customer experience," *International Journal of E-Entrepreneurship and Innovation (IJEEI)*, vol. 8, no. 2, pp. 14–24, 2018.
- [25] K. Backhaus and A. Awan, "The paradigm shift in customer analysis: marketing or it-driven?" *The Art of Structuring: Bridging the Gap Between Information Systems Research and Practice*, pp. 337–349, 2019.
- [26] A. Przegalinska, L. Ciechanowski, A. Stroz, P. Gloor, and G. Mazurek, "In bot we trust: A new methodology of chatbot performance measures," *Business Horizons*, vol. 62, no. 6, pp. 785–797, 2019.
- [27] J. S. Lim and J. Zhang, "Adoption of ai-driven personalization in digital news platforms: An integrative model of technology acceptance and perceived contingency," *Technology in Society*, vol. 69, p. 101965, 2022.
- [28] A. Rai, "Explainable ai: From black box to glass box," *Journal of the Academy of Marketing Science*, vol. 48, pp. 137–141, 2020.
- [29] O. Sulaymani, A. R. Pratama, M. Alshaikh, and A. Alammary, "The effects of previous experience and self efficacy on the acceptance of e-learning platforms among younger students in saudi arabia," *Contemporary Educational Technology*, vol. 14, no. 2, p. ep349, 2022.
- [30] R. Kocielnik, E. Agapie, A. Argyle, D. T. Hsieh, K. Yadav, B. Taira, and G. Hsieh, "Harborbot: a chatbot for social needs screening," in *AMIA Annual Symposium Proceedings*, vol. 2019. American Medical Informatics Association, 2019, p. 552.
- [31] A. Gupta and D. Sharma, "Investigation on customers' attitude towards chatbots in banking industry of india," *Recent Developments in Engineering Research Vol. 12*, pp. 129–137, 2021.
- [32] V. Koumaras, A. Foteas, A. Papaioannou, M. Kapari, C. Sakkas, and H. Koumaras, "5g performance testing of mobile chatbot applications," in *2018 IEEE 23rd international workshop on computer aided modeling and Design of Communication Links and Networks (CAMAD)*. IEEE, 2018, pp. 1–6.
- [33] D. L. Kasilingam, "Understanding the attitude and intention to use smartphone chatbots for shopping," *Technology in Society*, vol. 62, p. 101280, 2020.
- [34] L. Rajaobelina, S. Prom Tep, M. Arcand, and L. Ricard, "Creepiness: Its antecedents and impact on loyalty when interacting with a chatbot," *Psychology & Marketing*, vol. 38, no. 12, pp. 2339–2356, 2021.
- [35] J. Copulsky, "Do conversational platforms represent the next big digital marketing opportunity?" *Applied Marketing Analytics*, vol. 4, no. 4, pp. 311–316, 2019.
- [36] J. Rana, R. Jain, and K. Santosh, "Automation and ai-enabled customer journey: A bibliometric analysis," *Vision*, p. 09722629221149854, 2023.
- [37] S. Sands, C. Ferraro, C. Campbell, and H.-Y. Tsao, "Managing the human–chatbot divide: how service scripts influence service experience," *Journal of Service Management*, vol. 32, no. 2, pp. 246–264, 2021.
- [38] Y. S. Cheong, C. S. Seah, Y. X. Loh, and L. H. Loh, "Artificial intelligence (ai) in the food and beverage industry: improves the customer experience," in *2021 2nd International Conference on Artificial Intelligence and Data Sciences (AiDAS)*. IEEE, 2021, pp. 1–6.
- [39] L. Gaur, J. Rana, and N. Z. Jhanjhi, "Digital twin and healthcare research agenda and bibliometric analysis," *Digital Twins and Healthcare: Trends, Techniques, and Challenges*, pp. 1–19, 2023.
- [40] L. J. Cronbach, "Coefficient alpha and the internal structure of tests," *psychometrika*, vol. 16, no. 3, pp. 297–334, 1951.
- [41] N. Ameen, A. Tarhini, A. Reppel, and A. Anand, "Customer experiences in the age of artificial intelligence," *Computers in Human Behavior*, vol. 114, p. 106548, 2021.
- [42] C. Yen and M.-C. Chiang, "Trust me, if you can: a study on the factors that influence consumers' purchase intention triggered by chatbots based on brain image evidence and self-reported assessments," *Behaviour & Information Technology*, vol. 40, no. 11, pp. 1177–1194, 2021.
- [43] D. A. Nasreen, A. Sethuram, S. Iyengar *et al.*, "Deep learning

based object recognition in video sequences," *International Journal Of Computing and Digital System*, 2021.

- [44] I. Idrissi, M. Mostafa Azizi, and O. Moussaoui, "A lightweight optimized deep learning-based host-intrusion detection system deployed on the edge for iot," *International Journal of Computing and Digital System*, 2021.
- [45] S. Begampure and P. Jadhav, "Intelligent video analytics for human action detection: a deep learning approach with transfer learning," *International Journal of Computing and Digital System*, 2021.
- [46] K. N. Lemon and P. C. Verhoef, "Understanding customer experience throughout the customer journey," *Journal of marketing*, vol. 80, no. 6, pp. 69–96, 2016.
- [47] S. Hossain, S. Sultana Mitu, S. Afrin, and S. Akhter, "A real-time machine learning-based person recognition system with ear biometrics," *International Journal Of Computing and Digital System*, 2021.
- [48] H. Hari, R. Iyer, and B. Sampat, "Customer brand engagement through chatbots on bank websites—examining the antecedents and consequences," *International Journal of Human-Computer Interaction*, vol. 38, no. 13, pp. 1212–1227, 2022.
- [49] M. Almalki, "Perceived utilities of covid-19 related chatbots in saudi arabia: A cross-sectional study," *Acta Informatica Medica*, vol. 28, no. 3, p. 218, 2020.
- [50] J. Rana, L. Gaur, G. Singh, U. Awan, and M. I. Rasheed, "Reinforcing customer journey through artificial intelligence: a review and research agenda," *International Journal of Emerging Markets*, vol. 17, no. 7, pp. 1738–1758, 2021.
- [51] I. Waris, R. Ali, A. Nayyar, M. Baz, R. Liu, and I. Hameed, "An empirical evaluation of customers' adoption of drone food delivery services: An extended technology acceptance model," *Sustainability*, vol. 14, no. 5, p. 2922, 2022.
- [52] J. P. Marshall, R. Sorenson, K. Brigham, E. Wieling, A. Reifman, and R. S. Wampler, "The paradox for the family firm ceo: Owner age relationship to succession-related processes and plans," *Journal of business venturing*, vol. 21, no. 3, pp. 348–368, 2006.
- [53] J. Lu, J. E. Yao, and C.-S. Yu, "Personal innovativeness, social influences and adoption of wireless internet services via mobile technology," *The journal of strategic Information Systems*, vol. 14, no. 3, pp. 245–268, 2005.
- [54] J. Sun and T. Chi, "Key factors influencing the adoption of apparel mobile commerce: an empirical study of chinese consumers," *The journal of the Textile Institute*, vol. 109, no. 6, pp. 785–797, 2018.
- [55] J. Hwang, H. Kim, and W. Kim, "Investigating motivated consumer innovativeness in the context of drone food delivery services," *Journal of Hospitality and Tourism Management*, vol. 38, pp. 102–110, 2019.
- [56] I. Etikan, S. A. Musa, R. S. Alkassim *et al.*, "Comparison of convenience sampling and purposive sampling," *American journal of theoretical and applied statistics*, vol. 5, no. 1, pp. 1–4, 2016.
- [57] R. Baker, J. M. Brick, N. A. Bates, M. Battaglia, M. P. Couper,

J. A. Dever, K. J. Gile, and R. Tourangeau, "Summary report of the aapor task force on non-probability sampling," *Journal of survey statistics and methodology*, vol. 1, no. 2, pp. 90–143, 2013.

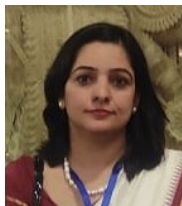
- [58] R. De Cicco, S. C. Silva, and F. R. Alparone, "Millennials' attitude toward chatbots: an experimental study in a social relationship perspective," *International Journal of Retail & Distribution Management*, vol. 48, no. 11, pp. 1213–1233, 2020.



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