

# Factors affecting consumer's purchase intention of chatbot commerce in Thailand

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## ABSTRACT

This study examines the factors influencing consumer's purchase intention of chatbot commerce in Thailand. The elements of chatbot include the anthropomorphism factor, social presence factor, and perceived enjoyment factor, whereas the outcome variable is purchase intention. This study employed a quantitative approach to gathering data for statistical analysis through stratified random sampling in a total of 388 completed questionnaires were for data analysis. The conceptual framework was examined with the multiple regression analysis (MRA). Findings reveal that the anthropomorphism factor and the perceived enjoyment factor are significant predictors of purchase intention. But social preference factor is not. In future research, comprehensive coverage of chatbot commerce in several online shopping categories is recommended to obtain an extensive result.

**Keywords:** factors, purchase intention, chatbot commerce, consumer, digital marketing

## 1. INTRODUCTION

### 1.1 Background of the Research

Chatbots are a type of technology that has been around for a long time. "Chatbot" is an automated chat agent program with a user interface that allows humans to talk in natural language (Adamopoulou & Moussiades, 2020). It communicates in human language via text or audible communication with people or other chatbots using Natural Language Processing (NLP) and sentiment analysis (Khanna et al., 2015). Chatbots are beneficial in a variety of ways, in addition to their entertaining impersonation of human-to-human conversation. in the fields of education, business, and e-commerce health and recreation (Shawar & Atwell, 2007). Searching for static content in a frequently asked questions (FAQ) list is less user-friendly and exciting than using a chatbot. When communicating with chatbots, they provide users with convenient and efficient help and more intriguing responses (Brandtzaeg & Følstad, 2017). Artificial intelligence (AI) advancements improve chatbots' ability to resemble human agents in communication. On the other hand, human-chatbot communication differs from a human-human conversation in terms of

content and quality. A discussion between a human and a chatbot can take a long time. People frequently utilize concise language with limited vocabulary, if not outright offensive language (Hill et al., 2015). Depending on whether or whether the conversational partner discloses information, human–chatbot interactions alter. Chatbots are four times more productive than inexperienced salespeople, and their abilities rival those of professional consumer buying employees (Luo et al., 2019).

## **1.2 Problem Statement**

Despite the current popularity of chatbots, anyone is unaware of how humans communicate with chatbots, particularly from a language standpoint. Chatbots have focused on developing or improving their ability to interpret and respond meaningfully to human language and look at a chatbot's ability to correctly react when confronted with standard computer-mediated communication (CMC) features like abbreviations and multiple speakers overlapping utterances (Hill et al., 2015). Customers perceive that robot anthropomorphism influences their purchasing decisions. Humanoid robots greatly influenced users' trust and perceived enjoyment with human voice-based communication, which increased their intentions to utilize the humanoid as their aid (Han, 2021). Conventional customer service chatbots are based on human dialogue, yet significant data scale and privacy issues. Distinct from its existing counterparts, take advantage of in-page product descriptions and user-generated content from e-commerce websites. It is more practical and cost-effective when answering repetitive questions, freeing up human support staff to answer much higher value questions. (Cui et al., 2017). Chatbot-based conversational commerce allows buyers to do online shopping by conversing with the chatbot through messaging applications has been growing in the e-commerce industry. The interaction design of the existing conversational commerce still lacks in various areas (Pricilla et al., 2018). However, people's subjective perceptions believe that revealed chatbots are less informed and emotionally intelligent. Customers become irritated and buy fewer things when they find they are conversing with a chatbot during a conversation. As a result, a mechanism for delayed chatbot disclosure was used (Luo et al., 2019). Some previous studies confirmed anthropomorphism plays a positive role in shaping consumers' intentions to purchase through chatbot commerce (Han, 2020). Due to the distant nature of an online environment, feelings of social presence have been quite hard to convey. The social presence of chatbots seems an excellent instrument to address the lack of interpersonal interaction and exhibit social presence feelings (Schurink, 2019).

Not many studies identify the main factors of chatbots that may impact customers' purchase intention. Thus, the study examines the influencing factors that affect the purchase intention of Thailand's chatbot commerce.

## **1.3 Research Objective**

To study the factors that influence the purchase intention of chatbot commerce consumers.

## **1.4 Research Question**

What are the main factors affecting consumer's purchase intention of chatbot commerce in Thailand?

# **2. LITERATURE REVIEW**

## **2.1 Chatbot Commerce**

Chatbots, also known as virtual assistants, virtual agents, and conversational agents, are text or voice-based computer programs that mimic human conversation (Han, 2021). Chatbots cannot

replace the complexity of human connection, both cognitive and emotional. Still, they can give a cost-effective approach to answer most routine reference requests and link users to the proper service (Vincze, 2017). Chatbots had a positive influence on extrinsic values of customer experience, whereas the responsiveness of the chatbot had a positive impact on intrinsic values of customer experience. Furthermore, online customer experience had a positive relationship with customer satisfaction, and personality influenced the relationship between the usability of the chatbot and extrinsic values of customer experience (Chen et al., 2021). Media richness and social presence in chatbot commerce positively influence trust and intention to reuse through social attraction. Instant messaging (IM) users scored significantly higher in terms of communication experience, perceived attractiveness of the conversational agent, and trust than chatbot users. The users' trust in conversational agents is primarily determined by the perceived attractiveness of the conversational agent (Hill et al., 2015). Thus, the element factors of chatbots that may impact on customers' purchase intention include anthropomorphism, social presence, and perceived enjoyment.

### **2.1.1 Anthropomorphism Factor**

Anthropomorphism tends to instill human-like features, motivations, intents, or feelings into nonhuman beings' actual or imagined conduct (Epley et al., 2007). Brand anthropomorphism is one of the most extensively employed marketing methods. Multiple studies showed that anthropomorphism has a favorable effect on customer brand attitudes (Zhang et al., 2020). When social-connectedness or effectivity motives are engaged, anthropomorphism boosts consumers' attraction to a brand (Puzakova & Aggarwal, 2018). The consumer's perception of the brand's quality and anthropomorphism are critical antecedents of brand love. The predictive effectiveness of anthropomorphism varies between evaluative and relationship-specific components of brand choice (Rauschnabel & Ahuvia, 2014). Thus, it is essential to study the anthropomorphism factor significantly influencing the purchase intention of chatbot commerce consumers to achieve effectiveness in digital marketing strategy.

### **2.1.2 Social Presence Factor**

The consumer's knowledge of a social presence during the purchase selection and commitment process, whether actual or imagined, is a motivating factor in causing humiliation (Dahl et al., 2001). The mood has a significant impact on perceived benefit and buying intention in consumer purchase behavior. There is a relationship between social presence, perceived advantage, and purchase intention (Zhang et al., 2012). Online purchases because of social commerce are on the rise. Individuals' buying inclinations have increased because of increased social exchange activities on social networking sites. Since various online selling platforms raise worries about authenticity, the seller's ability to build trust is an essential factor to consider (Khwaja et al., 2019). Many online shops lack emotional and social appeal, as well as genuine warmth. The increased social presence of a company through socially detailed descriptions and photographs will positively impact attitudinal antecedents to purchase some products, such as clothes (Hassanein & Head, 2005). The trust in social commerce sites and trust in site members are both drivers of buy intent. It is activated by the quality of consumer-generated content (perceived informativeness and perceived persuasiveness). Furthermore, customers' social presence has a moderating effect on the relationship between site member trust and purchase intention (Liu et al., 2019). The chatbot customer's perception of social presence impacts purchase intention (Han, 2021). Thus, it is essential to study the social presence factor significantly influencing purchase intention of chatbot commerce consumers to achieve effectiveness in digital marketing strategy.

### **2.1.3 Perceived Enjoyment Factor**

Gamification has a positive impact on the business intelligence (BI) of young female consumers. Through social contact and perceived enjoyment, gamification has a positive and indirect effect on business intelligence. Although gamification has an enormous impact on perceived usefulness, it has little impact on business intelligence. The buying intention is directly linked to the business intelligence of utilizing an online shopping website. Online shops must provide a fun and participatory experience for female customers to ensure long-lasting gamification's influence (Raman, 2020). The subjective norm, perceived ease of use, utility, enjoyment, and views about mobile communication and mobile commerce were essential predictors of mobile technology usage intention for shopping. One's attitude about mobile communication influenced one's attitude toward mobile business, which affected one's use of mobile technology for buying (Kim et al., 2009). Two groups of suppliers have a lot in common and many differences. Both early and advanced adopters place a premium on service provider confidence. The first group places a greater emphasis on perceived ease of use and fun in stimulating mobile commerce adoption, while the second group places less emphasis on perceived utility. The latter group reported that ease of use and enjoyment have a substantially lower impact, but perceived usefulness has a significantly higher impact (Pipitwanichakarn & Wongtada, 2019). The favorable effect of website image interactivity-technology (IIT) on attitudes and behavioral intentions toward online retailers reveals that technology acceptance model (TAM) factors can assist explain how image interactivity technology (IIT) affects consumer responses. Consumer attitude and behavioral intention toward an online shop were considerably improved by all three dimensions of TAM in perceived usefulness, ease of use, and enjoyment. Hedonic shopping orientation influenced one feature of TAM in enjoyment feature, while helpful shopping orientation influenced two aspects of TAM in perceived usefulness and ease of use (Lee et al., 2006). The chatbot customer's perception of enjoyment significantly impacts purchase intention (Han, 2021). Thus, it is essential to study the perceived enjoyment factor significantly influencing the purchase intention of chatbot commerce consumers to achieve effectiveness in digital marketing strategy.

## **2.2 Purchase Intention**

Purchase intention is a significant part of behavioral intentions. It can be denoted as individuals' relative strength to execute a specific behavior. The factors influencing the purchase intention of the products are functional value, social value, and emotional value. (Amin & Tarun, 2020) The indicators of purchase intention include the willingness (intend) to purchase the product in the future and the customer's gladness to buy the product further. Purchase intention is the probability that the consumer will purchase the product or services regarding the antecedents that drive and stimulate consumers to buy (Abou Ali et al., 2020) and process need recognition (Nurittamont, 2021). Daniell (2021) concluded that the desire to buy and customer recommendation could serve as an indicator for the future purchase intention of customers, and customer satisfaction to product (Nurittamont, 2021).

In this study, purchase intention refers to repurchase intention in the future of customers and the willingness to recommend their friends use chatbots to purchase products in the future. The indicators of purchase intention are the willingness to use chatbots to buy products in the future and the willingness to recommend friends use chatbots to purchase products based on Yen & Chiang (2020).

## **2.3 Research Hypotheses**

- H1: The anthropomorphism factor significantly influencing purchase intention of Chatbot commerce consumers*
- H2: The social presence factor significantly influencing purchase intention of Chatbot commerce consumers*
- H3: The perceived enjoyment factor significantly influencing purchase intention of Chatbot commerce consumers*

The link between the independent variables (anthropomorphism factor, social presence factor, and perceived enjoyment factor) and purchase intention was based on the study of Shawar & Atwell (2007), Khanna et al. (2015), Zarouali et al. (2018), Araujo (2018), Van den Broeck et al. (2019), Adamopoulou & Moussiades (2020), Kasilingam (2020), Chung et al. (2020), Van Pinxteren (2020) and Chaves et al. (2021).

## 2.4 Conceptual Framework

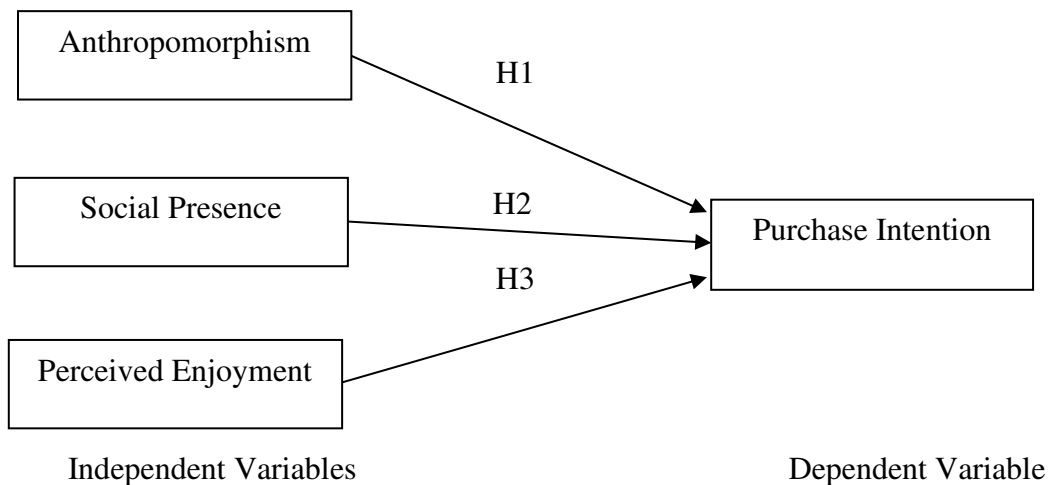


Figure 1. shows the Conceptual Framework of this Study.

## 3. RESEARCH METHODOLOGY

### 3.1 Population & Sample

The study's target population is an unknown number of Chatbot Commerce customers in Thailand. A standard survey usually has a confidence level of 95%. The required sample error 5% precision level is 95% with a minimum of 385 cases at  $p=0.5$  using stratified random sampling to collect data in Thailand. The sample in this study was 388 respondents from four regions: Northern, Eastern-Central, South-West, and Northeastern of Thailand.

### 3.2 Research Method

The data for this study were gathered through online closed-end questionnaires (Likert's rating scale). The researchers developed the questionnaire items based on previous research that had been validated. Measuring instruments were evaluated in terms of reliability and validity based on Zikmund (2003) In this study, all the variables were measured using a five-point Likert Scale,

which was classified as follows: strongly agree with a score of 5, agree with a score of 4, neutral with a score of 3, disagree with a score of 2, and strongly disagree with a score of 1. The questionnaire items for independent variables (the constructs of anthropomorphism, social presence, perceived enjoyment) were based on the study of Hidayanto et al. (2017), de Morais Watanabe (2020) and Ayuniyyah (2017). The questionnaire items for the purchase intention were based on the study of Yen & Chiang (2020). The demographics of the respondents were derived from the survey conducted by Pipitwanichakarn & Wongtada (2019) and Puttharak (2020).

### 3.3 Data Collection

The online questionnaires were distributed to the respondents and solicit their participation. Self-administered online survey was used to collect data from respondents who completed the questionnaires.

### 3.4 Data Analysis

The completed data set was coded and analyzed with multiple regression analysis (MRA). Descriptive statistics in terms of frequency and percentage were used to analyze the demographics of the respondents. The results of each variable and each questionnaire item were calculated using the mean and standard deviation analyses. The Cronbach's Alpha statistic determined the reliability of the research instrument. The factor analysis method is used to test for validity. Multiple regression analysis (MRA- inferential statistics) was used to analyze the data to confirm the model assumption statistically.

## 4. RESULTS

Table 1. shows the summarized loading factors, construct reliability. According to Parsian & Dunning (2009), the factor loadings and reliability should be over 0.7 following the recommendation.

Table 1. Factor loadings, Cronbach's Alpha (Internal Consistency)

Items	Factor Loading	Cronbach's Alpha
<b>Anthropomorphism (X1)</b>		0.878
1. Chatbots behave human-like	0.896	
2. Chatbots behave lifelike	0.913	
3. Chatbots behave naturally	0.885	
<b>Social Presence (X2)</b>		0.855
1. Using chatbots would make me feel as if I am communicating with someone.	0.819	
2. Using chatbots would make me feel as if I am in a room with someone.	0.924	
3. Using chatbots would make me feel as if I am present with someone.	0.895	
<b>Perceived Enjoyment (X3)</b>		0.903
1. Using Chatbots is fun	0.901	
2. Using Chatbots is exciting	0.922	
3. Using Chatbots is delightful	0.913	
4. Using Chatbots is enjoyable	0.903	

<b>Purchase Intention (Y)</b>		0.806
1. I would be willing to use chatbots to purchase products in the future.	0.916	
2. I would be willing to recommend my friends use chatbots to purchase products in the future.	0.916	

$$\text{Model 1: } Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

$$\text{PI} = 0.849 + 0.375X_1 + 0.017 X_2 + 0.435 X_3$$

Table2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.784a	.615	.612	.48856

Table 3. ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	146.123	3	48.708	204.065	.000b
Residual	91.656	384	.239		
Total	237.778	387			

a. Dependent Variable: PI b. Predictors: (Constant), Anthropomorphism, Social Presence and Perceived Enjoyment

Table 4. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.849	.136		6.252	.000
Anthropomorphism	.375	.049	.376	7.656	.000
Social Presence	.017	.054	.017	.304	.761
Perceived Enjoyment	.435	.047	.466	9.256	.000

a. Dependent Variable: PI b. Predictors: (Constant), Anthropomorphism, Social Presence and Perceived Enjoyment

A significant regression equation was found  $F(3, 384) = 204.065, p = 0.000 (p < 0.05)$ , with  $R^2 = 0.615$ . Respondents' predicted purchase intention in Chatbot Commerce was equal to  $0.849 + 0.375 \text{ anthropomorphism} + 0.017 \text{ social Presence} + 0.435 \text{ perceived enjoyment}$ .

Respondent's purchase intention via Chatbot Commerce increased 0.375 units for each unit of change in the anthropomorphism factor, 0.017 units for each unit of change in the social presence factor, 0.435 units for each unit of change in the perceived enjoyment factors. The anthropomorphism factor and the perceived enjoyment factor were significant predictors of

purchase intention. Sixty-six-point-five percent of the variance of purchase intention was explained by combining three factors ( $R^2 = 0.615$ ). If referring to the Coefficient, the perceived enjoyment factor had the most influence on purchase intention ( $B=0.435$ ), followed by the anthropomorphism factor ( $B=0.375$ ) and the social presence factor ( $B=0.017$ ), respectively. Individually, the anthropomorphism factor and the perceived enjoyment factor significantly influenced purchase (PI) at p-value 0.000. On the other hand, there was no influence of the social presence factor on purchase intention at a p-value of 0.761.

Table 5. Summary of hypothesis testing results.

Hypothesis	Results of the Significant	Action
H1: Anthropomorphism factor (AT) -> Purchase Intention (PI)	0.000	Accepted
H2: Social Presence factor (SP) -> Purchase Intention (PI)	0.761	Rejected
H3: Perceived Enjoyment factor (PE) -> Purchase Intention (PI)	0.000	Accepted
AT, SP, PE->PI	$R^2 = 0.615$	Accepted Anthropomorphism factor, social presence factor and perceived enjoyment factor can predict purchase intention of ready-to-eat food by about 61.5%

## 5. DISCUSSION

### 5.1 Discussion of the Research Finding

The hypotheses were tested and supported. The result showed that anthropomorphism and perceived enjoyment factor significantly influenced purchase intention for chatbot commerce in Thailand. But social presence did not become a significant factor. The results supported the previous studies of Hidayanto et al. (2017), de Morais Watanabe (2020) and Ayuniyyah (2017). The anthropomorphism factor is about the robots idealized the human body and the acknowledged mental similarities between the robots and humans, which entail artificial intelligence. However, Han (2021) confirmed that perceived social presence and enjoyment have a considerable impact. In this study, the anthropomorphism and perceived enjoyment factors significantly influenced purchase intention for chatbot commerce in Thailand, but not for the social presence.

### 5.2 Research Contribution

The findings supported the conceptual framework that the anthropomorphism and perceived enjoyment factors are significant predictors of customer purchase intention in chatbot commerce. The marketers could develop a digital marketing plan to suitable the digital era. Furthermore, the findings of the study can be applied to several sectors that employ the chatbot in their business model.

### 5.3 Conclusions



Chatbot commerce is a relatively new form of social marketing. The study examines whether customers purchase via chatbots regarding three main factors (anthropomorphism, social presence, and perceived enjoyment). The two main factors that could motivate customers to continue using the chatbots are anthropomorphism and perceived enjoyment. Consumer perceptions that the service purchases were influenced by messenger chatbots related to anthropomorphism and perceived enjoyment factors supported the previous studies. Only social presence is not an essential factor. It can be explained by when customers notice that messenger chatbots resemble actual people, they find the experience more engaging as if they are conversing with a person. As a result, the customers have a willingness to purchase the products or services further.

#### **5.4 Limitations and Recommendations**

The study focuses on factors affecting the purchase intention of chatbot commerce consumers in Thailand. Future studies could provide additional knowledge on other predictors by adding other relevant variables. The findings give more knowledge about factors affecting purchase intention in chatbot commerce. However, the mediating effect of customer satisfaction should be considered in further studies.

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