To Err is Human: Understanding customers' ambivalence towards chatbots

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Cite as:
Cao Xiaoxia, Ameen Nisreen, Hackley Chris (2023), To Err is Human: Understanding customers' ambivalence towards chatbots. *Proceedings of the European Marketing Academy*, 52nd, (114500)

Paper from the 52nd Annual EMAC Conference, Odense/Denmark, May 23-26, 2023

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Abstract

While positive experiences of interactions with chatbots have been reported, a high number of negative chatbot interactions and experience are also reported. This paper explores this apparent customer ambivalence toward chatbots through a qualitative approach using six focus groups with 25 participants in total. The study focuses mainly on chatbots provided by cosmetic retailers in China on online shopping platforms. This study finds that consumers' ambivalence towards chatbots emerges in different shopping stages, and refers to chatbots' problem-solving ability, chatbots' anthropomorphism and emotional recognition, and privacy and security issues of chatbot use. This study provides insights into consumers' ambivalence towards chatbots and how retailers can improve chatbot user experience. The findings also promote the development of the concepts of interaction between consumers and chatbots, and provide guidance for further research on human-robot interaction.

Keywords: *chatbots, online shopping experience, consumer ambivalence*

Track: *Digital Marketing & Social Media*

1. Introduction

A chatbot is "A computer program designed to simulate conversation with human users, especially over the internet" (Lexico, 2021). It communicates in human language with humans or other chatbots via text or oral speech by using Natural Language Processing (NLP) and sentiment analysis (Khanna et al., 2015; Adamopoulou and Moussiades, 2020). Recent literature also highlights some of the outstanding challenges that users often face when they use chatbots for various services. For example, Rese et al. (2020) explained that the use of chatbots is limited because of the issues related to the level of maturity of the technology. Han (2021) confirmed the positive effect of anthropomorphism on consumer-chatbot interactions in online shopping. Waheed et al. (2022) indicated that most chatbots users may be unknowingly exposed to poor privacy, security and anonymity guarantees by chatbots service provider. However, the existing literature has heavily focused on how to enable a positive customer-chatbot shopping experience. For example, Brandtzaeg and Følstad (2017) considered the key factors that motivate users to use chatbots include productivity, entertainment, social interaction and novelty. Shumanov and Johnson (2021, p. 1) state that "Consumer satisfaction with chatbots is mixed". There is a gap in research in terms of understanding consumers' mixed feelings or contradictory ideas about chatbots and their uses.

The main aim of this research is to explore customers' ambivalence towards chatbots in their shopping experience. We specifically focus on customers using chatbots offered by cosmetics brands in China through a qualitative study using focus groups. This study offers both theoretical contributions and managerial implications. First, this study addresses a gap in the existing literature on consumers' ambivalence towards chatbot use in the online shopping experience. It identifies various aspects of consumers' ambivalence when using chatbots. This study was built on the conceptual understanding of consumer ambivalence from Sipilä, Tarkiainen, and Sundqvist (2018), and seeks to provide a better understanding of consumers' ambivalence in human-chatbot interaction. Second, this study has managerial implications for retailers in China who provide chatbots and who wish to improve chatbot services.

2. Literature Review – The Challenges of Using Chatbots

Based on our analysis of the existing literature on human-chatbot interactions in the retail context, we identified four major challenges associated with these interactions. First,

immature technology. The most commonly problem in human-chatbot interaction is miscommunication, which is caused by chatbots' inability to maintain a consistent sense of context (Sheehan, Jin, and Gottlieb, 2020). Consumers are frustrated by chatbots misunderstanding questions, responding irrelevantly, and integrating poorly with human service agents (Shumanov and Johnson, 2021). Second, *anthropomorphism.* Sheehan et al. (2020, p. 14) state that "Anthropomorphism has been a key variable in chatbot development for decades". However, Nowak and Rauh (2008) believe a significantly high level of anthropomorphism may also bring undesired effects. On the one hand, consumers may have excessive expectations, which will be challenging to fulfil, thus the evaluation of consumers' satisfaction may be decreased (Sheehan et al., 2020). On the other hand, some consumers are uneasy with human-like chatbots, a phenomenon Przegalinska et al. (2019) call the uncanny valley hypothesis. Third, *emotions.* As digital assistants, chatbots have transformed from merely providing information to being emotionally intelligent because of the improvement of AI technologies. Some scholars (e.g., Xiao et al., 2020) have highlighted the importance of integrating emotional intelligence into chatbots. Lv et al. (2021) found that the cuteness of AI assistants can trigger positive emotions and nurturing instincts in customers, which will increase their intolerance for service failures. Fourth, *data security and personal privacy.* By constantly interacting with customers, chatbots collect and manage large amounts of potentially sensitive personal data and information, such as those related to demographics, behavioural preferences, income and personal information (Murtarelli, Gregory, and Romenti, 2021). Thus, data security and personal privacy are significant issues for both chatbots providers and users (Adamopoulou and Moussiades, 2020; Rese et al., 2020).

3. Theoretical Background – Consumer Ambivalence

Ambivalence is "a strength-related moderator between attitude and behavior" (Olsen, Wilcox, and Olsson, 2005, p. 248). In 1997, Otnes, Lowrey, and Shrum extended the concept of ambivalence in the field of consumer behaviour, that is, the emotional outcome of consumer behaviour (Otnes et al., 1997). Consumer ambivalence, as Sipilä et al. (2018, p. 159) defined, is "a structural property of any evaluative psychological concept to which two valences can be assigned; it occurs toward one clearly specified object during a consumption episode and within the internal and socio-cultural contexts of consumption". Furthermore, the concept of ambivalence has also been discussed in the context of human-robot relationships (e.g., Caudwell and Lacey, 2020). There is increasing research that

explores the positive and negative experiences of chatbots (e.g., Følstad and Brandtzaeg, 2020), but a research gap remains in terms of understanding consumers' ambivalence towards chatbot use.

4. Methodology

4.1. Research design

Due to the lack of existing literature on consumers' ambivalence towards chatbot use in the online shopping experience, the exploratory nature of this study dictated the focus group in order to capture interactive insights from users and generate rich data to contribute to the scientific understanding of this topic (Hennink, 2014). Focus groups have been used in previous research related to human-chatbot interaction (e.g., Rapp, Curti, and Boldi, 2021).

4.2. Data collection & analysis

In this research, focus groups' sampling adopted a non-probability sampling method, namely purposive sampling (Bell, Bryman and Harley, 2019). The targeted sampling group of this study is actual users of chatbots provided by cosmetic retailers in China on online shopping platforms. Following with the ethical guidelines, the participants voluntarily participated this study recruited through researcher' personal social media account are over 18 years old, included both male and female participants. A total of 6 groups were organised, each focus group was conducted in Chinese language, audio recorded and translated into English by the author. A total of 10 sections of focus groups' questions devoted to extracting content about the ambivalence of consumers towards chatbot use from their interactions on online shopping platforms. Each group lasted about 45 minutes, starting from the general information of participants and whether they had used chatbots on online shopping platforms, followed by their statements and evaluation of chatbots user experience. Due to the COVID-19 pandemic and travel restrictions, the focus groups of this study were conducted online. The data of focus groups was analysed using thematic analysis, following Braun and Clarke's (2006) framework.

5. Findings – Consumers' Ambivalence towards Chatbot Use

According to the definition from Tudoran, Olsen, and Dopico (2012), "Ambivalence is a state of having simultaneous positive and negative cognitions and feelings towards the same object". In this study, the indication of ambivalence about chatbot use from participants' responses can be their simultaneous positive and negative feelings towards

chatbot use. The following response was quite representative: *"I have good and bad feelings about communicating with chatbots" (Group 1, Participant 4).* We summarise four major aspects of consumers' ambivalence towards chatbots as following.

5.1. The ambivalence towards chatbot use in different shopping stages

Some participants pointed out that the chatbots' user experience was good before shopping, but bad after the sale was complete. In addition, conversations with chatbots were shorter before shopping, but longer during the aftersales period. For example: *"If it is before shopping, the communication may take one to two minutes. If it is after shopping, after-sales problems may take five to ten minutes." (Group 4, Participant 6)* These longer interactions might reflect weaker chatbot function in aftersales service and an increased inability of the chatbot to solve customer problems in the aftersales context.

5.2. The ambivalence towards chatbots' problem-solving ability

Nine participants had positive attitudes towards chatbots' ability to deal with general problems, while they had negative attitudes towards chatbots ability to handle complex and personalised problems. Moreover, some participants were positive about chatbots' ability to guide consumers to solve problems, and negative about the depth of chatbots' guidance. The following is an example of participants' ambivalence towards chatbots providing additional information in responses: *"I think there are some brands' chatbots, in addition to answering my questions, they will give me recommendations of their products or other things. I think this is too gaudy, and I do not want these things. Since they are just chatbots, they can respond to me some basic questions. I do not expect to get any extra information from them, and do not give me such jumbled information". (Group 6, Participant 2)*

5.3. The ambivalence towards chatbots' anthropomorphism and emotional recognition

The majority of participants felt that the anthropomorphism and emotional recognition of chatbots were relatively superficial features and were not essential to their use of chatbots. A quote from a participant stated this point well: *"For anthropomorphism or emotion recognition, it would be better for chatbots to have, and it would be okay chatbots do not have." (Group 6, Participant1)*

Among the responses involving chatbots' anthropomorphism, seven participants expressed a positive view of chatbots' anthropomorphism, while three participants expressed a negative view. There were also participants who strongly expressed their ambivalence towards chatbots' anthropomorphism. For example: *"I think the most concerned factor is technology, like anthropomorphism, because I think these chatbots' intelligence and communication skills are still lacking… I would be very disgusted because*

chatbots have not done a perfect job of anthropomorphism." (Group 2, Participant 1) Sixteen participants agreed on the significance of chatbots' emotional recognition. Two of these sixteen participants believed that the chatbots' emotional recognition could narrow the distance between humans and machines. In contrast, six participants thought it was unnecessary for chatbots to recognise emotions. Some participants significantly expressed ambivalence towards chatbots' emotional recognition, such as: *"As for emotion recognition, of course, these are important. However, if a chatbot cannot help me solve problems, it is just very cute, I feel I will be exhausted if I continue to chat. Then I think it is inefficient, it is fake and empty. I only care about results." (Group 5, Participant 1)*

The contradictory comments from participants reflect an apparent ambivalence toward chatbot anthropomorphism – consumers like chatbots to appear more human, since it can make the interaction more pleasant and emotionally satisfying, and they also dislike it, because, after all, the chatbot is just a machine and they only want it to give them the information they need. This ambivalence could reflect a broader human unease with AI and human-like technology.

5.4. The ambivalence towards privacy and security issues in chatbot use

Six participants said yes when they were asked if they had concerns about the security and privacy of their personal information during chatbot use, while nineteen participants said they had not. Although most participants said they had not, most of them expressed the helplessness and ambivalence of personal information security and privacy protection during the use of chatbots. Furthermore, when asked if they would pay attention to the security and privacy of personal information in the future, only 12 participants said yes, however, some of them were still ambivalent, for example: *"In future, it is hard to say. It depends on how far these robots developed. If chatbots have a high degree of anthropomorphism or intelligence, they have the possibility to produce some behaviours by themselves, and process data by judging which situations they are in. Then, I think it may be possible to worry about whether my personal information will be leaked." (Group 2, Participant 1)* These ambivalence comments seem to suggest that consumers feel relatively powerless against the technology – why worry about security because the machines are too complex to understand, they might steal our information, but what can we do about that? Nothing, so we have no choice but to trust them.

6. Discussion

The findings of this study are broadly consistent with previous findings from the literature on the relatively immature technology of chatbots. For example, issues such as misunderstanding questions, responding irrelevantly, and being poorly integrated with human customer services emerged in the present study as they had in previous studies. Where the present study diverged from previous studies was in attitudes toward chatbot anthropomorphism. Previous studies had suggested that participants preferred a higher degree of anthropomorphism as a desirable or necessary chatbot characteristics. However, the present study did not contradict previous findings that customers are more willing to connect with human-like chatbots, since the degree of anthropomorphic integrity of the chatbot neither deterred nor encouraged these participants from engaging with chatbots. They wanted information and would willingly engage with the chatbot regardless of how human-like it was. When they become irritated it was because the chatbot could not solve their problem or respond to their query, so they felt that the technology of chatbots needed further development. Further research is still needed to address the impact of anthropomorphism on the interaction between consumers and chatbots. Finally, the theme of trust in the privacy and security of the interactions between the participants and chatbots emerged as an important issue. Contrary to the views in the literature review, most of the participants did not worry about the invasion of privacy when using chatbots. However, this kinds of 'do not worry' approach seemed to indicate a feeling of helplessness towards the chatbot technology – participants were aware of the risk of loss of privacy and security but did not seem to feel that they could do anything about it. As a consequence of this sense of helplessness, they disregarded these fears and placed their trust in the chatbot. The findings of this study add to the existing literature on human-chatbot interaction in online shopping experience, and provide essential and overlooked aspects to the theoretical construction and practical implication of human-chatbot interactions.

7. Theoretical Contributions and Practical Implications

7.1. Theoretical contributions

Ambivalence was rarely applied and analysed in human-chatbot interaction. This study makes a theoretical contribution by addressing the aspects in which consumers have ambivalence towards chatbot use, comparing findings with existing literature in terms of immature technology, anthropomorphism, emotions, privacy and security in chatbot use, and addresses calls for better understanding of how ambivalence affects consumers' chatbot

use. Moreover, this study can further subdivide and integrate various categories of ambivalence (e.g., mixed emotions) (Sipilä et al., 2018) in the future to expand the current study and further make theoretical contributions to the study of consumers' interactions with chatbots in the online shopping experience. Furthermore, this study also steps into the exploratory stage, as Bagozzi, Brady, and Huang (2022) stated, to explore how AI transform the service economy into a Feeling Economy.

7.2. Practical implications

The findings of this study have important implications for chatbot designers and retailers who offers chatbots services, as well as policymakers who work on chatbots' privacy and security issues. One implication is that designers and retailers need to address the immaturity of chatbot technology to improve chatbots communication skills by programming chatbots with better information that enables them to conduct a wider range of conversation scenarios. Secondly, it is crucial for designers and retailers to use Interaction Analytics and NLP to make their chatbots conversational and be able to provide personalised services through increased machine understanding of human communication idioms. Third, designers and retailers should make it faster and easier to switch from chatbots to human customer services. Lastly, chatbot designers and policymakers should pay more attention to reassuring consumers about the privacy and security issues in chatbot use, to reduce the sense of helplessness of chatbot users.

8. Conclusion

This exploratory study can be considered to have contributed to the existing literature on consumers' ambivalence towards chatbot use in the online shopping experience, and extends the understanding of human-chatbot interactions. However, it also has some limitations. First, due to the exploratory nature of this study and the small sample size, the findings of this study are very limited in their generalisability. Future studies can use larger samples or quantitative methods to detect and deepen the findings of this study. Moreover, future research can also be conducted in different industries, countries or generations to test whether consumers' ambivalence towards chatbot use is reflected in other industries, or whether consumers in different countries have different reactions to chatbot use, or whether different generations are similarly ambivalent towards chatbot use. In addition, an in-depth analysis can be carried out to explore the other possible aspects of consumers' ambivalence towards chatbot use.

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