The Factors that Influence AI-based Chatbot's Impact on Customer Experience in a B2B Context

Keywords: Customer Experience, Chatbot, Artificial Intelligence, B2B

Abstract

Topic: This study focuses on the implementation of AI (artificial intelligence) based chatbots by SMEs (Small and Medium sized Enterprise) to enhance customer experience in a B2B (business-to-business) setting. The findings reveal the factors that influence customer experience of SME clients when they interact with an AI-based chatbot. In today's rapidly evolving business landscape, SMEs are looking for new ways to provide superior customer experience for their clients. Embracing AI-based technologies has become increasingly popular as a means to improve customer interactions and gain a competitive edge. B2B companies are adopting AI-based chatbots to enable human-like service interactions with their customers at various touchpoints (Kushwaha et al., 2021). This trend isn't exclusive to large enterprises; even SMEs have begun implementing AI-based chatbots as technology becomes more accessible. However, there is a limited body of research exploring the impact of AI-based chatbot adoption by SMEs on customer experience. While AI-based chatbots offer cost- and time-saving opportunities for companies, they may still fall short of meeting customer expectations at the desired level (Adam et al., 2021). By understanding the factors that influence customer experience during the interaction with an AI-based chatbot, SMEs can deliver efficient customer service and achieve enhanced customer satisfaction. This study builds upon the frameworks developed by Hoyer et al. (2020), Kushwaha et al. (2021), Adam et al. (2021) to gain insights into the factors that influence customer experience when SME clients interact with an AI-based chatbot. The underpinning theories and models of the study are social response theory, technology acceptance model, diffusion of innovation theory, and information systems success model. The findings of the study show that the perceived expertise of an AI-based chatbot plays a more vital role in improving customer experience than other factors such as system design when clients interact with the chatbot. Moreover, the user's personal expertise is a key factor in setting the customer's expectations regarding the chatbot. The conceptual framework introduced in the study should be tested in a further empirical study to identify the significance of the proposed relationships.

- **Applicability to the conference theme – 'Sustainable Growth in Unexpected Places':** The paper addresses the contemporary topic of AI-based chatbot implementation by companies to improve customer experience and customer service in a B2B context. The findings will help SMEs to utilise appropriate similar technologies to achieve sustainable growth by identifying new target markets, improving customer experience, and driving competitive advantage by integrating innovation in their organisation.

- **Aim:** The aim of this research is to investigate how an AI-based chatbot contributes to customer experience in a B2B context. In addition, we are exploring the factors that contribute to a change in customer experience while interacting with an AI-based chatbot.

- **Methodology:** In this study, a qualitative approach was applied using a single case study. The case study used in the research was based on an SME in the United Kingdom that developed an exclusive AI-based chatbot to improve customer experience of its B2B clients. A single case study was used to have a deeper exploration of one organisation's AI-based chatbot implementation and its effects on customer experience. Semi-structured interviews were conducted with the company's clients who used the AI-based chatbot. The participants were chosen using a purposive sampling method. In addition, the chatbot interactions of the participants were observed. Interviews were transcribed, coded, and analysed to identify themes. A six-phase reflexive thematic analysis approach (Braun and Clarke 2006) was applied to analyse data with the support of Nvivo 12 Pro software. A conceptual framework was

developed to illustrate the factors that influence customer experience when SME clients interact with an AI-based chatbot.

- **Contribution:** While previous studies investigated the role of AI-based chatbots on customer experience, there are few studies that explored the factors that influence the customer experience in a B2B context. Moreover, this study is based on a chatbot that is specifically developed for an SME and brings real-life insights from its clients. The study provides a deeper understanding of how AI-based chatbots influence customer experiences in a B2B context.

- **Implications for policy, if applicable:** This study addresses the privacy and security perceptions of B2B customers during their interactions with AI-based chatbots. Policymakers would benefit from these insights when they set guidelines for data compliance and the ethical use of AI in chatbots.

- **Implications for practice, if applicable:** The findings of this study will help SMEs understand the factors that influence an AI-based chatbot's effectiveness on customer experience. SMEs can use their resources more efficiently by investing in the factors that would improve an AI-based chatbot's performance. Furthermore, the study will provide SMEs with valuable insights to refine their implementation of AI-based chatbots.

Conference Track:
Technology Entrepreneurship

Introduction

After the release of ChatGPT by OpenAI in November 2022, many businesses and customers showed their interest in AI (Artificial Intelligence) based chatbots (Taecharungroj, 2023). However, AI-based chatbots have been used by B2C (Business-to-consumer) and B2B (Business-to-business) companies since the early days of the internet. For instance, SmarterChild, which was an AI-based chatbot available on Microsoft Messenger in 2001, had the ability to provide information to its users about practical daily tasks such as movie times, news, and weather (Adamopoulou & Moussiades, 2020). In many e-commerce settings, human customer service agents are replaced by AI-based chatbots to save cost and time (Adam et al., 2021). Similarly, SMEs are adopting new ways to provide a better customer experience for their B2B clients (Kushwaha et al., 2021). However, the studies that investigated the factors that influence customer experience during interaction with AI-based chatbot in a B2B setting are limited. This study aims to explore how an AI-based chatbot contributes to customer experience in a B2B context. The factors that influence the customer experience are investigated to help companies make better decisions when they are developing AI-based chatbots. The research questions of the study are as follows:

- How does the AI- based chatbot contribute to the customer experience of SME clients in a B2B context?
- What factors contribute to the change in customer experience of SME clients while interacting with the AI-based chatbot in a B2B context?

Theoretical Background

In this section, the studies that explored the factors influencing customer experience when customers interact with an AI-based chatbot are summarised. The underpinning theories of the study include social response theory, technology acceptance model, diffusion of innovation theory, and information systems success model. The interview guide for the study is based on the frameworks developed by Hoyer et al. (2020), Kushwaha et al. (2021), Adam et al. (2021).

Factors that Influence Customer Experience in B2B Context

Although there are limited studies that investigated the factors that influence customer experience in B2B context during interaction with AI-based chatbot, Kushwaha et al. (2021) utilised Big Data analytics to identify these factors. They categorised these factors in the following variables:

- Factors associated with flow
- Touchpoint specific factors
- Privacy/Safety, Trust, Transparency factors
- System design factors
- Perceived risk
- Brand trustworthiness
- Sensory appeal
- Predictability
- Innovation

According to their findings, service quality, brand trustworthiness, transparency, visual appearance, ability/expertise, trust, customer satisfaction, challenge/arousal, skill/control, innovation, and telepresence/time distortion variables have statistically significant relationships with customer experience in B2B context. However, Kushwaha et al. (2021) could not find any statistically significant relationship between information quality, verbal element and focused attention variables and customer experience. In our study, all the variables in their framework are used to gather insights into the factors that influence the customer experience of SME clients when they interact with AI-based chatbots.

Experiential Value

Hoyer et al. (2020) explored the implications of recent technologies including AI based chatbots on transforming the customer experience. In their framework, they proposed that AI based chatbots create experiential value in cognitive, sensory/emotional, and social categories. In the cognitive category, AI-based chatbots provide value by helping customers make better decisions and helping companies develop and improve algorithms. In sensory/emotional category, the interaction with AI-based chatbots makes intelligence tangible. AI-based chatbots develop the way to humanised robotisation in customer service. In the social category, AI-based chatbots integrate technology into people's lives and they humanise the interaction "that can break down the barrier between humans and machines" (Hoyer et al., 2020 p 64). In our study, we used their framework to develop questions to understand how AI-based chatbots provides these types of experiential value for SME clients.

Furthermore, we adapted anthropomorphic design cues variable from the framework of Adam et al. (2021) to understand if a humanised interaction experience influenced experiential value of SME clients. In their study, Adam et al. (2021) found out that anthropomorphic design cues such as identity, small talk and empathy, influenced user compliance with service feedback request in an interaction with AI-based chatbot.

Summary

The factors that influence customer experience during interaction with AI-based chatbot from the frameworks of Kushwaha et al. (2021), Hoyer et al. (2020) and Adam et al. (2021) are used to develop this study's interview guide. By integrating these frameworks, we aim to identify the if these factors are evident when SME clients interact with an AI-based chatbot in a B2B context.

Methodology

In this study, a qualitative research strategy is applied using a single-case study method to achieve theoretical insights. A deeper investigation of AI-based chatbot implementation and its effect on customer experience is the purpose of this single case study. The chosen case study relates to a custom developed AI-based chatbot for an SME (referred to as "Company A" from onwards) in the United Kingdom. The AI-based chatbot in the case study was developed to enhance the customer experience of Company A's SME clients. Purposive sampling was used to choose the participants among the users of Company A's AI-based chatbot.

An interview guide was prepared based on the frameworks developed by Hoyer et al. (2020), Kushwaha et al. (2021), Adam et al. (2021). The interview guide was divided into four parts which are introductory, chatbot related, customer experience related, and experiential value related questions. Before the interviews, the participants were informed about the study details, and participant consent was obtained. Three in-depth semi-structured interviews were

conducted with the owners or managers of Company A's clients who used and tested the custom-developed AI-based chatbot. Although the number of interviews could be increased, the number of SME clients who tested and used Company A's chatbot was limited. Still, a small number of participants can be valuable in a qualitative approach when it is hard to reach specific group of participants (Baker and Edwards, 2012). Interviews were conducted online via Zoom to provide flexibility for the participants' busy schedules. Furthermore, participant interactions with the chatbot were observed during the online interviews through screen sharing. The participant list is provided in Table 1.

Table 1 Participant Information

Participant	Title	Business Duration with Company A
Participant 1	Technical Sales Manager	15 years
Participant 2	CEO	6 years
Participant 3	Service Supervisor	20 years

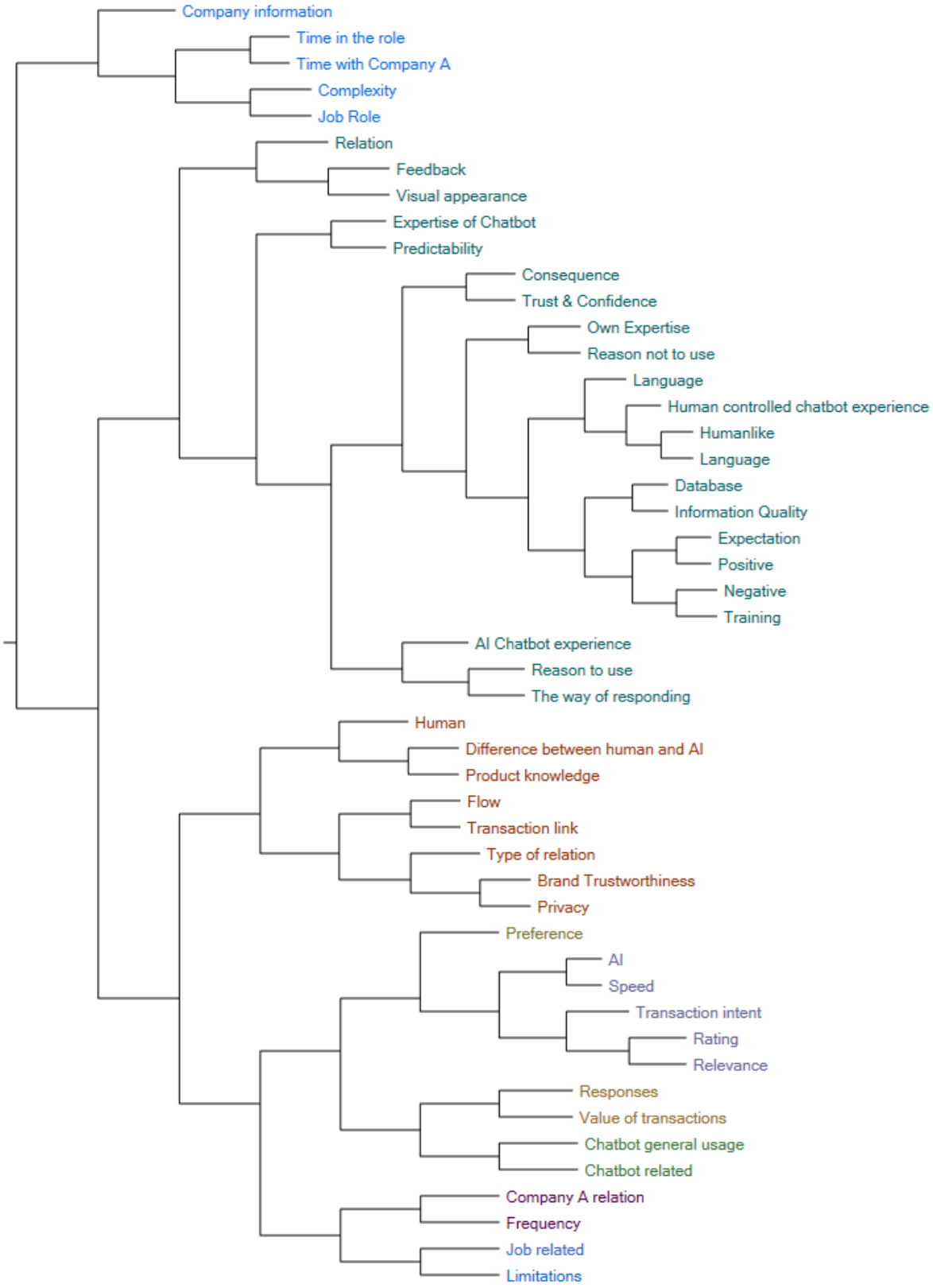
A six-phase reflexive thematic analysis approach (Braun and Clarke, 2006) was used for data analysis. After the transcribing the interviews, the data was coded and analysed using NVivo 12 Pro software to identify themes. Initially, 51 codes were identified and grouped into 11 categories. Cluster analysis was conducted on NVivo to illustrate main themes and sub themes. These identified themes were then utilised to construct the variables of the conceptual framework, illustrating the factors that influence customer experience during interactions of SME clients with an AI-based chatbot in a B2B setting.

Findings and Discussion

The initial findings of the study are presented in this section. Following the initial coding phase in NVivo, a cluster analysis was conducted based on word similarity. Cluster analysis was employed to assist in the development of themes in the subsequent analysis stage. The results of cluster analysis are depicted in Figure 1.

After the cluster analysis, four main themes were identified: information quality, nature of conversation, system design, and trust. Chatbot expertise, personal expertise, and brand trust were identified as subthemes with connections to other main themes.

Figure 1 Cluster Analysis Results



Information Quality

The participants of the study pointed that information quality was one of the factors that influenced their decision to carry on asking questions to AI-based chatbot.

> *"Unless you can prove me wrong, and it's the quality of the, the quality of the answers and solutions, isn't it?"*
>
> *Participant 1*

> *"...if you use it, then you don't get any answers you know it will not take long time before you will not use. Because you don't get the correct answers.*
>
> *Participant 2*

Participants stated that they expect AI-based chatbot of an SME company to be an expert in its subject area. If the chatbot cannot present its expertise while answering questions, lack of chatbot expertise will have an advert effect on information quality.

> *"...and then it being more about like, you know, an intelligent programme that was trying to drill down, it was more asking me, "Is this what I want"? But if I don't know? I'm relying on the person to give me the answer rather than the other way round."*
>
> *Participant 1*

In some cases, participants mentioned their personal expertise in the subject area had influence on the expectations of the information quality.

> *"...it depends on what kind of end user they are looking for because, like me, I'm a quite advanced end user and like end customer, they would be you know not so advanced so probably you can get away with less information."*
>
> *Participant 2*

Therefore, we suggest that SME client's personal expertise moderates the relation between information quality and SME customer experience.

Nature of Conversation

When participants interacted with AI-based chatbot, there were occasions when they realised the answers were not provided by a human.

> *I asked it. You know, where is the manual for the product? So, a location of a technical manual? And it gave me a picture of the engineers at Company A. So that's, you know, that sort of thing is when you know that you're dealing with A.I.*
>
> *Participant 3*

However, they pointed humanlike answers kept the interaction going on in most cases.

> *"That's pretty good. Again, when asked relevant questions, it provides courteous response that's quick and then has the follow up of, you know, is that all you need or does that answer your question? It feels, in that sense, human."*
>
> *Participant 3*

When the participants were aware that chatbot was not managed by human, they expected that AI-based chatbot would predict their intention from the answers they provided.

> *"…but it needs to stay in this chain. So, ask me an intelligent question. But I don't know whether that's helping it drill down."*
>
> *Participant 1*

Considering these findings, we propose that nature of conversation has influence on customer experience of SME clients.

System Design

Although system design features such as visual appearance, interactive speed and time distortion are important factors that influence customer experience (Kushwaha et al., 2021), participants expected that chatbot would provide these features in a seamless way.

> *"The response time was really good."*
>
> *Participant 1*

> *"It doesn't need to be too advanced; I think it was working good with how it is looking."*
>
> *Participant 2*

Hence, potential system design issues should be resolved before the launch of chatbot through user tests. Otherwise, technical issues will have negative influence on customer experience of SME clients.

Trust

While the participants didn't identify any trust issues with AI-based chatbot, they pointed that it was mostly because of their trust in Company A and its brand.

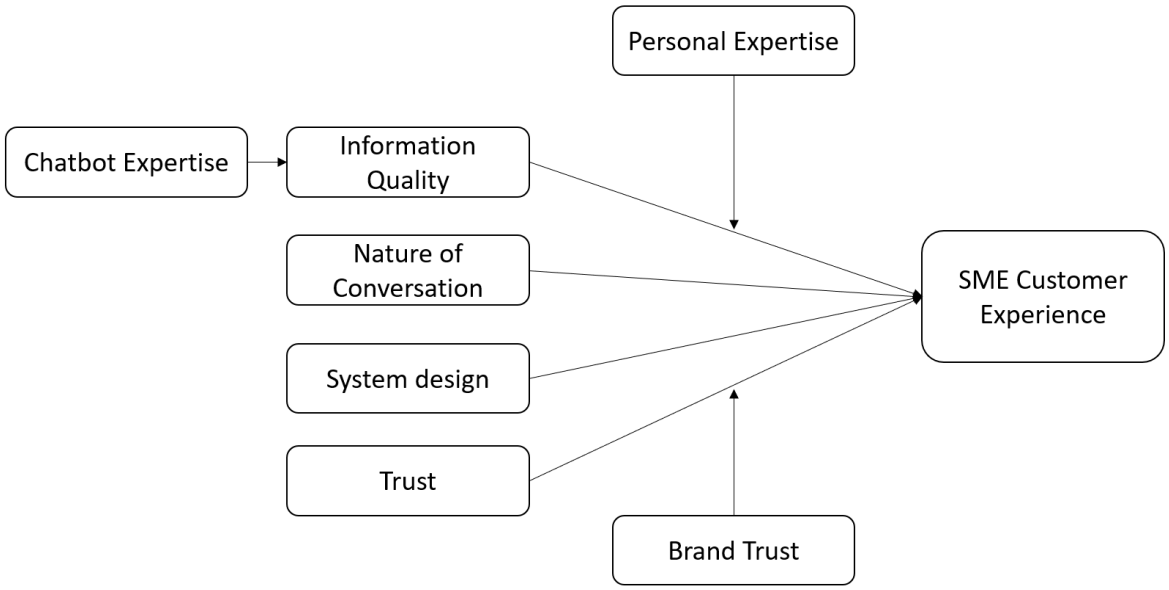
> *"You have the expectation that security is at the forefront, especially with the company that's reputable. So, with actisense I've never really had a concern that any data I've been put is going to be, you know, not protected because Company A is a very reputable company. So that sort of information, you have the expectation that it will be protected."*
>
> *Participant 3*

Thus, brand trust is a factor that moderates the relation between trust to chatbot and SME customer experience.

Conceptual Framework

Based on the initial findings, conceptual framework in Figure 2 is developed to illustrate the factors that influence SME customer experience in B2B context.

Figure 2 Conceptual Framework



The conceptual framework should be tested in a quantitative approach to identify the direction and strength of proposed relationships.

Conclusion

This study contributes to the literature by exploring the role of AI-based chatbots on customer experience within a B2B context. Furthermore, it offers real-life insights gathered from SME clients of a B2B company regarding their experience with a custom developed AI-based chatbot.

According to initial findings, chatbot expertise is a factor that influences customer experience of SME clients. However, this impact is moderated by the client's personal expertise. While previous studies discussed the relationship between AI-based chatbot system design and customer experience, SME clients now expect seamless system design as a prerequisite for engaging with an AI-based chatbot. This shift in expectations may be attributed to recent technological advancements in chatbots (Taecharungroj, 2023), which have altered the expectations of SME clients.

Additionally, the findings suggest that trust in the brand of the company providing the chatbot service moderates the relationship between trust in the chatbot itself and customer experience. Based on these findings, B2B companies that establish trust with their clients can persuade them to utilise AI-based chatbots for an enhanced customer experience. Nevertheless, AI-based chatbots must deliver the expected information quality and expertise to maintain a positive customer experience.

Implications

The study seeks to address the privacy and security perceptions of B2B customers when interacting with AI-based chatbots. The findings of the study will be beneficial for regulators in formulating the guidelines for data compliance, privacy, and ethical use of AI in AI-based chatbots. Furthermore, the study will assist SMEs in enhancing the effectiveness and efficiency of their AI-based chatbots by revealing the factors that influence customer experience.

Limitations and further research

The study relies on a single case study focused on a custom developed AI-based chatbot of a B2B company within a specific industry. Further studies can be conducted to increase the number of case studies from different business sectors. Moreover, exploring chatbots designed for broader customer service purposes can enhance the generalizability of the results. The relationships of the proposed framework should be tested using a quantitative approach.

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