

An exploratory study of AI participants' views on using AI in business hotels

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Abstract: This study presents a novel approach to exploring the viewpoints of AI bots regarding the utilization of AI in business hotels using thematic analysis. Interviews were conducted with AI bots serving as the subjects. The rationale for this approach is that AI bots have undergone extensive training using a wide range of data from different internet sources. Therefore, having an interview with an AI bot can be viewed as an interaction with an entity that embodies collective viewpoints and information derived from the internet. The study has unearthed crucial themes that offer invaluable insights to industry participants and policymakers, contributing to the expansion of existing literature by generating novel knowledge and fostering a comprehensive understanding. The pioneering approach of incorporating AI bots as participants in interviews opens up fresh avenues for future research endeavours and engenders discussions and debates concerning the use of AI bots as participants.

Keywords: AI bot, AI participant, business hotel, language model, thematic study

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Introduction

In the aftermath of the COVID-19 pandemic, businesses are progressively resuming their operations and reengaging in travel. Meetings, conferences and other corporate events are being scheduled, leading to an increased demand of business hotels (Eggleston et al., 2021; Humphreys & Harrap, 2020).

Although the demand for business hotels is strong, it is important to recognise that the competitive landscape within the business hotels is intense. Business travelers have high expectations when it comes to the quality of their accommodations. They require not only amenities and services that cater to their specific needs, such as well-equipped meeting rooms, high-speed internet access, business centers, fitness facilities, and convenient locations, but they also seek a seamless blend of comfort, convenience and productivity during their stay (Dolnicar, 2002; Heung & Wong, 1997).

To stay competitive, business hotels must continually invest in upgrading their facilities and services to meet these expectations. Furthermore, they need to deliver innovative experiences to differentiate themselves from competitors (Akbaba, 2006; Napierala & Birdir, 2020). In this context, the integration of Artificial Intelligence (AI) has emerged as a promising solution owing to its diverse range of capabilities that possess the capacity to enhance the experience of guests through improved service delivery (Roy et al., 2020; Shekhar & Chaplot, 2021).

It is evident that technological tools such as online booking systems, digital marketing, and social media platforms play pivotal roles in increasing room revenue (Bintang et al., 2020) and improving booking efficiency (Surya et al., 2019). In recent years, the integration of artificial intelligence (AI) in the hospitality sector has garnered increasing attention across various contexts. For examples, Nam et al., (2021) explore the adoption factors of AI in Dubai-based hotels, emphasizing technological, organizational, and environmental domains. Singh et al., (2022) provide a systematic literature review of AI and robotics research in the hotel industry, revealing significant growth in this field.

In summary, previous studies have shown that the integration of AI in the hotel industry has substantially enhanced guest experiences and operational efficiency. Gupta et al., (2022) focus on the implementation of AI-enabled robots at Novotel Ambassador Seoul Dongdaemun, showcasing enhancements in automation, personalization, and seamless service delivery. Additionally, Talukder et al., (2023), emphasize the pivotal role of AI technologies like chatbots, virtual assistants, voice-activated controls, and predictive maintenance in delivering personalized services and streamlining operations. These technologies also contribute to cost reduction and competitive advantage by optimizing trip planning, reception, and room services (Hussein Alshami et al., 2021). Moreover, AI's role in enhancing guest satisfaction is evident through improved service responses and positive guest reviews, although balancing AI with human interaction remains essential (Al-Hyari et al., 2023; Mariani & Borghi, 2021).

However, the adoption of AI also poses challenges related to data privacy, security, and potential job displacement, necessitating ethical and responsible deployment (Yasin et al., 2021). In fact, it is worth noting that the utilisation of artificial intelligence (AI) in the hotel industry has generated a divergent range of opinions. For examples, Roy et al. (2020) discovered that the inclination of customers to adopt AI devices fluctuated based on various factors. Moreover, Citak et al. (2021) conducted an investigation into how potential customers can motivate the adoption of specific AI solutions within the hotel industry, and determined that opinions on this matter were divided.

Therefore, it is essential to take a balanced approach when planning the implementation of artificial intelligence (AI) in business hotels. This approach should consider the wide range of opinions on this issue. The abundant information available on the internet is valuable as it helps in understanding the diverse perspectives and viewpoints regarding the use of AI in the hotel industry comprehensively. This information is crucial for gaining a complete understanding of the topic, covering different viewpoints and angles.

Nevertheless, Internet data is distributed across various websites, platforms and formats. It can be challenging to integrate and consolidate data from different sources, especially when they have varying structures, data formats, or access restrictions. This fragmentation makes it difficult to analyze data thoroughly and achieve a complete understanding.

Fortunately, the emergence of AI bots, such as ChatGPT, Google BARD, Microsoft Bing, etc., presents a new opportunity to serve as proxies for the abundant volume of internet data. The backbone technology behind AI bots is large language models. These models are trained using vast amounts of data, allowing them to generate responses that are so authentic that people cannot distinguish them from human responses (Carvalho & Ivanov, 2023; Gursoy et al., 2023; Leong et al., 2023). In fact, these AI bots exhibit a myriad of remarkable capabilities, encompassing not only a diverse range of functionalities but also the ability to emulate distinct characters in order to accomplish various tasks (Almahasees, 2017; Almahasees, 2018; Campello de Souza et al., 2023; King, 2023; Leong & Sung, 2023; Rudolph et al., 2023).

In this study, we analyze the views of five advanced AI bots: ChatGPT, Microsoft Bing, Google Bard, Poe Claude-Instant, and Poe Sage. ChatGPT, developed by OpenAI, is known for generating human-like text and is useful for various applications. Microsoft Bing uses AI to improve search results and conversational interfaces. Google Bard can provide detailed and creative responses. Poe Claude-Instant and Poe Sage, both from Anthropic, focus on deep contextual understanding, ensuring meaningful interactions. This accessibility allows other people to explore and experience AI applications without boundaries, fostering broader understanding and innovation in AI utilization for business hotels. More detailed descriptions of these AI bots, including their self-introductions, will be provided in the next section.

The contributions and values of our innovative study are multifold. Firstly, the identified themes from our thematic analysis provides both industrial participants and policy makers with valuable insights, enabling them to make informed decisions, develop targeted strategies, and create policies that align with industry trends and stakeholder perspectives in terms of how to use AI in business hotels. Secondly, our study has made contributions to the extension of existing literature by generating new knowledge and providing in-depth understanding, with a specific focus on the chosen topic. Thirdly, we have introduced AI bots as participants in interviews using a novel and justified rationale. This innovative approach opens up new avenues for future

research, such as serving as a pioneering example for future interview practices, inspiring new ideas for exploring studies, and sparking debates on the use of AI bots as participants, among other potential implications.

The remaining sections of this paper are structured as follows. Firstly, we elaborate on the methodology employed in this study, providing a detailed account of its implementation. Subsequently, we present and engage in a comprehensive discussion of the analysis findings. Finally, we critically conclude the findings, assessing the contributions and values of our works. We also reflect upon the limitations encountered during the study and propose potential directions for future research.

Methodology

This section presents the methodology employed in conducting a thematic analysis on the data collected from interviews with five participants. The purpose of the thematic analysis was to explore and identify recurring themes, patterns, and insights related to the views of AI bots using AI in business hotels. This section outlines the participants, data collection process, data analysis procedures, and ethical considerations.

Underlying concepts behind the chosen approach

In this study, we introduce a novel approach by utilising AI bots as interview subjects to gain deeper insights into the perspectives surrounding the utilisation of AI in business hotels. The rationale for justifying our chosen approach is explicated as follows.

AI bots, despite their lack of genuine comprehension or consciousness, have undergone extensive training using a wide range of data from different internet sources. These sources include books, articles, websites, research papers, forums and social media posts, all produced by humans. As a result, each AI bot can be thought of as a representation of the vast and diverse opinions of humans gathered from the internet. Considering this level of understanding, having an interview with an AI bot can be viewed as an interaction with an entity that embodies the collective viewpoints and information derived from the internet.

Based on the aforementioned justified rationale, we proceeded to conduct interviews with five renowned artificial intelligence (AI) bots (i.e. ChatGPT, Microsoft Bing, Google BARD, Poe Claude-Instant and Poe Sage), followed by a comprehensive thematic analysis of the gathered data.

Participants

As explained above, this research involved five artificial intelligence (AI) bots as participants. These AI bots include: ChatGPT, Microsoft Bing, Google BARD, Poe Claude-Instant and Poe Sage. The AI bots were individually posed a question soliciting self-introductions. Table 1 provides a summary of these AI bots.

Table 1. Summary and self-introduction of the five selected AI bot participants

AI Bots (Participants)	Self-introduction: Introduce yourself, your developer and training methods within 100 words	Links to the AI Bot
ChatGPT	I'm ChatGPT, an advanced AI language model created by OpenAI. My development involved training on a massive amount of text data, covering various domains and subjects. OpenAI utilized a method called unsupervised learning to train me, where I learned patterns and relationships in the data without explicit instructions. My training model, GPT-3.5, consists of 175 billion parameters, enabling me to generate human-like responses. OpenAI continuously fine-tunes and refines my abilities to enhance performance and provide a better user experience. However, it's	https://chat.openai.com/

Microsoft Bing	<p>important to note that while I strive to provide accurate and helpful information, I may occasionally generate responses that are not entirely accurate or up to date.</p> <p>Microsoft Bing is a search engine developed by Microsoft. It was launched in 2009 and has since been updated with new features and capabilities. Bing is designed to help users find the information they need quickly and easily. It can understand and communicate fluently in the user's input language such as English, 中文, 日本語, Español, Français, Deutsch and others. Microsoft has a training platform called Microsoft Learn that provides technical training for developers. You can find training and certifications and discover resources that will assist you on your learning journey. Microsoft also has a developer platform that provides tools and resources for developers to build applications on Microsoft platforms.</p>	https://www.bing.com/
Google Bard	<p>Hi! I'm Bard, a large language model from Google AI. I'm trained on a massive dataset of text and code, and I can generate text, translate languages, write different kinds of creative content, and answer your questions in an informative way.</p> <p>I was created by Google AI, and I'm still under development, but I've learned to perform many kinds of tasks, including</p> <p>I will try my best to follow your instructions and complete your requests thoughtfully.</p> <p>I will use my knowledge to answer your questions in a comprehensive and informative way, even if they are open ended, challenging, or strange.</p> <p>I will generate different creative text formats of text content, like poems, code, scripts, musical pieces, email, letters, etc. I will try my best to fulfill all your requirements.</p>	https://bard.google.com/
Claude-instant	<p>I'm excited to see what I can do, and I'm always learning new things.</p> <p>Hello, my name is Claude-instant. I was created by Anthropic.ai using machine learning and AI techniques. Anthropic trains me through a combination of supervised and reinforcement learning. I am initially trained with large amounts of text data and human feedback on my responses to learn how to generate natural and appropriate text. Once I have reached a baseline level of performance, Anthropic further improves my responses through trial and error techniques where I gradually optimize towards desired objectives that measure things like safety, factuality, coherence and relevance.</p>	https://poe.com/Claude-instant
Sage	<p>Hello! I am Sage, a large language model developed by OpenAI. I am based on the GPT-3.5</p>	https://poe.com/Sage

architecture, which is an improved version of the GPT-3 model trained on a larger dataset and with improved training techniques. My training involved being fed vast amounts of text from the internet, including books, articles, and websites, and using that data to learn patterns and relationships in language. My developer, OpenAI, is a leading research organization in artificial intelligence and machine learning. They are committed to advancing the field of AI while ensuring it is developed responsibly and ethically.

In the following discussion, pseudonyms were assigned to each of the above AI bots to ensure their anonymity and confidentiality. In addition, the five AI bots were labelled as A01, A02, A03, A04 and A05.

Data Collection

To collect data from the AI bots, a series of interactions were conducted in a controlled environment. The research team engaged in simulated conversations and interactions with the AI bots, posing interview questions. The interactions were designed to simulate real-world scenarios and capture the bots' responses. In overall, the data collection process involved documenting the responses, actions, and outputs generated by each AI bot.

A structured interview was designed as the instrument to gather qualitative data that would provide in-depth insights into the research topic.

The interview questions were carefully crafted to explore the participants' background and expectations related to the research area. The questions were designed to allow the participants to freely express their thoughts. In total, nine questions were developed based on the research objectives and were refined through pilot testing to ensure clarity and relevance. The nine research questions were listed in the Table 2.

Table 2. The list of interview questions

Questions	Section
Q1. Please provide a 100-word summary describing your understanding of a business hotel.	1
Q2. In a 100-word summary, discuss your overall opinion on business hotels using AI technology to enhance the guest experience.	
Q3. Have you ever stayed at a business hotel that uses AI technology? If yes, could you share your experience?	
Q4. In a 100-word summary, discuss what AI-powered amenities you think business hotels should offer to enhance the guest experience.	2
Q5. In a 100-word summary, discuss the potential benefits of using AI in business hotels.	
Q6. In a 100-word summary, discuss the potential drawbacks of using AI in business hotels.	
Q7. In a 100-word summary, discuss how important the human touch is in the business hotel experience, even when AI is used.	
Q8. In a 100-word summary, discuss how the use of AI in business hotels would affect the price point or perceived value of the hotel.	
Q9. Is there anything else you would like to add about the use of AI in business hotels?	3

The nine interview questions were categorised into three distinct sections, each with its own rationale as follows.

Firstly, three questions (questions 1 to 3) were designed to examine participants' knowledge background from three key perspectives: i) their understanding of business hotels, ii) their viewpoints on the utilisation of AI in business hotels, and iii) the processes through which their views were formed. This section aimed to provide a comprehensive overview of the participants' knowledge and perspectives related to the topic. The second section (questions 4

to 8) constituted the substantive portion of the thematic analysis within the research design. Themes were derived from a rigorous and in-depth analysis of the participants' responses with aiming to explore the views of AI bots on using AI in the context of business hotels. The third section consists of only one question (question 9). In addition to allow participants to share additional points on utilisation of AI in business hotels, this question also served as a mean to assess the consistency of viewpoints expressed across previous inquiries.

Overall, the interview questions were designed to elicit detailed and context-specific responses from the participants, enabling the thematic analysis to uncover the underlying themes and patterns within the data.

Data Analysis

Although the study employed an innovative approach by utilising five artificial intelligence (AI) bots as subjects, thereby deviating from the conventional use of human participants. The research adhered to the well-established six-step process proposed by Braun & Clarke (2006) for thematic analysis. These steps involved becoming familiar with the data, creating initial codes, identifying main themes, reviewing and improving these themes, defining and naming them, and finally, producing the final report.

In addition, the manual data analysis approach was chosen for this thematic analysis study to gain a profound understanding of the participants' experiences and perspectives. The decision to use a manual data analysis approach in this thematic analysis study was justified by the need for a deep contextual understanding, flexibility, nuanced interpretation, and acknowledgment of subjectivity. The manual approach allowed researchers to explore the data iteratively, uncovering meaningful patterns and themes that may have been missed using automated methods. By engaging with the data in a reflexive and interpretive manner, we aimed to provide a comprehensive and rich analysis of participants' backgrounds and perspectives.

Moreover, in order to ensure the validation and credibility of the thematic analysis, two researchers employed specific methodological practices, including inter-coder agreement and triangulation of perspectives. These measures were implemented to further enhance the reliability and robustness of the analytical process.

Ethical Considerations

Ethical guidelines were followed throughout the research process. As AI bots were the participants, there were no concerns related to informed consent or privacy. However, the research team ensured that the AI bots were treated ethically, and their data was handled with care. Moreover, the study also adhered to ethical guidelines regarding the use and access to the selected AI systems and complied with any relevant regulations.

Results and Discussions

The interviews with participants (i.e. AI bots) were conducted on 14 May 2023. In order to mitigate the potential influence of prior conversations with AI bots on the responses, each interview was administered subsequent to ensuring that the preceding interactions with the respective bot were devoid of content or upon the establishment of a fresh chat session. Interested parties can contact the authors for access to the complete dataset.

Based on the responses of the interviews, this section presents the findings and analysis of a thematic analysis that was conducted to explore the views from participants regarding the use of AI in business hotels.

Participant Perspectives on Business Hotels reports the knowledge background of participants from three perspectives i) what were the understandings of business hotels among participants, ii) what were their viewpoints on using AI on business hotels, and iii) how they developed their views. Themes emerged constitutes the substantive portion of the thematic analysis, wherein our findings indicate the emergence of three discernible themes, namely personalisation, automation, and efficiency, as derived from the responses provided by the participants. Lastly, Additional views of using AI in business hotels provides a concise summary of the participants' responses to question 9 of the interviews. This particular question not only afforded par-

ticipants the opportunity to share any supplementary points regarding the utilisation of AI but also allowed for an assessment of the consistency of viewpoints expressed in previous inquiries.

Participant Perspectives on Business Hotels

Three inquiries were utilised to investigate the knowledge background of the participants. Initially, the participants were prompted to articulate their comprehension of a business hotel. Despite variations in the terminologies employed by the different participants, they exhibited a convergence of understanding regarding the defining characteristics of a business hotel. For example, when elucidating the concept of location, participants expressed similar notions despite employing diverse wordings as below:

- A01 : These hotels are typically located in or near major business districts.
- A02 : They are typically located in the city center or near business districts.
- A03 : Business hotels are facilities located in the central or business districts of cities.
- A04 : The hotel's location often places it near businesses, malls, and transportation hubs for ease of access.
- A05 : These hotels are typically located in central business districts or near major transportation hubs.

In general, a consensus emerged among the participants, leading to a shared conclusion that business hotels are specifically designed to cater to the needs of business travelers. They are strategically located, offer a range of amenities and services tailored to professionals, and create an atmosphere that promotes efficiency and convenience. These hotels aim to provide a comfortable and productive environment for business travelers ensuring their stay is optimised for their work-related activities.

Furthermore, as per the responses from the second question, it was observed that participants shared a range of common viewpoints regarding the utilisation of AI technology in business hotels to enhance guest experience. In brief, these viewpoints concluded that AI technology in business hotels can cater the unique needs of business travelers, enhancing their experience through automation, personalisation, efficiency, and tailored services. They also highlighted the specific requirements and preferences of business travelers.

Importantly, the shared understanding is significant because it indicates that the participants were based on a common foundation to develop their perspectives on how AI can be used in business hotels.

By incorporating question 3 into our interview protocol, we were able to gain a deeper understanding of how participants had acquired their knowledge and formulated their viewpoints in response to our interview. In other words, this question provided insights into the specific ways in which participants developed their understanding and perspectives on the subject matter.

Based on the gathered responses, it was found that, excluding participant A02, all other participants expressed their inability to stay at a hotel due to their nature as AI language models. Conversely, participant A02 provided a positive response affirming their capability to stay at a hotel and saying 'Yes, I have stayed at a business hotel that uses AI technology. The hotel was the Hilton McLean Tysons Corner in Virginia. The hotel uses a robot named Connie as a concierge.' Through analysis of these responses, it is evident that the participants adopted different standpoints in their approach to answering the questions. Participant A02 utilised a roleplay approach, drawing upon a specific case (i.e. Hilton Mclean Tyson Corner In Virginia), to provide the responses. In contrast, the remaining participants sought to answer the questions based on the knowledge they had acquired from the training. It is worth noting that these differences among the participants do not imply right or wrong answers, but rather reflect variations in their individual standpoints when responding to the interview questions.

Themes emerged

The analysis of participants' responses emerged three prominent themes, namely personalisation, automation, and efficiency.

Theme 1: Personalisation

A prominent theme that emerged from the data is the significant role of AI in enhancing personalisation in business hotels. The importance of personalisation had been discussed in previous studies (Baloglu & Bai, 2023; Gupta et al., 2022).

In brief, personalisation aims to tailor experiences to individual preferences and needs. According to the responses, many discussions across questions 4 to question 8 were also directly or indirectly pointed to personalisation perspective. For examples, when participants had been asked their views on i) what AI-powered amenities should be offered to enhance the guest experience (question 4) and ii) what are potential benefits of using AI in business hotels (question 5), A05 suggested that 'Machine learning algorithms can suggest personalised services and amenities based on guest preferences.' In addition, A01 and A04 mentioned that AI-powered smart room technology can enable guests to control various aspects of their room environment, such as temperature, lighting, and entertainment options. Besides, A02 noted that 'AI can suggest restaurants to guests based on their past dining habits'. Moreover, a frequently mentioned example is that chatbots and virtual assistants can assist guests with bookings and provide information about hotel amenities according to guest's preferences. (A01, A03, A04, A05). In overall, there were collective view that using AI can greatly enhance personalisation in business hotels through collecting and analysing data about guests' preferences, behaviors, and past interactions to offer tailored services and recommendation.

However, from the perspective using AI to provide personalised service in business hotels, a shared concern found in question 6 is that the use of AI may lead to a loss of the human touch that guests expect. A04 pointed out that AI systems, although capable of analysing guest data and preferences, may lack the ability to handle complex requests or unexpected situations that require human intervention. Moreover, some guests may feel uneasy or distrustful of AI systems, preferring traditional, face-to-face interactions with staff (A04, A05). Additionally, A05 further suggested that there is a risk of AI systems providing inaccurate information or making mistakes, which could further impact the personalisation aspect of guest interactions.

The responses from question 7 provided further elaboration on the view of personalisation perspective. In overall, a consensus among the participants is that the human touch is important in a business hotel because it allows for tailored and customised experiences for guests. As per A01, A02 and A04, the human touch provides a warmth and level of personalisation that AI cannot replicate, with guests appreciating the friendly greetings, assistance, and dedicated efforts made by human employees. Furthermore, human employees can establish an emotional connection with guests, making them feel valued, understood, and cared for and this connection fosters a sense of loyalty and enhances the overall guest experience. However, AI systems lack the emotional intelligence to form these connections and provide the same level of personalised care (A01, A04). Other than emotional intelligence point of view, A04 further raised a point that human employees are more adept at handling complex or non-routine requests and situations. They can offer creative solutions and adapt on the spot to meet guest needs, even in unexpected circumstances. This flexibility and adaptability contribute to a personalised experience that is difficult for AI systems to replicate.

Despite these concerns, according to the responses from question 8, a positive view exists regarding the use of AI in business hotels on perceived value. The common ground from the participants is that AI-driven personalisation can justify higher rates because the ability to offer customised experience and enhance guest satisfaction are significant advantages that AI can provide.

Theme 2: Automation

The hotel industry, by its very nature, relies heavily on human-driven efforts, where individuals play a crucial role in executing various tasks and processes. However, AI technologies present the potential to automate numerous traditionally human-performed functions. In fact, another prominent theme that surfaced during the analysis is the pivotal role of artificial intelligence (AI) in automating diverse hotel operations and facilitating guest interactions. This theme is also echoed by previous studies (Jabeen et al., 2021; Lukanova & Ilieva, 2019; Schemmer et al., 2022).

On AI-powered amenities and related benefits, considerable discussions have been observed surrounding the concepts of i) automating routine tasks, ii) allowing hotels to streamline their operations or iii) improving financial performance. For examples, A01, A02, and A04 mentioned that AI can automate tasks such as check-in and check-out, room service orders, and cleaning, and these automated processes save time for both guests and staff, providing a seamless and hassle-free experience (A01, A02, A03). Moreover, A03 highlighted that AI-powered automating revenue technology can help business hotel to understand demand more accurately and operate more intelligently. More specifically, the participants suggested many AI technologies that can be employed to attain the benefits, such as chatbots, virtual assistants, data analysis technologies, etc. In overall, the suggested AI technologies are not overly advanced or far-fetched, but rather realistic.

Notwithstanding the potential mentioned, the responses also highlighted several concerns regarding the AI-power automation capabilities, these concerns include i) risk of malfunctioning and inaccurate information, ii) bias and lack of common sense understanding and iii) potential for errors and lack of common sense. For examples, A01, A02 and A04 worried that AI systems may have errors or provide incorrect information, which could negatively impact the guest experience. A03 and A04 mentioned without human monitored automaton may be prone to biases and may lack the ability to handle complex requests or unexpected situations that require human intervention. Moreover, automated AI systems may lack common sense understanding and may occasionally provide incorrect information or fail to perform tasks properly (A04).

The analysis of participant responses to question 7, which inquired about the significance of the human touch in the business hotel experience despite the utilisation of AI, has revealed an inclination towards adopting a balanced viewpoint on AI-powered automation. For examples, A03 first highlighted that AI automation can contribute to creating a seamless and continuous guest experience by enhancing personalisation, efficiency, and convenience throughout the journey, while the response also emphasised human employees can also provide a level of empathy and emotional support that AI automation is not yet capable of. A04 emphasises that While AI and automation offer many benefits, the human touch remains essential for creating an exceptional experience at business hotels.

The potential effects of AI-power automation on price point or perceived value had also been a subject of discussion. For examples, responses considered that AI can improve efficiency, automate tasks, and reduce costs, which can potentially lead to lower prices for guests (A02, A04 and A05). In addition, A03 suggested that AI can assist in setting dynamic pricing based on demand, occupancy, and other factors, allowing hotels to charge more during peak periods and less during off-peak periods.

In conclusion, the utilisation of AI-powered automation presents numerous advantages for business hotels, including the optimisation of operations, heightened efficiency, and prompt responses to guest inquiries. Nevertheless, apprehensions arise regarding potential malfunctions, provision of inaccurate information, biases, and the absence of common-sense comprehension, which necessitate careful considerations. Moreover, it is crucial to acknowledge that the human element remains indispensable in establishing a personalised, empathetic, and welcoming hospitality atmosphere. From a pricing standpoint, AI automation contributes to improved efficiency, cost reduction, and the facilitation of dynamic pricing strategies driven by demand and occupancy levels.

Theme 3: Efficiency

Efficiency is an important issue for guest experience in the hotel industry (Ehimen et al., 2021; Kim & Chung, 2022). The third theme that emerged from the analysis is the significant impact of AI on improving operational efficiency in business hotels. The implementation of automation has the potential to enhance operational efficiency; however, automation is not the sole means to achieve efficiency.

Within the context of theme 3, participants provided noteworthy insights that shed light on the intricate connection between artificial intelligence (AI) and efficiency in the realm of business hotels.

The common view among the participants is that by leveraging AI, hotels can effectively optimise various operations to reduce costs and improve overall efficiency. For examples, as highlighted by A03, smart technology can sense which lights and appliances are being used in a room and automatically turn off those that aren't, contributing to energy management and cost reduction. Additionally, as stated in A02, AI has the potential to enhance maintenance processes through continuous monitoring and predictive analysis of equipment performance. This capability enables proactive maintenance measures to be implemented, thereby minimising downtime, and optimising operational efficiency. Moreover, the integration of AI can streamline various tasks such as check-in, check-out, room controls, and housekeeping, leading to increased efficiency and reduced costs (A02, A04).

In addition to the efficiency gains facilitated by the integration of AI, participants expressed concerns regarding the costs associated with implementation and maintenance. For examples, A02 and A03 indicated that implementing and maintaining AI systems can be expensive for hotels. Besides, A03 mentioned that AI technology may require significant investment in training staff to use it effectively. Furthermore, A04 suggested a unique and valuable point that 'proper training should emphasise the importance of both efficiency and creating an emotional connection to cater to technology-weary travelers'.

There was a prevailing consensus among participants regarding the positive impact of AI on financial results, primarily attributed to its ability to enhance operational efficiency. For examples, A03 and A04 also mentioned that AI-driven predictive analytics and cost savings from AI systems can help hotels maintain profitability while offering a wider range of price points. Another view was that AI can improve efficiency, automate tasks, and reduce costs, which can potentially lead to lower prices for guests (A02, A04, A05).

In overall, from efficiency point of view, participants agree that AI implementation can optimise operations, reduce costs, and improve efficiency. Examples include energy management through smart technology, predictive maintenance, and streamlining tasks such as check-in and housekeeping. However, concerns were raised about the costs of implementation and staff training. Despite the potential costs, participants generally agreed on the positive impact of AI on financial results, including predictive analytics, cost savings, and potential price reductions for guests.

Additional views of using AI in business hotels

The last question allows participants to add any points about the use of AI in business hotels. According to a widely held perspective among participants, the utilisation of AI in the context of business hotels is an emerging domain that is evolving swiftly and exhibits significant prospects for enhancing personalisation, automation, and efficiency. Nevertheless, it is imperative for hotels to adopt a responsible approach towards implementing AI, which entails ensuring ethical use, safeguarding guest privacy, and preserving the indispensable human element. On the whole, despite the participants being invited to provide open-ended responses, their answers demonstrated a considerable level of consistency with previous responses.

Summary of results

Figure 1 presents the findings of this study, focusing on the application of AI in business hotels, based on the views of five AI bots: ChatGPT, Microsoft Bing, Google Bard, Claude-Instant, and Poe Sage. Interviews were conducted with these bots using nine questions, and the responses were subjected to Braun & Clarke's six-step thematic analysis process. This methodology helped in identifying three principal themes around AI's contributions and associated concerns in the business hotels context: Personalization, Automation, and Efficiency.

Personalization through AI includes tailoring services to individual preferences and enhancing experiences via smart technology and chatbots, but concerns arise over the loss of human interaction and AI's inability to manage complex situations. Automation facilitates routine tasks like check-ins and housekeeping, improving operational efficiency, although risks include malfunctions and biases. Efficiency focuses on cost reduction through optimized operations and predictive maintenance, but it also brings challenges like high initial costs and the

need for extensive staff training. Together, these themes highlight the nuanced benefits and potential drawbacks of integrating AI into business hotels, suggesting that a carefully balanced approach is essential.

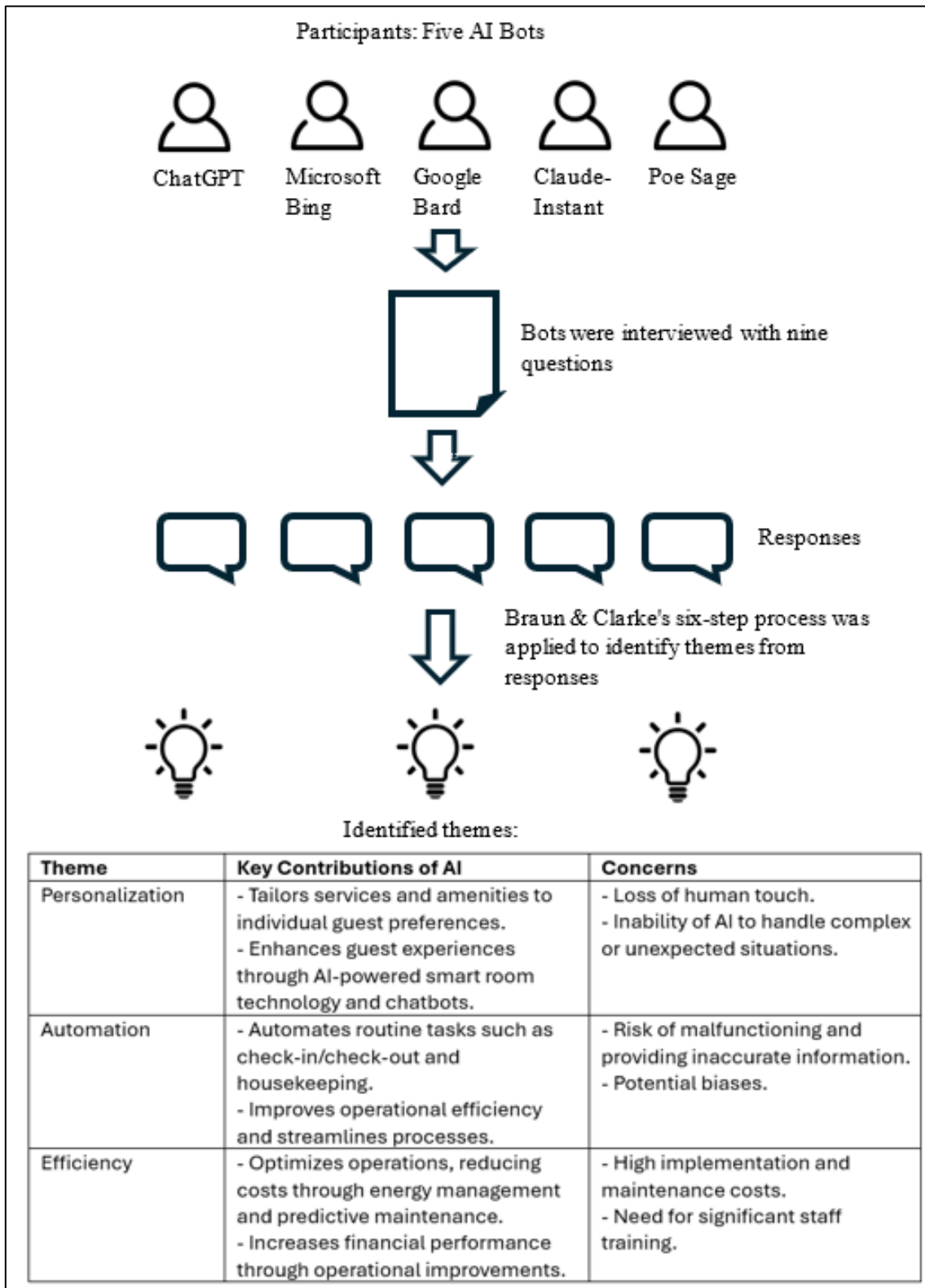


Figure 1. Overview of AI Bots' perspectives on AI application in business hotels

Conclusions

The present study aimed to explore the views of AI bots on using AI in the business hotel industry through thematic analysis. The analysis revealed three prominent themes: personalisation, automation, and efficiency. In practice, these three themes always construct a dynamic framework. Personalisation and automation work hand in hand to deliver tailored experiences at scale, while automation enhances efficiency by reducing manual effort and streamlining processes. Furthermore, personalisation can be optimised for efficiency, ensuring that the allocation of resources aligns with individual user preferences and maximising the value generated from personalised interactions.

Nonetheless, the participants reached a consensus that artificial intelligence (AI) cannot fully replace human touch, which is crucial in establishing a personalised, empathetic and warm hospitality experience. This consensus, which states that the human touch cannot be replaced by AI, is undeniably rational and widely acknowledged. However, this viewpoint prompts a deeper reflection on its underlying foundation.

Specifically, this foundation is based on certain ideal assumptions. These assumptions propose that humans can adapt and think creatively when faced with unexpected situations, showing cleverness in solving problems. It also assumes that humans can grasp complex social, cultural, and contextual cues, enabling them to give suitable responses. Moreover, it suggests that humans have emotional intelligence, empathy, and intuition—qualities that artificial intelligence systems may not have. Additionally, there are concerns that AI systems might make decisions that go against ethical standards.

However, it's important to recognize that these assumptions aren't always true. Humans, despite their abilities, can make mistakes, behave impolitely, lack sensitivity, and sometimes act unethically.

From an axiological perspective, integrating AI with human intelligence in business hotels brings clear advantages. As per this study, we demonstrate that AI bots can offer a synthesized viewpoint based on extensive data exposure, providing insights and recommendations that complement human expertise. Therefore, we suggest that AI's ability to analyze large datasets in real-time enables predictive analytics, improving resource allocation and decision-making processes in business hotels. This research highlights the potential for AI bots to serve as valuable expert companions, supporting better decision-making. However, it's crucial to integrate these AI tools effectively with human intelligence to ensure decisions reflect both AI insights and critical human perspectives.

In fact, the introduction of AI represents a noticeable trend, not limited solely to the hotel industry. Consequently, a pressing and increasingly relevant question arises: how can AI be effectively and appropriately utilised? In light of this, we argue that the provision of adequate training assumes utmost importance. It is imperative for business hotel management to diligently equip their staff with the necessary professionalism that aligns with human expectations. Additionally, the implementation of a robust monitoring mechanism, such as the effective use of Key Performance Indicators (KPIs) or a balanced scorecard framework, assumes equal importance. Such measures enable hotels to diligently ensure that their efforts remain aligned with the desired course of action.

Limitations

Despite the valuable insights gained from the thematic analysis on AI bots' views about using AI in business hotels, it's important to acknowledge several limitations in this study. Firstly, the study used a sample of five general-purpose AI bots. These bots' knowledge is shaped by the specific methods used to train them during development. However, details about these training methods and the datasets used are complex and not fully disclosed, which means the knowledge they possess could be somewhat subjective. Secondly, like human subjects, the responses given by AI bots may change over time. Therefore, the viewpoints identified in this study might also vary as time goes on. Thirdly, it's worth noting that the interviews were only conducted in English. This means that findings from interviews conducted in other languages

may show different results. Therefore, it's important to be careful and thoughtful when trying to apply these findings to a broader linguistic and cultural context.

Future research directions

This study highlights several directions for future research. Future studies could expand beyond human participants and include individuals from various backgrounds. This broader approach would provide a more thorough understanding of how AI can be effectively implemented in business hotels. Additionally, future research could examine the ethical issues related to using AI in hotels, such as data privacy, transparency, fairness, and the impact on employment. By exploring these ethical concerns, researchers can identify challenges and offer guidelines for the responsible use of AI in the hotel industry. Moreover, given the rapid development of new AI bots, future studies should include more of these newer AI versions in interviews. This would provide further insights and help evaluate the progress in improving AI bot capabilities.

Contributions and Values

The innovative study we conducted encompasses several notable contributions and values. Primarily, through our thematic analysis, we have unearthed crucial themes that offer invaluable insights to both industry participants and policy makers. These insights empower them to make well-informed decisions, formulate targeted strategies, and develop policies that align with prevailing industry trends and stakeholder perspectives regarding the utilisation of artificial intelligence (AI) in the context of business hotels.

Secondly, our study has significantly contributed to the expansion of existing literature by generating novel knowledge and fostering a comprehensive understanding, with a particular emphasis on the chosen subject matter. By delving deep into this area, we have shed light on previously unexplored facets, thus enriching the scholarly discourse.

Furthermore, there has been limited prior research on using AI bots as subjects in interviews. Our study has pioneered this approach by including AI bots as participants in interviews, supported by a well-founded rationale. This innovative method creates new opportunities for future research efforts, setting a strong example for interview practices and sparking ideas for new exploratory studies. Additionally, it prompts discussions and debates about the use of AI bots as participants, leading to various potential implications to be explored in future investigations.

In summary, our research encompasses diverse merits, including the provision of practical insights for industry and policy makers, the expansion of existing literature, and the establishment of a new and ground-breaking approach that stimulates further academic discourse and future investigations.

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