Current Issues in Tourism

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/rcit20

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Pola Q. Wang

To cite this article: Pola Q. Wang (02 Jan 2024): Personalizing guest experience with generative AI in the hotel industry: there's more to it than meets a Kiwi's eye, Current Issues in Tourism, DOI: 10.1080/13683500.2023.2300030

To link to this article: https://doi.org/10.1080/13683500.2023.2300030

Published online: 02 Jan 2024.

CURRENT ISSUES IN TOURISM
https://doi.org/10.1080/13683500.2023.2300030

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Personalizing guest experience with generative AI in the hotel industry: there's more to it than meets a Kiwi's eye

Pola Q. Wang

School of Hospitality and Tourism, Auckland University of Technology, Auckland, New Zealand

ABSTRACT

Since its launch in November 2022, ChatGPT has pioneered a new era in AI, globally acclaimed for its content creation and language understanding. This advancement is reshaping industries like hospitality, offering innovative applications but also raising ethical and efficiency challenges.

In the context of New Zealand's hotel industry, renowned for its vibrant and inclusive 'Kiwi' hospitality culture, the idea of incorporating generative AI offers a novel perspective. While its application could potentially enhance service efficiency and help to alleviate staff shortages, integration with the country's deeply rooted cultural values demands a carefully considered approach.

This study adopted a qualitative methodology using semi-structured interviews with hotel managers and AI experts in New Zealand. The findings revealed that generative AI holds promises for cost savings, work efficiency and meeting specific social group demands. Concerns have been raised, however, relating to the ability of AI to handle complex interactions, incorporate a sense of Kiwi culture, respond appropriately to service contingency events, maintain data privacy and meet the generational service preferences of guests. The absence of clear AI legislation has led to cautious interest among hotel managers, restrained by concerns around legality, privacy and service quality.

ARTICLE HISTORY
Received 3 September 2023
Accepted 22 December 2023

KEYWORDS
Generative AI; ChatGPT; hotel industry; New Zealand; Kiwi hospitality

Introduction

A trend has emerged in recent years where organizations are placing an increasing emphasis on driving technological innovation, which has sparked a surge of interest among researchers (Kakatkar et al., 2020; Mondal et al., 2023; Mustak et al., 2021). Artificial Intelligence (AI) has seeped into various facets of modern service, becoming a catalyst for innovation. From automating domestic chores and healthcare to transforming customer service into self-service (Huang & Rust, 2018), AI's encroachment is evident. Tourism operators have also been actively seeking innovative avenues to explore the potential applications of new technology to enhance guest experience (Altinay & Kozak, 2021). In the hospitality industry, robots are replacing human greeters, significantly impacting and will ultimately transform virtually customer-facing services (Wirtz et al., 2018). Wirtz et al. (2018) compared service robots to front-line service employees and discussed how service robots can be applied to different types of services.

CONTACT Pola Q. Wang pola.wang@aut.ac.nz

Two divergent strands of research have emerged. One predominantly celebrates AI's positive impact in service technology (Huang & Rust, 2018; Marinova et al., 2017; Rafaeli et al., 2017). This stem of the literature suggests an upward trend in the adoption of self-service technologies and anticipates an expansion of the service sector. In contrast, the economic literature is more cautious, focusing on AI's repercussions on employment. It explores AI's potential to outperform humans in specific tasks, such as medical diagnosis (Esteva et al., 2017), and its role in job displacement (Autor & Dorn, 2013). Though service roles have traditionally been deemed harder to automate due to the need for human interaction and contextual understanding (Autor & Dorn, 2013), this is increasingly being contested following the release of ChatGPT in late 2022 which is based on the technology of generative artificial intelligence (AI)

Generative AI refers to a class of AI algorithms and models that can generate new content or data that was not explicitly programmed or provided as input during training (Dwivedi et al., 2023b). Generative AI is often used in creative applications such as those associated with art and music, but it can also be used for more practical applications by learning patterns and structures in a large dataset during training, and then generating new data that follows the same patterns and structures (Hacker et al., 2023). Researchers have focused on investigating how generative AI can be used in the tourism industry to reduce costs and enhance service accuracy (Wong et al., 2023). As AI technologies continue to evolve, the hotel industry is increasingly considering their potential for enhancing guest experiences, improving operational efficiency and driving business growth (Doborjeh et al., 2022; Mariani & Baggio, 2022).

One of the crucial advancements in generative AI in the service industry is the incorporation of memory and learning capabilities. This allows the generative AI system to remember and learn from previous interactions with customers, thereby producing customized service over time. Not only does this make the system more responsive, but it also allows for greater personalization, which is a critical factor to enhance customer satisfaction. The advent of generative AI has ushered in transformative shifts, reshaping the industry's landscape by enabling the creation of unique experiences that seamlessly blend virtual and physical realms (Mondal et al., 2023). Recent literature has reported the positive impacts of generative AI's applications on customer engagement and loyalty, proving its ability to tailor travel itineraries to individual preferences, and to optimize the management of hospitality organizations (Carvalho & Ivanov, 2023; Iskender, 2023; Mondal et al., 2023). Moreover, rule-based chatbots are also being developed to comply with firm-specific rules, such as policies, product details, processes and pricing structures. This ensures that the system can operate autonomously while still aligning perfectly with the firm's objectives and guidelines. This level of automation is particularly beneficial when integrated with the firm's existing systems like customer data lakes and Customer Relationship Management (CRM) systems. Nonetheless, rule-based chatbots may struggle with handling complex queries due to their limitations in understanding natural language and grasping the subtleties of human dialogue (Kalla & Smith, 2023).

As we look to the future, the challenge will be to ensure that these technological advancements complement rather than replace the human element that is fundamental to hospitality (Murphy et al., 2017). The strategic deployment of AI should enhance the guest experience, offering convenience and personalization while preserving the warmth and personal connection that characterize the industry. However, integrating the use of AI into the hotel industry is not without its challenges, and concerns have been raised relating to job displacement, burnout, turnover intention, data privacy and customer acceptance of technology (Kong et al., 2021; Li et al., 2019; Nam et al., 2021; Wirtz et al., 2018; Zhang & Jin, 2023). Researchers and industry experts agree that AI-powered automation systems can replace human workers, leading to a reduction in employment opportunities (Pillai et al., 2021); in fact, according to Manyika et al. (2017), hospitality is among the top industries susceptible to job displacement due to automation, as many tasks in this industry, such as front desk, housekeeping and food service, are highly repetitive and can easily be automated. Another significant challenge associated with AI implementation, is data privacy. AI systems rely on vast amounts of data to function effectively and this often contains sensitive information about guests, such as their personal and financial

details. Unless guests' data is being used appropriately and ethically, privacy could be violated and personal details leaked to other service providers. As summarized by Wirtz et al. (2018), the use of technology such as service robots will provide ethical and societal challenges for consumers, markets and organizations, as well as across the entire societies.

This study adopted a qualitative method, involving semi-structured in-depth interviews with New Zealand hotel managers and AI experts. The research questions included: (i) What are the potential benefits of using generative AI in New Zealand's hotel industry?, (ii) What are the main challenges associated with the implementation of generative AI in the New Zealand's hotel industry? and (iii) How are hotels in New Zealand currently using generative AI, and what are the implications for guest experiences and business operations? The findings of this study provide insights into the potential benefits of using generative AI in the hotel industry, the main challenges associated with its implementation, and how hotels in New Zealand are currently using the technology. The findings also offer implications for hotel operators and industry practitioners who may be considering the adoption of generative AI in their businesses.

Literature review

The advancement of generative AI and the emergence of ChatGPT

Generative AI has emerged as a distinctive facet of AI technology with the ambitious goal of imbuing machines with human-like reasoning and behavioural abilities (Deng & Lin, 2022; Gimpel et al., 2023). The AI landscape encompasses a diverse array of applications, primarily hinging on machine learning, deep learning and natural language processing. 'Machine learning' is generally referred to as 'the development of algorithms that enable computers to learn patterns and make decisions based on data, without being explicitly programmed' (Mitchell, 1997). It encompasses various techniques and approaches, from supervised to unsupervised learning, and serves as the foundation for predictions. 'Deep Learning' is a subset of machine learning that deals specifically with neural networks containing many simple connected processors, i.e. neurons (Schmidhuber, 2015). These models are particularly effective for tasks such as image and speech recognition, as they can automatically and adaptively learn spatial hierarchies of features from the input data (LeCun et al., 2015). 'Natural language processing' encompasses various forms of traditional machine learning and rule-based methodologies, with a focus on the interaction between computers and human language. It combines computational and linguistic techniques to enable machines to process, understand and generate human language (Jurafsky & Martin, 2019), and employs algorithms to decipher and generate text in a manner that simulates human-like conversations (Deng & Lin, 2022).

In November 2022, the introduction of ChatGPT (Chat Generative Pre-training Transformer), a product of OpenAI, marked a significant shift in the digital landscape. Within just 2 months of its debut, it had garnered a staggering 100 million active users, catalysing discussions across multiple academic domains (Gilson et al., 2023). ChatGPT functions as a versatile chatbot, equipped with the ability to generate human-like text (Aydın & Karaarslan, 2022). Operating as a conversational interface, ChatGPT builds upon the GPT large language model foundation, empowering AI applications to produce textual content (Gimpel et al., 2023). Through training on vast textual data, the GPT model undergoes unsupervised learning to discern intricate statistical patterns of human language, thereby forming the foundation for generating contextually coherent responses in line with user inputs. During interactions, as users input messages or queries, the GPT language model employs this foundation to anticipate and produce personalized responses, effectively mimicking human conversation (Dwivedi et al., 2023b). The latest iteration, GPT-4, boasts multimodal capabilities, accommodating diverse inputs such as text and images, and attaining human-level performance across varied domains (Gimpel et al., 2023). Its capacity for accurate reasoning, coupled with the ability to rectify logical errors, adds a layer of sophistication. This new approach overcomes the problems

of older AI systems and offers great AI and language skills, which can be used in areas like health, education and research (Dwivedi et al., 2023b; Gimpel et al., 2023).

Generative AI, exemplified by systems like ChatGPT, holds vast potential to revolutionize the hotel industry, an area that has not been extensively researched to date (Carvalho & Ivanov, 2023). The current study focused on the importance of understanding how such AI can be integrated into hotel operations, transforming the ways that they function and serve their guests. With the complex nature of hotel operations, from guest relations to backend logistics, it is vital to explore the way that use of 'digital assistants', such as ChatGPT (Stokel-Walker & Van Noorden, 2023, p. 215) can optimize efficiency, enhance guest experience, and set a new direction for the hospitality industry (Wong et al., 2023).

Technological innovations in the New Zealand hotel industry

The hotel industry plays a crucial role in in New Zealand's thriving tourism-focused economy, and is renowned for its warm and friendly 'Kiwi' hospitality, which often incorporates elements of the indigenous Māori culture to provide guests with an authentic and culturally enriching experience (Neill et al., 2015; Wang et al., 2017). Influenced by digital transformation from international hotel chains such as Accor and Intercontinental, several key technologies have been introduced to the industry and integrated into hotel operations to enhance guest experiences, improve efficiency and remain competitive in the market, e.g. mobile apps, contactless check-ins, and AI-powered services. Hotel mobile apps can provide guests with a range of convenient features, such as the ability to manage reservations, check-in remotely, access digital room keys and request services. Mobile apps can enhance guest convenience and enable contactless interaction – a development that has become increasingly useful following the COVID-19 pandemic. During nationwide lockdowns in 2020, SkyCity Entertainment Group, operators of New Zealand's largest casino, adopted electronic facial recognition technology to help reduce problem gambling (Gibson, 2020); this has sparked discussions amongst AI experts as to whether the private data collected could lead to misuse of personal information (RNZ, 2022).

Internet of Things (IoT) technology allows guests to control room features, e.g. lighting, temperature and entertainment systems, through voice commands or mobile apps, and these devices have found applications in smart hotels, such as the Mi-Pad Queenstown hotel (Gora, 2018). This level of automation and personalization enhances guest comfort and satisfaction (Lee & Kozak, 2018). To ensure continuous improvement and monitor guest satisfaction, hotels also employ guest feedback and reputation management systems. These platforms enable hotels to collect and analyse guest feedback and reviews, allowing them to address issues promptly and manage their online reputation effectively (Sparks, 2021).

Metaverse applications have also begun to reshape the landscape of hospitality, offering a range of digital experiences from virtual conferences to themed hotels and eateries. The use of virtual and augmented reality technologies (VR and AR) provides potential guests with immersive experiences (VR) allows them to virtually tour hotel facilities, while AR enhances on-site experiences with interactive information, adding a unique dimension to the guest experience (Tussyadiah et al., 2018; Yüksel et al., 2020). The unique facet of the metaverse lies in its capacity to foster social immersion, rather than merely sensory stimulation (Dwivedi et al., 2023a). The application of AI presents numerous opportunities for hotel operators to improve their operations and increase their competitiveness (Millauer & Vellekoop, 2019).

Generative AI applications in the hotel industry – the potential for personalized experiences

In the hospitality industry, the integration of generative AI plays an important role in enhancing guest interactions and service efficiency (Wong et al., 2023). As reported by Carvalho and Ivanov (2023), chatbots and virtual concierges provide immediate assistance, ensuring an uninterrupted

and fluid connection with guests, e.g. by providing information, taking orders, confirming reservations (checking in and out) and managing complaints. It acts as an extension of the human element, releasing staff to concentrate on the delivery of face-to-face experiences.

Generative AI can also be used to create personalized experiences. Through the analysis of individual preferences and past interactions, their algorithms can generate customized recommendations for activities, dining options, or even room configurations, tailoring each experience to a guest's unique preferences (Wong et al., 2023). They can also generate immersive virtual reality tours of hotel facilities and surrounding areas, enhancing both the pre-booking and on-site experiences (Tussyadiah et al., 2018). The key to these applications is the intelligent analysis of data, leading to significant improvements in customer satisfaction and loyalty (Peelen & Beltman, 2013).

Generative AI models can contribute to the dining experience. They can assist with menu planning by creating novel recipes tailored to guests' dietary requirements and local food trends, which could elevate dining to a new level of customization and innovation. In addition, generative AI can be used to create unique hotel artwork and interior designs that reflect local culture and themes, thereby creating a space that resonates personally with guests.

The personalization strategy can extend beyond direct customer interaction to hotel management, i.e. human resources, marketing, and methods of structuring pricing and sustainability practices (Carvalho & Ivanov, 2023). Human resources can use generative AI to create job advertisements, interview questions and the documents required for recruitment processes. It can be used by marketers to create promotional material, e.g. social media posts and email campaigns, and to analyse customer feedback (Mondal et al., 2023). Revenue management teams can devise dynamic pricing strategies personalized to various market segments by employing generative models that analyse factors such as demand trends and live competitor rates.

Methodology

This study followed an interpretivist paradigm, focusing on an in-depth understanding of the subjective experiences and perspectives of hotel managers and industry experts. The interpretivist paradigm is based on the belief that reality is subjective, and socially constructed; it emphasizes the significance of understanding the meanings, perceptions, and experiences of individuals within a specific context (Denzin & Lincoln, 2018). In this study, the interpretivist approach enabled the author to explore the subjective experiences and perceptions of hotel managers and industry experts regarding the integration of generative AI. This approach was valuable in uncovering diverse viewpoints, thereby enriching the understanding of the complex phenomenon under investigation.

The aim of this study was to gain insights into the current use, potential benefits, challenges and implications of generative AI in the New Zealand hotel industry. Two distinct groups of participants were selected as samples: AI specialists and hotel managers. To select the AI specialists, purposive sampling techniques were employed (Palinkas et al., 2015). AI experts with significant knowledge and experience in the field of generative AI were identified and invited to participate. These specialists provided valuable insights into the technical aspects and potential applications of generative AI. Convenience sampling with snowball technique was used to recruit hotel managers.

In total, two AI academic researchers and nine hotel managers (from food and beverage, client services, housekeeping, front office, finance, general management and a hotel owner) participated in the study. Data were collected through semi-structured in-depth interviews, which allowed for flexibility in probing and exploring participants' responses (Smith et al., 2021). The thematic analysis method was used to identify, organize, and interpret patterns and themes in the qualitative data collected (Braun & Clarke, 2023). The transcribed interviews were analysed using a coding framework, allowing emergent themes relating to potential benefits, challenges and implications of using generative AI in the New Zealand hotel industry, to be identified.

Findings

With an interpretivist approach using thematic analysis, the study identified three key themes associated with the use of generative AI in hotel operations: benefits, challenges and current practices. Benefits generally applied to cost-saving, work efficiency and the ability to meet specific social group demands. Challenges included perceived conflicts with 'Kiwi' notions of hospitality, the 'smartness' of AI, concerns about data security, and service contingency situations, i.e. concerns about how useful AI might be in an emergency. The findings also revealed resistance to the application of generative AI by some hotels, due mainly to the absence of regulations and concerns about data privacy.

Theme 1: benefits

Cost-savings

Ivanov and Webster (2017) provided a comprehensive analysis of the cost-benefits associated with adopting AI and automation in the hospitality industry. Their emphasis on long-term savings in customer service is in line with the prevailing trend of personalizing guest experiences. Buhalis and Law (2008) also recognized the transformative potential of AI and other technologies in reducing operational costs, and Buhalis and Moldavska (2022) concluded that using AI (voice assistance) for customer service in hotel operations can reduce transactional costs due to improved efficiency. Ozdemir et al. (2023) believe that there is no doubt that the application of AI in hospitality will continue to grow due to increased revenue and cost savings, particularly around labour.

Participants highlighted that generative AI could significantly reduce hotels' operational costs. By automating repetitive tasks, e.g. reservation management, concierge info desk, local tourism activity inquiries and room service requests, they could streamline their processes and optimize resource allocation, leading to cost efficiencies. Several respondents commented that the implementation of generative AI solutions may require less training compared with human staff, alleviating massive training costs. This ease of training would reduce onboarding time, making it convenient for hotels to effectively integrate new technologies into their operations.

> … if it doesn't cost much to install, train, and maintain these chatbots who can provide even just some of the concierge services, like giving out information, guiding guests to local attractions, suggesting bus routes, recommending restaurants, then it will save us hundreds of thousands of dollars a year. Say at least two full-time employees. – Front Office Manager

> We spend a lot on our reservation staff. If we can use generative AI for reservation management, I reckon we could free up some resources and cut costs significantly. – General Manager

> AI at the concierge info desk can streamline those repetitive local tourism activity inquiries. That's less time on the phone for our staff and more cost savings for us. – Front Office Manager

Work efficiency

As with the application of AI in a general sense, generative AI can also be utilized to improve work efficiency by automating routine tasks, optimizing resource allocation and enabling more informed decision-making. Such AI development as voice assistants and IoT have both been proved to result in improved efficiency in hotel operations (Buhalis & Moldavska, 2022; Leonidis et al., 2013). Pillai and Sivathanu (2020) reported that the use of chatbots for real-time solutions in travel automation, will greatly improve the efficiency of travel planning, and Carvalho and Ivanov (2023) added that ChatGPT and other similar models can contribute to further streamline customer services and increase productivity and efficiency in back-of-house operations.

This study's findings revealed that generative AI has the potential to improve overall work efficiency by handling routine tasks, allowing human staff to focus on more complex and personalized guest interactions, and answer questions beyond staffs' expertise. Participants acknowledged

that New Zealand's hospitality industry often faces staff shortages, particularly in peak tourist periods. Generative AI can potentially alleviate this challenge by assisting with various tasks, enabling hotels to maintain service standards even during periods of limited workforce availability. According to participants, generative AI could also offer a high degree of service accuracy if properly trained. For example, AI-powered chatbots can quickly provide guests with accurate information about hotel amenities, local attractions and events, ensuring a seamless and reliable service experience. This would improve the service quality and guest experience, ultimately contributing to higher customer satisfaction.

> We currently keep a dictionary-like booklet at our concierge desk. If customers can talk to a Generative AI for guidance, like a chatbot, which can generate reasonable answers from our database or the internet straight away, it will be so convenient, and I am sure customers will appreciate the high efficiency. At the moment, if a customer asks a difficult question, it may take our staff or even me quite a long time to find the answer. Sometimes I even have to use the internet myself to find out the answers to customers' queries. – Front Office Manager

> Yes, internet can provide answers to all sorts of questions. If the chatbot can generate speech as well, the work efficiency will definitely be doubled. Overall, we are just human beings and we don't know everything. Sometimes I prefer having a staff member during the night shift who has wine knowledge. When a customer asks questions about wines, it is often very hard to answer. – F&B Manager

> New Zealand's hotels often struggle with staffing, especially during the busy tourist months. By embracing AI for things like reservation management and guest services, the industry could ease those seasonal strains. – General Manager

> We have got more working holiday visa employees, thanks to the government's newly revised policy from last year. But still it would be of our benefit if robots can take some of our night shifts. You know, nobody wants to do night shifts. – Housekeeping Manager

Meeting the demands of specific social groups

People with disabilities represent a significant customer segment within the hospitality industry (Kim & Lehto, 2012). Extant literature has suggested that use of AI could improve accessibility, language understanding, emotion recognition and personalized service. Over a decade ago, Poria et al. (2010) already discussed how technological enhancements could enhance accessibility and satisfaction for people with disabilities in the hotel industry. Liu et al. (2024) concluded that AI such as voice control and voice menus, could be integrated into hotel operations to increase accessibility for visually impaired customers. Pardo et al. (2022) commented that from a human–computer interactional aspect, a hybrid or interactive synergy AI model would be able adapt to various linguistic and cultural nuances; this could be used to provide personalized services to guests from diverse linguistic backgrounds. Seifert et al. (2022) revealed that there has been an increasing acceptance and a higher degree of usability for social interactions. Artificial Intelligence has the potential to be trained to understand certain human emotions, and this could assist hotels in offering personalized experiences, and recognizing specific needs and preferences, especially for those with disabilities or cultural differences.

Participants of the study recognized the potential of generative AI to cater to the needs of specific social groups. Findings acknowledged that generative AI-powered interactive translation services could enhance inclusivity and foster a welcoming environment for all guests; the language factor would be especially relevant for international travellers, helping them to feel welcomed and appreciated. Moreover, the potential ability of generative AI to instantly translate a language would facilitate smooth interactions for check-ins, concierge services, room bookings and in-room assistance.

> We are currently developing a chatbot who can answer some simple questions, direct customers to different departments, and recognise different language input. It's slightly different from the chatbots you currently use on other websites like Spark because of the multi-lingual function and it is not used as a screening tool

> to direct people to different teams. It will potentially improve our guests' confidence to communicate and explore without any language barriers especially during booking process. – Front Office Manager

> I can see tremendous potential in leveraging generative AI to provide seamless multilingual services for our international guests. The majority of our staff is required to speak a second language due to the cultural diversity of our customers. Imagine offering instant translations at check-ins and at the entrance with interactions and fun jokes, creating a welcoming environment for our customers from around the world. It would undoubtedly enhance their experience and foster better communication throughout their visit. – F&B Manager

> I see an opportunity to create a more inclusive and accessible environment with the assistance of generative AI. For example, it could assist visually impaired guests in navigating our hotel or help them with self-services by providing text to speech assistance. – Housekeeping Manager

Theme 2: challenges

Conflicts with Kiwi hospitality

Kiwi hospitality embodies the warm and welcoming attitude inherent to the New Zealand culture. The Māori social principle of 'manaakitanga', representing hospitality, reflects, 'the custom of offering hospitality and kindness to guests, [and] is central to making people feel welcome and is inherent within the Māori ethos' (p. 13; Hall, 2012). As discussed by Philip-Barbara (2011), manaakitanga embodies 'good old kiwi hospitality' and is all about making people feel welcome and caring for guests. Martin (2010) noted that Kiwi hospitality is not money driven – manaakitanga is about exchanging kindness and respect and, 'does not involve the exchange of money' (p. 129). Manaakitanga is a value deeply rooted in the indigenous Māori culture and is increasingly recognized in the hospitality industry (Neill et al., 2015). Kiwi hospitality is known for treating guests as part of the family, emphasizing a personalized and heartfelt connection between host and guest. It goes beyond mere service provision, and creates a friendly and inclusive informal environment. In the hotel industry, Kiwi hospitality is reflected through personalized service, unique cultural experiences, and warm interactions with guests. New Zealand hotels offer a blend of international standards and indigenous traditions that create an exceptional guest experience. Kiwi hospitality translates into enhanced customer satisfaction, loyalty and word-of-mouth promotion, and Tourism New Zealand's campaigns also promote the notion, weaving it into the brand identity of the nation as a tourist destination.

Kiwis speak out on ChatGPT's ability to use the Māori language.

> It's part of our identity, part of who we are as New Zealanders. There is just so much more to the language than an AI being able to translate what you want to say.-Sonny Ngatai (Gerritsen, 2023).

> Designing products for our people needs to be done by Māori hands. Lauren Skogstad (Springload, 2023)

While participants recognized the potential efficiency and innovative applications that generative AI might offer, there is also a prevailing sentiment among hotel managers that it may conflict with the deeply ingrained cultural values, warmth and personal connection that define the Kiwi approach to hospitality. Manaakitanga is considered to be something that AI cannot authentically replicate, and the human touch and sincerity that are synonymous with Kiwi hospitality appears to be at odds with its more mechanical aspects.

> Chatbots cannot replace my staff. They are not part of hospitality. Hospitality is interactions, caring, and exchange of emotions. – Housekeeping Manager

> We integrate Māori traditions into our services, providing an authentic experience that isn't about transaction, but connection. – General Manager

> Kiwi hospitality is not just about cleaning a room. It's about preparing a welcoming space for our guests. – Housekeeping Manager

> You must be joking! Kiwi hospitality can't be replaced by a tool! It's just ridiculous to rely on a chatbot to provide our personalised service. – Front office Manager

> Yeah, Na. It (ChatGPT) can translate by the book but it cannot make our guests feel welcomed and happy. It can't express emotions like kind, resilient, supportive, welcoming, caring, passionate, and so much more. We care about our guests. They are so important to our hotel. We ask our staff to go extra miles to provide the best and unforgettable experience for our guests. That's what we are looking for when recruiting our staff. – F&B Manager

Artificial intelligence smartness

It is essential to recognize that such generative AI systems as ChatGPT might reflect biases and prejudices found within the data on which they are trained (Dwivedi et al., 2023b; Paul et al., 2023). This issue requires careful attention to ensure that the model does not display biased or discriminatory behaviour, especially in the tourism context, when addressing sensitive matters related to race, gender or religion. These biases can quickly spread misinformation to a broad audience, leading to hostility, discrimination, criminal activities and other societal problems (Armitage, 2023). Pillai and Sivathanu (2020, p. 3218) suggested that chatbots providing customer service in the hospitality need to be trained in the aspects of customization, personalization, interactivity and perceived enjoyments, and understand its influence on the customer service and value. Seifert et al. (2022) also drew attention to the significant disparities that exist between the human attributes of emotion, autonomy and intelligence, and the features displayed by social robots. These challenges pose risks that could negatively affect the guest experience, leading to profit-driven attitudes and unsettling memories of a journey – the opposite of the concept of kiwi hospitality or manaakitanga.

Participants expressed concerns about the perceived 'smartness' of generative AI. They commented that while AI systems can efficiently handle routine tasks, human staff may still be preferred for handling the complex and emotional interactions that demand empathy and understanding.

> You can train generative AI to seek answers to your preferences, but it is still impossible to limit the database ChatGPT uses at the moment. It's like our human brain. You cannot predict where it seeks information from, which database, which platform. It's random. – AI academic researcher

> What if the generative AI translated the order wrong, as you know, the majority of our customers do not speak English fluently, it's going to create very messy situations for us and decrease satisfaction and the hotel reputation. – F&B Manager

> No, no replacement definitely. I can train my staff to use and supervise chatbots to automate our check-in process, but it will need a close supervision all the time and can't replace a compassionate conversation between our staff and our guests. – Front office manager

> It has some merit in imitating human emotions. When it doesn't meet your expectations, it will apologize and say sorry to you. It will appreciate your compliment. But it's impossible to train generative AI to fully get the subtle human touch. – AI academic researcher

> I believe it requires a lot of adjustment and improvision before we can invest in it for our day-to-day operations. We are in the business of human connection and that's what we call hospitality. – General Manager

Concerns around data security

A number of recent researchers have expressed concerns around using AI to collect customer data. Seifert et al. (2022) discussed the ethical considerations and potential dissatisfaction caused by technology, hinting at the importance of balanced AI implementation. Jobin et al. (2019) and Hagendorff (2020) analysed and challenged the current AI ethics guidelines from various perspectives, including transparency, justice, non-maleficence and responsibility. Mittelstadt et al. (2016), Whittlestone et al. (2019) and Bietti (2020) investigated the ethical and societal implications of AI for public interest and legal challenges. Lobschat et al. (2021) proposed a new concept of corporate digital responsibility (CDR) which encapsulates the guiding principles and standards that steer an organisation's decision-making when it comes to digital-specific concerns (p. 876). This novel concept serves as

the ethical and operational compass, directing how a company navigates the complexities inherent in digital issues especially in the service industry where intangible elements such as customer data can be easily digitalised (Wirtz et al., 2023). As pointed out by Wirtz et al. (2023), AI also poses significant ethical dilemmas, including issues of fairness and privacy, which have escalated to a level raising concern about human rights violations.

There have been a number of concerns expressed regarding the use of ChatGPT for Māori language translations.

> When it comes to using these tools in our day-to-day lives, I ask you to consider what you are using them for. Think about some of the ethical and cultural implications of using them. – Lauren Skogstad (Springload, 2023)

> Where I would put my flag up for data sovereignty is when it comes to our stories, or our narratives, or our tikanga, stuff like that … My hope is that tools like ChatGPT can help preserve and use [Te Reo], but we still need the human element to input into the language, and to check that we aren't using incorrect sources. – Sonny Ngatai (Gerritsen, 2023)

Findings also revealed that data privacy and security were major concerns raised by participants, who emphasized the need for stringent data collection and maintenance protocols to protect sensitive guest information and avoid potential breaches that could erode trust and harm a hotel's reputation.

> We are not allowed to use ChatGPT at work for privacy purposes. Not even for report writing! – Housekeeping Manager

> Guest privacy is critical … We are often presented with multiple credit cards and I don't think Generative AI can be trained to solve problems like this. Even with our guests' basic personal information, such as contact phone number and living address, we have very strict protocol to store and use the information. I don't think generative AI can be entitled to use these confidential data. – Front Office Manager

> Housekeeping services are highly confidential. We have to train our staff on a regular basis to make sure they understand the serious consequences if privacy is breached … I'm not sure how you can train a generative AI to keep data private and adhere to the Privacy Act. – Housekeeping Manager

> I don't want to be liable if anything happens around the confidentiality of our business. Nobody wants to be the first ones to use the technology because there are no regulations to either restrict or guide the adoption or regulate how is can be used in New Zealand – Finance Manager

Service contingency situations

The findings are consistent with extant literature on the application of AI in crisis management, which warns of the lack of efficiency of generative AI in unexpected scenarios and contingency situations. Frey and Osborne (2017) also suspect that the automation of the workforce and over-reliance on technology can lead to disastrous consequences in the event of service contingency planning. Lim and Zhang (2022), however, suggest that data quality and the robust systems of AI are critical when it comes to unforeseen events. They are also crucial for forecasting the uptake behaviour of cutting-edge technologies powered by machine-learning algorithms.

This study's findings also reinforce that reliance on Generative AI may lead to challenges in handling unexpected situations or crises, such as natural disasters or technology failures. The ability of human staff to adapt to unforeseen circumstances is believed to be crucial in maintaining service continuity during such events.

> I don't think I can persuade my guests that AI can look after their safety. – Housekeeping Manager

> Even during a fire drill, some guests are behaving in a crazy way. You need to have proper training and loads of hospitality work experience to stay calm and escort your guests to the assembly point. You cannot expect your guests to be able to communicate efficiently during an emergency. That's why we have regular drills. – Front Office Manager

> AI cannot replace human. Our guests' safety is always our priority. We cannot refer our guests to speak with a machine in the event of an emergency. That's not hospitality. – F&B Manager

> When it comes to contingency situations, you need to have emotional intelligence, as we always emphasise to our staff, emotional intelligence is the number one hospitality quality we are looking for when recruiting new staff. General Manager

Service encounters and generational preferences

According to Bajrovic (2021), the novel experience that new technology brings can be attractive to guests, especially for those who are more technologically savvy and are already familiar with virtual assistant software, e.g. Alexa, Google Assistant and Siri. These customers are more comfortable with interacting with generative AI and would value the convenience and innovation that it provides, as well as encountering fewer challenges when utilizing them in hotels. Lukanova and Ilieva (2019) suggest that hotel operators examine the ways in which consumers engage with technology in daily life, in order to tailor their services to meet guest needs and enhance the acceptance of AI. Baloglu and Bai (2023) report that differing generational preferences for service encounters may pose a challenge. Younger guests may embrace AI-powered services, while older guests may prefer human interactions. Hotels will need to strike a balance between AI and human staff to meet varying guest preferences.

The findings of this study highlight that the adoption of a generic approach to the use of generative AI may be unworkable, due to varied generational preferences. Younger generations may prefer digital interactions, whereas older guests often value traditional, personal service.

> The main customer group visiting our hotels is still Gen X. They prefer human interactions rather than talking to a chatbot. I don't think they would want to talk to Alexa or use Hey Siri for in-house services. – Housekeeping Manager

> We've noticed that younger guests often prefer a digital check-in process through our app, while our older guests appreciate a more personalised and face-to-face interaction at the front desk. – Front Office Manager

Theme 3: current practices using generative AI in hotel operations

The findings from the study reveal that the application of generative AI in hotel operations within New Zealand is currently minimal. The pursuit of AI development appears to be marked by a distinct dichotomy between aspiration and realization. The 'Algorithm Charter for Aotearoa New Zealand' (New Zealand Government, 2019) presents an alarming reminder of the lack of consistency and ethical oversight in the algorithmic practices across governmental agencies. The report by AI Forum New Zealand (2018) also highlights the potential economic and social impacts of AI, yet lacks concrete strategies to overcome the identified challenges. In a white paper, Bifet et al. (2021) stated that it was critical that AI reflecting the unique values significant to Aotearoa New Zealand, be invested in, and that principles such as sustainability, fairness, equality, data sovereignty, obligations under Te Tiriti, multiculturalism, intergenerational consideration, prioritization of people and whānau, and holistic thinking, should be paramount. They warned that failure to do so could leave New Zealanders merely as 'users of foreign technologies', crafted by nations with diverging values and principles. Furthermore, the 'Technological Change and the Future of Work' (New Zealand Productivity Commission, 2020) illustrated the potential for disruption caused by AI. However, this reflection has not been translated into a comprehensive policy alignment to support the affected workforce. Nearly one-fifth of the 200 senior business leaders surveyed by TV3 in New Zealand expressed either 'not interested' or 'no support' the application of AI (Newshub, 2023). The survey also stated that the top two concerns around the adoption of AI were security and safety. Even the New Zealand government has blocked its staff from using AI due to the lack of regulations (Newshub, 2023).

> There is a massive opportunity out there for New Zealand in terms of the adoption of AI. There are also some potential challenges that we would need to face into. And that's really around our preparedness. – Karl Wright, Datacom Chief information Officer & Chief information security officer.

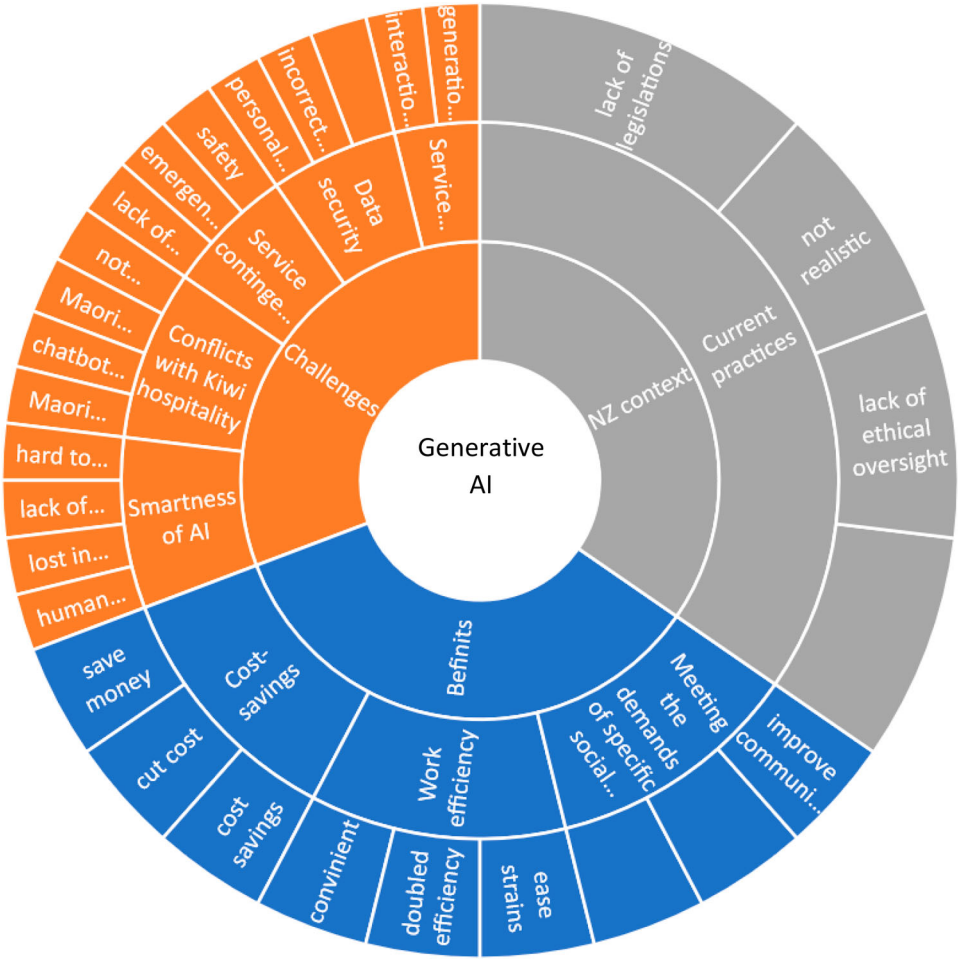

Figure 1. Summary of findings.

Within New Zealand's hotel industry, the limited adoption of AI can be largely attributed to the absence of clear legislation governing AI utilization, which has led to a cautious approach among hotel managers. While there is a substantial interest and willingness among the majority of hotel managers to integrate generative AI into various operational aspects, this enthusiasm is tempered by multifaceted concerns, including apprehensions about the legal ramifications, data privacy, and potential impacts on customer service quality (Figure 1).

Conclusion

Due to the limited application of generative AI in the New Zealand hotel industry, the findings are limited to chatbots and the text-generation capabilities of generative AI. Beyond the chatbot interfaces, generative AI's potential in generating multimedia content can be harnessed to create immersive virtual experiences for guests (Tussyadiah et al., 2017). Furthermore, the use of AI in generating dynamic audio-visual content could be integrated into marketing strategies, with algorithms crafting tailored content that resonates with the preferences of diverse customer segments (Gretzel et al., 2015). In operational terms, AI-driven analytics could optimize resource management, leading to cost savings and increased efficiency (Xiang et al., 2017). The automation of routine tasks through

AI, such as inventory control or predictive maintenance, could also free up staff to focus on providing a more personalized service. The integration of generative AI into service delivery systems could revolutionize the way guests interact with their physical environment such as lighting, temperature and entertainment (Li et al., 2019).

In the hospitality industry, services are frequently characterized by their intangible nature, in which creation and utilization occur concurrently, leading to a significant reliance on the abilities and backgrounds of the employees responsible for their delivery. As discussed by Ottenbacher et al. (2006), there is a range of factors that may affect innovative performance, such as feelings of empowerment, market attractiveness, marketing communication, employee commitment, and marketing synergy. When there is a lack of alignment between marketing strategies and the application of generative AI, these delivery skills and resources are less likely to be adequate, resulting in lower service quality and dissatisfied customers. The image projected by each hotel, not only sets a precedent for what customers can anticipate but also mirrors their willingness to embrace novel concepts.

The findings of this study reveal that the advantages of implementing generative AI are multifaceted. Consistent with the extant literature in the hospitality industry, generative AI can offer several benefits, including cost savings (Buhalis & Law, 2008; Buhalis & Moldavska, 2022; Ivanov & Webster, 2017, Ozdemir et al., 2023), work efficiency (Buhalis & Moldavska, 2022; Carvalho & Ivanov, 2023; Leonidis et al., 2013; Pillai & Sivathanu, 2020), and meeting the requirements of specific social groups such as accessibility and language needs (Kim & Lehto, 2012; Liu et al., 2024; Pardo et al., 2022; Poria et al., 2010; Seifert et al., 2022). Given the ongoing recovery of the hotel industry from the COVID-induced crisis, especially facing challenges like staff training deficiencies and shortages (Baum & Hai, 2020), reducing operating costs and staff demand may offer relief, rather than curtailing operating hours. International tourists are contributing significantly to the New Zealand's economy, the implementation of generative AI offers a practical and cost-effective solution for the industry.

The findings conclude that hospitality operators face several challenges, some of which have been discussed in the literature. These include the smartness and emotional intelligence of AI (Armitage, 2023; Dwivedi et al., 2023b; Li et al., 2019; Paul et al., 2023; Pillai & Sivathanu, 2020; Seifert et al., 2022), concerns around data security (Bietti, 2020; Hagendorff, 2020; Jobin et al., 2019; Lobschat et al., 2021; Mittelstadt, et al., 2016; Seifert et al., 2022; Whittlestone et al., 2019; Wirtz et al., 2023), AI's capability in handling service contingency situations (Frey & Osborne, 2017; Lim & Zhang, 2022), and customer acceptance and preferences of using AI (Bajrovic, 2021; Baloglu & Bai, 2023; Lukanova & Ilieva, 2019).

Interestingly, the findings reveal that the use of generative AI does not align with the social principles of Kiwi hospitality, which are deeply rooted in indigenous Maori culture. Moreover, regarding languages other than English, the findings indicate general concerns about generative AI's ability to translate or pick up words from the internet without adequate training. Furthermore, the study suggests that there is a prevailing sentiment among hotel managers that the use of AI may conflict with the deeply ingrained cultural values, warmth and personal connection that define the Kiwi approach to hospitality. Additionally, the lack of a robust approach to AI development and legislative regulation in New Zealand, highlights the Nation's struggles to keep pace with international trends and standards.

Concerns persist among researchers regarding the use of generative AI, particularly with issues such as hallucination and accuracy. Ji et al. (2023) define hallucination as the generation of nonsensical or unfaithful content. Since generative AI utilizes trillions of tokens sourced from the web, it is extremely difficult to filter out fabricated or biased information. Generative AI can also produce information that, although it may seem credible, is actually incorrect. This poses a significant challenge for both algorithms and humans in detecting instances of false data generation (Zhang et al., 2023). In addition to hallucination, generative AI may offer solutions that are ambiguous, incomplete, biased or not sufficiently informative (Zhang et al., 2023). Kadavath et al. (2022) investigated generative AI's

ability to evaluate the correctness of its own responses. Their findings suggest that generative AI is equally confident in both correct and incorrect answers. Ren et al. (2023) argue that generative AI can exhibit an overconfidence in its capabilities, thus providing fabricated responses with unwarranted certainty.

Suggestions for future studies include (i) focusing on a blend of technological advancement that can incorporate cultural awareness – the engagement of AI developers, cultural experts and industry stakeholders could pave the way for innovation that respects the inherent values of Kiwi hospitality, (ii) devoting attention to the legislative background, particularly in relation to privacy concerns, as an understanding of the legal framework will have significant implications for both implementation and adherence to ethical standards, and (iii) exploring innovative ways to bridge the technological gap while upholding the rich traditions that define the values of the local culture. The findings of this study serve as a critical reflection and a pathway for thoughtful, contextually-aware exploration of the ever-evolving landscape of hospitality, and the application of generative AI.

As quoted in Harkison's (2020) study, Kiwi hospitality is all about,

> Helping guests, helping others and being part of that journey with customers or suppliers, making that connection with them, helping them on their worst days or enjoying their best days too and being able to go home and share that with others - Eliesa Fifita, GM of IBIS Auckland. (p. 3)

The findings of this paper demonstrate that applying generative AI to hotel operations in New Zealand will not be a straightforward task, especially with the aim of personalizing customer service. This complexity emerges from the interplay between technology and unique cultural nuances, notably the concept of Kiwi hospitality and the Māori traditional value of manaakitanga. These values, steeped in respect and care, demand a personal touch in service delivery that generative AI is currently unable to replicate. Given the New Zealand emphasis on authenticity and human connection, aligning AI with Kiwi hospitality is both a technological hurdle and a cultural challenge.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Pola Q. Wang http://orcid.org/0000-0002-2435-7755

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