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What motivates chatbot use among tourists? A mixed-methods comparison of expert and user opinion

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Abstract

The aim of this study is to identify the most suitable type of chatbot for use in the hotel industry: task-oriented vs. hedonic. To fulfil this aim, the motivations that are likely to generate more widespread use of chatbots in tourism services are analysed from the dual viewpoint of potential users and chatbot experts, to yield a complete picture of the preferences of the different agents in the sector. The former public helps identify those motivations that relate to current chatbot use, while the latter also enables motivations relating to possible future use to be anticipated. First, in-depth interviews are conducted with (i) potential users of hotel chatbots and (ii) chatbot experts (both academic and professional) to validate a series of motivations for chatbot use. An fs/QCA analysis is then conducted to identify the necessary conditions that a chatbot must fulfil, from the perspective of 29 potential users and 21 experts. The results suggest that there is a clear preference for task-oriented chatbots among users (short-term perspective), while the experts adopt a longer-term outlook focusing more on the entertainment and novelty value that chatbots can deliver. From the results, it can be concluded that, while experts regard many of the recurring problems of chatbots in tourism as having been overcome, tourists still demand that chatbots meet requirements such as productivity and convenience, pointing to areas that require further attention from the industry.

Keywords: Hotel chatbots, motivations, user perspective, expert perspective, exploratory sequential mixed methods.

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1. Introduction

In recent years, firms from many different sectors have begun to take advantage of chatbot technology to interact with their customers (Følstad & Brandtzæg, 2017). The tourism sector, in particular, is witnessing rapid advancements in customer service technologies (Murphy *et al.*, 2017; Popesku, 2019), which has sparked the interest of the scientific community in the use of chatbots in tourism contexts (Calvaresi *et al.*, 2021).

In tourism in particular, chatbots (a tool that allows you to interact with it by means of text in real time, capable of performing certain tasks) are changing the way the entire industry operates today (Ivanov *et al.*, 2017; Tussyadiah, 2020). They are used, among other purposes, for travel planning, making bookings, customer service, and managing customer recommendations and suggestions on travel-related issues. Chatbots are also helping tourism businesses such as Makemytrip, Expedia, Kayak, Skyscanner, and Cheapflights to provide 24/7 customer service, exploit more revenue opportunities, achieve more automated lead-generation, reduce overheads, increase competitive advantage, and make time-savings (Sheehan, 2018; Fan *et al.*, 2022). Recent surveys also confirm that their use is becoming increasingly widespread among tourists, 60% of whom claim to have used them and about 53% who have not yet done so would be willing to do so (MyTravelResearch, 2024). In terms of industry, their use is increasingly spreading the interest of managers and academics (Wang *et al.*, 2024).

The most recent systematic literature reviews dealing with service chatbots identify two principal lines of research: one concerned with the development of the computer architecture behind chatbot technology (e.g., Suhaili et al., 2021), and another that more closely resembles service marketing (e.g., Ramesh & Chawla, 2022). In this latter strand of research, there are several recent literature reviews that help identify the advances made in the application of chatbots to customer service delivery. Citing one of the most recent reviews, Ramesh and Chawla (2022, p. 488) find that the principal ramifications of the research have been in: Context—Banking and Financial Sector; Platform of Use—Facebook Messenger; Customer Characteristics—Experience with Chatbot; Design Cues/Input Features—Images; Perceived Attributes—Social Presence, Perceived Ease of Use, and Ability to Complete Primary Task; Perceived Qualities—Quality of Recommendation; Overall Assessment of the Interaction—Satisfaction; Outcomes—Patronage Intention and Trust. Tourism services, however, do not appear among the mostanalysed areas in that study. Referring to the reasons for using customer service chatbots, Gopinath and Kasilingam (2023) conducted a meta-analysis of studies based on the unified theory of acceptance and use of technology (UTAUT). These authors observe that the works they analysed do not generally examine in any depth the use motivations that drive and help explain technology acceptance behaviour. Among the notable exceptions, they point to the studies by Brandtzaeg and Følstad (2017; 2018), which do analyse the motivations of chatbot users.

Specifically in the *tourism* context, Camilleri and Troise (2023) provide a systematic literature review that synthesizes the pros and cons that users attribute to the use of tourism service chatbots. Among their conclusions, the authors identify that more studies are called-for to analyse the reasons that may drive or inhibit the use of chatbots in tourism. However, alongside the perspective of users, which tends to centre on their motivations for current use, the predictions of chatbot experts regarding how use might evolve in the future cannot be ignored (Bolger & Wright, 2017). This is especially the case in underdeveloped fields such as chatbot tourism-service delivery because any progress in the features and functionalities of a technology depends, to a great extent, on the vision of those who develop it.

Among the studies undertaken from this perspective, Corea *et al.* (2020) analysed the foreseeable evolution of customer service chatbots, based on the views of a panel of 17 experts. Janssen *et al.* (2021) conducted 20 interviews with experts to determine the critical success factors of chatbots, in practice, and reasons for their failure. For the particular case of hotels, Buhalis and Cheng (2020) conducted

semi-structured interviews with expert technology providers in the sector, concluding that chatbot technology is positively received by hotels and that its benefits outweigh the challenges presented by its implementation.

While hotel firms that are seeking to implement a customer service chatbot in their business need access to information on the *current* motivations of potential chatbot users, they must also ensure that the system will continue to be useful in the future. To contribute to this dual temporal perspective, the present research sought to identify the *current* preferences around chatbot use reported by tourists, together with the *future* trajectory of the use of chatbots in tourism as predicted by chatbot experts. To this end, a mixed-methods approach was adopted in this study, via in-depth interviews and semi-qualitative techniques (fuzzy set Qualitative Comparative Analysis or fs/QCA). While some studies deal exclusively with the expert perspective (Buhalis & Chen, 2020) or that of tourists (Wang et al., 2024), the present research integrates both points of view, combining the future-oriented outlook of sector experts with the preferences expressed by consumers, in an attempt to satisfy both audiences. In addition, addressing the research question, the work seeks to identify the most suitable type of chatbots for use in the hotel industry—distinguishing between the functional, task-oriented type versus chatbots of a more hedonic nature—by analysing the motivations that are likely to generate the most widespread use. The motivations were cross-referenced and validated via three sources: the extant scholarship; potential users; and chatbot experts.

Thus, this investigation helps to better understand the future of chatbots in the tourism industry, providing insights into the preferences of tourists, how this technology is seen by the expert sector, and what type of chatbot is more advisable for the industry to implement in the near future.

2. Literature review

In the literature, goals and tasks are often linked to motivational issues (Brandtzaeg & Følstad, 2017). Motivation theories have led researchers to focus on the factors that inspire people to use new technologies, for example, or the factors that make technology use successful over the long term. With this, several theories have been used to explain what leads a person to use a chatbot. Wang *et al.* (2024) use the classical theory of default options and continued use of technology or other more recurrent theories in technology such as TPB (Ivanov *et al.*, 2024). However, one of the best theories to explain these motivations is the theory of uses and gratifications (Rubin, 2009). This theory explains how and why people use specific media to satisfy specific needs, on the premise that an individual's use of a given medium depends on the gratification they expect it to provide and on their actual experience of what it *does* provide, being one of the most suitable for this phenomenon (Brandtzaeg & Folstad, 2017).

The literature identifies different gratifications or motivating factors for media use (Sundar & Limperos, 2013), such as the need for information, entertainment, social interaction, and self-expression. Crucially, though, while one might assume that having more extensive or sophisticated Internet use may orientate users' motivations toward selecting online technologies over more traditional ones, previous studies have found that this is not necessarily the case. Rather, it appears that the rewards of using Internet technologies are similar to those derived from using other media (ibid.). However, as there are substantial variations between the contexts in which different media are employed by users, it is important to identify the particular forms of gratification that they derive from the context in question (Brandtzaeg & Følstad, 2017).

2.1. Task-oriented vs. hedonic chatbot: Which one do tourists feel most motivated to use?

Recent literature has focused on chatbot use intention in the tourism context (Ukpabi *et al.*, 2019; Pillai & Sivathanu, 2020), continued use intention (Wang *et al.*, 2024), and the user experience (Haugeland *et al.*, 2022). However, very few studies have focused on the characteristics of this tool and the benefits

that lead to its use—and, certainly, those that have done so have not taken into account all the complexities of the sector. Therefore, this study applies the aforementioned uses-and-gratifications theory to better understand what motivates people—here, tourists—to use a chatbot, based on its characteristics (Brandtzaeg & Folstad, 2017). This theory is concerned with the motivation that drives a user to use a given medium, rather than another—in this case, a chatbot—by identifying the rewards they derive from using it and that matter to them. This insight will contribute to the development of chatbots that are well-suited to users' requirements.

Turning to previous studies examining the reasons that lead individuals to want to use this type of technology in the tourism sector, it can be observed that some authors have attempted to identify users' motivations (Jiménez-Barreto et al., 2021; Wang et al., 2024), while others are more concerned with the organizational aspects that lead to firms' successful implementation of chatbots (Pillai & Sivathanu, 2020; Zhang *et al.*, 2023). A third set of studies focus on whether this technology can improve the user experience (Zhang et al., 2024) or on consumers' predisposition to adopt it in the tourism sector (Meng et al., 2023). However, the literature that deals with chatbot use intention has centred more on the functional or hedonic features that this technology should possess than on the motivations that lead to its use (Dinh & Park, 2023). Among the most relevant functional aspects, of particular importance to users are those related to the task these tools perform and the experience of interacting with the system (Pillai & Sivathanu, 2020; Li et al., 2021; Yoon et al., 2022; Zhang et al., 2022), together with other, hedonic, aspects such as their on-screen appearance or social-conversational capabilities (Jiménez-Barreto et al., 2021; Liu et al., 2022; Lv et al., 2022; Orden-Mejia & Huertas., 2022). Ultimately, the perceived usefulness of a technology will lead to its use (Pillai & Sivathanu, 2020). However, when it comes to chatbots, the literature indicates that there are two broad types: those that are oriented more toward performing specific tasks, and others more geared toward fun or hedonism (Dinh & Park, 2023). Task-oriented" chatbots are utilitarian in nature, designed to perform specific actions, and are usually limited to short conversations within a confined topic area. Typical actions include tasks such as placing a pizza order, scheduling an event, or fixing an internal device problem (Hussain et al., 2019). According to Hussain et al. (2019), this kind of chatbot is designed to have one-time, brief interactions that help with customer-centred services and enhance the customer experience (Liu et al., 2023). In contrast, a "hedonic" chatbot is designed primarily to provide pleasure, entertainment, and enjoyment to users (Dinh & Park, 2023). This type of chatbot aims to create a sense of joy, playfulness, and emotional engagement through interactive and often fun conversational experiences (Bedué, 2020). They are distinct from utilitarian chatbots, which focus on practical functions such as providing information or solving problems (Følstad & Brandtzaeg, 2020). As described in Hassenzahl (2023), hedonic qualities are associated with non-instrumental attributes such as creativity, inventiveness, or aesthetics that frequently highlight users' psychological well-being, whereas pragmatic qualities are tied to the system's functioning and usability, which frequently satisfy users' behavioural goals.

2.2. Motivations for using chatbots based on their functionalities (users vs. experts)

Over the last decade or so, consumers' interactions with commercial tourism chatbots have centred on simple information searches (such as restaurant opening hours) (Hosseini, 2020) and basic customer service assistance inquiries. But these early inroads into chatbot use are predicted to grow exponentially across all sectors including tourism. According to the technology research consultancy Gartner, for example, chatbots are on course to become the main channel for customer service delivery in approximately 25 percent of organizations (Gartner, 2022). Not least, this predicted growth is due to the fact that, as well as providing information to consumers, chatbots also constitute invaluable sources of user data for firms (Kwangsawad & Jattamart, 2022).

Thus, in the tourism context, one of the prime dimensions of the motivation for using chatbots that is relevant to most users is **productivity**, as this medium provides fast and consistent responses when

users seek information or assistance. Note that Facebook Messenger and WhatsApp, among other instant messaging applications with chatbot functions, capture the interest of users in more instrumental or aim-specific communication that largely flows uninterrupted compared to the options available on Facebook *per se* or Twitter, for instance (Brandtzaeg & Folstad, 2017). Previous studies on uses-and-gratifications theory have identified that information-seeking is such an important source of gratification—particularly in the online media context—that it requires a highly nuanced approach to understanding all of the needs it actually fulfils, rather than being considered one single category (Sundar & Limperos, 2013). Importantly, however, the information needs of today's chatbot users may call for more immediacy and interactivity than those relating to other media. On this point, Brandtzaeg *et al.* (2016) suggest that young people who tend to communicate via social media are action-oriented, as they are focused on achieving a clear goal. Other studies highlight that users from Western cultures seek to spend their time productively and may feel guilty when they perceive that they are wasting their time (Foley, 2017). In sum, for chatbots to be successful, they must help users perform a task or achieve a specific objective effectively and efficiently; in other words, they must be easy to use, fast, and convenient (Brandtzaeg & Følstad, 2017).

The **entertainment** and **social-relations** dimensions are also important aspects of any interaction between human beings, and many of our daily activities involve socializing and entertainment (ibid.). As such, they must also be taken into account when seeking to understand the relationship between users and chatbots. More specifically, in the chatbot context, **entertainment** refers to how users regard this medium as a means to engage in an enjoyable activity as a source of pleasure, as a resource to joke around with, or as something to idle with to alleviate boredom (Cheng *et al.*, 2020; Qin, 2020). Regarding the **social-relations** dimension, previous studies have found that systems must provide users with a social platform that generates positive experiences (Thackara, 2000) and supports pleasant social interactions (Monk, 2000). Both needs, for entertainment and for social relationships, may be heightened in the case of chatbots, as these are more similar to humans than other interactive systems (Brandtzaeg & Følstad, 2017).

Another important dimension of motivation that has been identified as a key reward in uses-andgratifications theory is **novelty/curiosity**. Curiosity and the sense of novelty derived from new technologies are considered particularly relevant to innovative users, while, for others, trying new technologies may be perceived as riskier (ibid.). According to the diffusion of innovation (DOI) theory (Rogers, 2003), it is only early adopters and innovators who are willing to take risks, because trying new things can be frustrating for many people. While many users are interested in new technologies for personal entertainment, early adopters and innovators are more interested in certain experiences precisely *because* they are new, deriving satisfaction from the very fact that they are learning things *before* others (Zefreh *et al.*, 2023). Thus, in the case of chatbots, the perceived novelty of this technology will naturally lead some users to try them out and experiment with them. However, to establish a pattern of sustained usage, chatbots must increase their productivity for the majority, which will lead to widespread adoption as the preferred means of interaction (Brandtzaeg & Følstad, 2017).

2.3. What broad type of chatbot is more suitable for the hotel industry?

Taking these dimensions into account will help firms to successfully implement chatbots and encourage take-up among customers and potential users. But the appeal of this medium largely depends on the features and functionalities that expert developers build into its technology. Importantly, when it comes to developing new technological solutions and piloting the innovation process, the views of these experts do not always match those of the actual users of the technology (Shah & Kitzie, 2012). Researchers have found that technological experts participating in the design-thinking process tend to adopt a long-term orientation (Brown, 2009, p. 184). However, the short-term perspective that users can provide is equally essential in these innovation processes, especially in the services context

(Prud'homme van Reine, 2017). Often, efforts are made to introduce innovations to services, only to generate tensions between a long-term vision of what can *potentially* be created vs. a short-term perspective regarding real and immediate benefits, which are just as necessary (Dorst, 2011). Analysing these differences between expert opinion (which will be behind the development or implementation of this technology in the sector) and tourist preferences (which will ultimately determine market reception) is essential, particularly when there are different trajectories of development or lead to different models of chatbots; and, clearly, if these do not meet the expectations of the target audience (in this case, tourists), they can generate frustration or rejection of this technology, leading to market failure (Ullah *et al.*, 2022; Vena-Oya *et al.*, 2024).

Hence, while previous studies have endeavoured to resolve the question of why a person would use a chatbot (e.g., Brandtzaeg & Følstad, 2017; Wang et al., 2024), most of these works present important limitations, such as sample bias or the use of a set of motivations that are predefined. Other works, while focusing on classic technology acceptance theories, such as the TAM, TPB, or UTAUT (Ivanov et al., 2024; Yildiz Durak & Onan, 2024), do not explore different factors that could prompt a person to use a chatbot—such as the utility they hope to derive from it (to perform a specific task or simply be entertained) (Dinh & Park, 2023). Furthermore, where sample bias exists, this impedes the identification of other relevant factors, such as the differences that may exist between different generations or between the sexes when approaching the question of why people choose to use a chatbot (Terblanche & Kidd, 2022). In addition, not all of the extant studies take into account the expected benefits of chatbot use, the intrinsic characteristics that a chatbot needs to have if it is to appeal to users, or simply the heterogeneity of the different publics. Yet, despite the relevant contributions already made to addressing the question of chatbot use motivation, the literature remains limited. The present study therefore seeks to arrive at a better understanding of the different motivations that prompt users to want to use a chatbot in the tourism sector. The mixed-methods approach used here can help answer this question from a more precise perspective, given the complex reality of the sector.

It is against this backdrop that the following research question, based on the opinions of users and experts, has been formulated:

RQ: What broad type of chatbot is more suitable for the hotel industry—task-oriented or hedonic—given the use motivations identified by tourists vs. experts?

3. Methodology

To address the research question, an exploratory sequential mixed methods (ESMM) approach was used (Berman, 2017), where qualitative data are collected and analysed, and the resulting themes are then used to develop a quantitative or semi-quantitative instrument to further explore the research problem. In the present study, the ESMM approach was taken to compare the opinions of chatbot experts and chatbot users in tourism. According to Magnusson *et al.* (2016), in innovation processes, user panels can provide a helpful complement to panels of professional experts when seeking to select the strongest ideas. Thanks to the combination of mixed methods and the use of two panels (professional chatbot experts and potential chatbot users), our methodology offers a cross-validation of results across two studies: one, purely qualitative; and the other, based on a technique that combines qualitative and quantitative approaches (fuzzy set Qualitative Comparative Analysis or fs/QCA). In the first study, 29 in-depth interviews were conducted with potential users of customer service chatbots in the hotel industry. The objective of this first tranche of fieldwork was to identify the motivations of potential users of "necessary" versus "sufficient" conditions for the use of chatbots by hotels. In this second study, the same sample of 29 potential users was used once again, this time collecting the data via a

questionnaire, coupled with a second sample comprising 21 chatbot experts (academics and professionals). The sample of the first study was selected by random quota sampling, in which men and women had to be balanced, while the experts in the second study were selected by non-random convenience sampling. Prior to these two main studies, a preliminary inquiry was conducted in which two experts were asked to validate the initial theoretical framework on use motivation that was derived from the literature review.



Figure 1. *Summary of the research phases*

3.1. Preliminary inquiry: Validating the theoretical framework of use motivation

The preliminary inquiry consisted of interviewing two experts—an academic and a private-sector marcomms professional—in order to validate the items identified in the literature. The academic is a lecturer in Computer Languages and Systems at a Spanish University. Her primary area of research is concerned with conversational agents, and her academic trajectory has resulted in the development of several such software programmes that are used mainly in the fields of tourism and health. The other expert is the founding partner of two private companies, Güelcome and Levelbots, both of which specialize in the development of chatbots in the tourism field. She currently works as a Marketing Communications Manager for Cover Manager, a cloud-based hospitality management platform with a presence in several countries. The company's client base comprises large chains in the tourism sector, to which it provides booking-management services and customer service using conversational agents.

The preparatory phase of the study (denominated Phase o) comprised one-to-one, in-depth interviews conducted online (via Google Meet) with the two chatbot experts in April 2022 (lasting 80 minutes in the case of the academic interviewee, and 90 minutes for the sector professional). The objectives of this preliminary inquiry were: (i) to acquire information from the practical application of chatbots to tourism; (ii) to analyse the relevance of each of the various motivations that were identified from the literature review, or even to detect new ones; and (iii) above all, to inform the design of the in-depth interviews and, in general, the fieldwork to be conducted in Phase 1. The involvement of industry experts or researchers specializing in the area is recognized as being extremely helpful in fulfilling this objective (Kallio *et al.*, 2016).

Regarding the expert perspective on the reasons for using tourism chatbots, both experts agreed that users' primary motivation is functional. The sector-professional expert did not consider entertainment

to be a significant motivational factor, contending that chatbot functionality should be understood in terms of immediacy of response, ease of use, and provision of clear information. While not regarding the aspects that humanize the chatbot or its "social skills" to be of importance, she was of the view that factors such as the use of humour or the generation of everyday, natural language—that is, language that convincingly mimics human conversation—can constitute an interesting plus. She contended that Millennials are the best-equipped generational cohort to use chatbots (an observation also shared by the academic expert) together with Generation Z. "Baby boomers," in contrast, are reticent users of chatbot technology due to a fear of a loss of privacy and reluctance to "talk to machines."

In the case of the academic expert, she agreed on the importance of functionality—understood, in this case, as reliability of responses and the chatbot's ability to retain a long-term memory. In her opinion, what generates a predisposition toward using chatbots is the productivity and quality of information that these systems can provide. Unlike the professional expert, the academic also highlighted the more human aspects of the chatbot such as naturalness of speech, not only in terms of language but also regarding the voices and accents used.

3.2. Study 1: Users' view of hotel chatbots from a qualitative perspective **3.2.1 Sample and qualitative research requirements**

Study 1 consisted of 29 in-depth interviews with users of tourism chatbots, who were recruited via an external company specializing in qualitative studies (More Than Research, https://www.moretr.com). Among the selection criteria for participants were the requirements that they had to undertake tourism on a regular basis and had to routinely use the Internet as their main channel for booking tourism services. All the participants also had to be from either the "Millennials" generational cohort (aged between 24 and 39) or "Generation X" (aged between 40 and 55). These two cohorts were chosen because they represent the two most active population segments in tourism activity (Rezdy, 2018; Sofronov, 2018; CBI, 2021; Omnitrak Group, 2021). The sample was also relatively balanced in terms of gender (14 men and 15 women). With interview number 29, a sufficient level of saturation was considered to have been reached to close the interview phase and proceed to the analysis (Kvale, 1996).

3.2.2 Data collection

In April 2022, in-depth interviews were conducted in a laboratory equipped for qualitative research, featuring video cameras, sound recorders, and an observation room with a one-way mirror. The interviews, lasting approximately 65 minutes each, were facilitated by a researcher with extensive experience in qualitative marketing research. The primary aim was to identify previously unrecognized factors influencing chatbot usage and to explore potential user motivations.

An inductive-deductive approach was employed, beginning with a guided preparatory task where participants interacted with a hotel chatbot through role-play for about 10 minutes. This was followed by a structured interview using a pre-designed guide (Supplementary Material 2), which covered initial assessments of the chatbot, desired features, general experiences with chatbots, and motivations for usage. Participants were prompted to evaluate a list of motivations derived from literature and expert consultations, discussing their relevance and providing insights into their perspectives.

The role-play technique was instrumental in eliciting immediate responses, as noted by Moser and Korstjens (2018). Presenting the motivation list post-interview allowed for reflection on initial responses, potentially uncovering unconscious motivations. Tavory (2020) emphasizes the importance of capturing symbolic and narrative constructions to reveal significant motivations, focusing on the relationship between participants' expressions and their experiences during the role-play.

Interviews were recorded and transcribed by an external company (MTR), with all materials imported into NVivo software for thematic and content analysis. NVivo facilitated data organization, coding, and in-depth analysis, enabling the identification of meaningful patterns and themes from participant contributions.

3.2.3 Data analysis: Coding process

The in-depth interviews were analysed thematically (coded) based on a series of phases described by authors such as Kvale (1996) or, more exhaustively, Braun and Clarke (2006) (see Supplementary Materials 3 and 4 for ethical and quality criteria). The phases are presented in Figure 2.

Data	Familiarization
 2 000	

- •Verbatim transcription of interviews
- •Reiterative reading & annotation of initial ideas
- 2. Code Generation
 - Initial coding based on rereading transcripts
- 3. Theme Identification
 - •Search for generic themes based on initial codes
- 4. Theme Review
 - •Review themes with concept maps (CAQDAS NVivo)
- 5. Theme Definition
 - •Concise definition of themes
- 6. Report Production
 - •Compile final report with illustrative quotes

Figure 2. Coding process of the interviews

This approach enables an in-depth examination of the participants' responses, which can then be classified into themes (corresponding to the motivations that were mentioned), sub-themes (related to those motivations), and content (how exactly the participants described or exemplified each motivation). To track the frequency with which themes and sub-themes emerged in the interviews, the criterion applied was the number of participants who mentioned the motivation in question (with each mention being coded), rather than the number of mentions in total. The codes in the Results section are those repeated by the most participants—at least 25% more than the others.

3.2.4 Credibility and quality aspects of the in-depth interview phase

While it is difficult to establish unanimously agreed reliability and validity criteria in qualitative research, the literature (Guba & Lincoln, 1982) points to a series of criteria for research quality and rigor that the present work fulfils (Table 1).

Criteria	Description	Methods of Fulfilment
Credibility	Ensures findings reflect the reality of the phenomenon.	 Use of verbatim excerpts from interviews. Textual analysis for theme frequency. Cross-checking via recordings. Literature review for congruence.
Transferability	Ensures findings can be applied to other contexts.	Theoretical sampling until saturation was reached.
Confirmability	Ensures objectivity in findings.	 Verbatim transcription of interviews. Results contrasted with existing literature. Relevant sources cited.
Dependency	Relates to the stability of data.	 Detailed description of study processes (participants, analysis techniques, data collection).
Relevance	Contributes to understanding the phenomenon and supports the tourism sector.	• Results provide insights applicable to the tourism industry.

Table 1. Reliability and Validity Criteria in Qualitative Research

3.3. Study 2: "Necessary" and "sufficient" conditions for chatbot use, based on a semi-qualitative methodology conducted among potential users and sector experts

In Study 2, the results derived from the in-depth interviews with experts and users were used, along with the literature review, to develop the questionnaire for the semi-qualitative analysis. The questionnaire included measurement scales for the motivations validated in Study 1 and was answered by the 29 potential users who had participated in that study, 45 days after their in-depth interview. Using the same sample of participants as in the initial part of the study made it possible to draw connections between the deeper motivations that emerged in the interviews and behavioural intentions. Furthermore, the questionnaire required respondents to have had a recent experience of using tourism chatbots, and this criterion was fulfilled thanks to their having performed the guided preparatory task prior to the in-depth interviews.

This questionnaire was also answered by a panel of 21 experts, given that, as mentioned earlier, this would enable us to anticipate likely *future* motivations for the use of chatbots in the hotel industry. The expert respondents were recruited at an Artificial Intelligence (AI) workshop held in Vilnius (Lithuania), between May 18 and 20, 2022 (organized by the Arqus Alliance of Higher Education Institutions, <u>https://www.arqus-alliance.eu</u>). Of the total, 17 were academics, and the remainder were professionals. Regarding their areas of specialist knowledge, the largest cohort (36.36 percent) came from the Finance and Technology field; 27.27 percent came from the Computing field; 27.27 percent from Economics; and 9.10 percent from other branches of knowledge. The average age of these experts was 38.6 years; the majority were men (71.43 percent); and they had an average of five years' experience in areas related to AI and its application to conversational agents. In terms of nationality, 33 percent of the respondents were from Lithuania, while France and Spain accounted for 19.05 percent each, the rest being from other European countries. With that, an fsQCA analysis was conducted. This semi-qualitative methodology is explained in the result section.

4. Results

4.1. Functionalities of the most highly-valued chatbots in tourism (Phase 1)

The basis for the study was the set of four motivations (productivity, entertainment, social interaction, and novelty) that was derived from the literature review and that has been used in several studies dealing with chatbot technology (e.g., Senkbeil *et al.*, 2013; Foley, 2017; Brandtzaeg & Følstad., 2017) and, particularly, chatbots in the tourism context (Hamed, 2021).

With regard to the coding process, an initial automatic coding of themes and sentiment analysis was performed. This was followed by a manual recoding, reviewing the main codings and the verbatim quotes, coded by sentiments. In addition, thematic coding was performed, identifying the core themes reflected in the literature review; and, finally, *in vivo* coding was undertaken whenever similar response patterns or trends were identified in the interviews that could represent new themes to contribute to the extant literature. In total, these procedures resulted in a total of 295 codes (themes) and 1,942 coding references (coded verbatim quotes) derived from the 29 transcribed interviews and the two initial interviews conducted with experts.

The spontaneous comments derived from a discussion of the usefulness of the chatbot after the task was completed. No prompt-list was presented to the participants regarding the general motivations for chatbot use identified in the literature; instead, participants were encouraged to discuss the chatbot of the specific hotel group used in the study with the researchers. The results of the coding of main and descendant nodes show, above all, a significant number of descendant nodes in the "productivity" sphere (Figure 3).



Figure 3. Instant motivations

One of the main findings of the present study compared to the literature is that the majority of the motivations expressed by the participants were concerned only with the productivity of the chatbot, and had very little (or nothing) to do with hedonic motivations. Although comments regarding entertainment and novelty/curiosity did appear once or twice, respectively, most of the sample participants focused on aspects pertaining to productivity.

Among these main codings, notably, some men did allude to aspects relating to entertainment, such as Aitor (man, 35 years old, Millennial), who referred to "speed, time, fun, knowledge, information, or relaxation." In contrast, the women made no reference to entertainment. Meanwhile, Generation X participants generally focused exclusively on productivity: "[the chatbot] is a good idea because you don't have to even leave the house if there's anything you want to enquire about or you've just remembered to buy something at 10 at night; I have a tricky schedule" (Cristina, woman, 43 years old, Generation X). Participants from the Millennial generational cohort mentioned other motivations, beyond productivity, such as novelty or social aspects, albeit to a limited degree.

Regarding the descendant frequency counts of the main code, "productivity," differences were identified between the response tendencies of men vs. women. The themes of availability, convenience, and not having to bother a human agent were emphasized by the women in the sample: "speed, and it's convenient, at any time of day you can connect and get an answer to your query or solve a problem you might have" (Jessica, woman, 38 years old, Millennial). The men in the sample highlighted chatbots' ease of use: "it's easy to handle, people can understand it, and you find what you're looking for, you just make an input and you get an immediate and correct response" (Lluis, man, 53 years old, Generation X) (Figure 4). Comparing the trends between Generation X and Millennials, the former emphasized convenience and being able to avoid bothering a human agent: "for me, it's the convenience of not having to resort to your mobile, the TV, or the radio, you just say out loud 'put on the Top 40' and it puts it on for you" (Pilar, woman, 52 years old, Generation X). In contrast, Millennials focused more on ease of use, immediacy, and availability: "I don't find talking to people a hassle, but these things [chatbots] are more practical and faster, and, if they are good, I can save myself the bother of searching a web page" (Lucas, man, 37 years old, Millennial) (Figure 5).



Figure 4. Motivations by gender



Figure 5. Motivations by Generation X/Millennials

The resulting codings of the motivations alluded-to by the participants after being presented with a prompt-list of possible motivations did not differ greatly from the spontaneously-expressed motivations. While discussions with the participants produced responses that alluded to motivations beyond pure productivity, there was a clear inclination toward productivity-related themes. More specifically, there were a few observations alluding to novelty or curiosity, entertainment, social issues, and fear of using chatbots, which can be observed in the structure of main and descending nodes (Figure 6).

Regarding the question of novelty, the comments focused largely on trying something new and being up to speed with new technologies, as well as a sense of curiosity about trying something novel (when booking accommodation). The tendency to respond in terms of novelty was more pronounced among Millennials: "if it's a voice ... and it's fluid, then this kind of technological progress does appeal to me, [for example, you might ask it for] a presentation video and you listen while you interact" (Alex, man, 39 years old, Millennial).

Regarding the entertainment factor, the comments were actually about using chatbots to find things out, out of sheer boredom (distraction). Here, practically all such comments were generated by participants from Generation X: "I would do it mainly for entertainment purposes; if I was bored I would ask for quotes [on room rates] and then see if they sent me a confirmation email ... but in the end I would call the hotel to double-check it anyway (Montse, woman, 45 years old, Generation X). The social aspect accounted for just a handful of comments from four participants referring to a sense of having someone real to talk to, or of polishing their conversational skills: "I like the feeling that it's a person and not a machine. When it comes to honing my conversational skills, [interacting with the chatbot] prompts me to wonder if the way I'm asking the question is hard to understand" (Raquel, woman, 37 years old, Millennial).

Regarding the main code, productivity, the responses tended not to differ greatly from the spontaneous allusions. That said, certain differences were observed according to sex, with men responding more in terms of ease of use: "because it's easier, you don't have to read all the information—you've got four questions, you ask them, and they give you the answers" (Oscar, man, 24 years old, Millennial). By comparison, women tended to respond more in terms of convenience: "it's convenient, at any time you

want, you can connect [to the chabot] and resolve the query or problem you have, it is supposed to be effective" (Jessica, woman, 38 years old, Millennial). There were also certain differences between participants belonging to the two generational cohorts. Generation X cited highly practical, rapidly resolved motivations (such as the need to make a room booking): "If I am going to sort my vacation out and I'm going to make the payment …" (Samantha, woman, 43 years old, Generation X). In contrast, Millennials focused heavily on more relational interactions such as obtaining help or finding out information from chatbots: "I think it's really good, because if you go somewhere, you don't know and it produces a list of what there is [to see and do] there, then great" (David, man, 29 years old, Millennial). Turning to the *in vivo* coding, this was carried out after verifying interviewees' use of expressions that could condense the meaning of the coding. Several themes emerged that revolved around the notion of time and the functionalities of the chatbot with which they interacted. On the question of time, making the most of their time was a major theme among participants when reflecting on the point of using a chatbot to book tourist accommodation. Codings such as "24/7 availability", "immediacy," and "time savings" reflect the priorities of the postmodern world: "it's important that they are available 24 hours a day" (Jessica, woman, 38 years old, Millennial).



Figure 6. Evoked motivations

Among the specific functionalities expressed by the participants, these related mainly to certain aspects of sociability, such as: not having to bother a human agent to enquire out about issues that they considered minor; being able to multi-task while consulting information of interest; or being able to save the conversations and later retrieve the information easily when needed. Jennifer (woman, 33 years old, Millennial) observed: "yes, I'd like [the system] to save it [the information], but not use it later [for advertising purposes]."

In vivo codings emerged more clearly in the female and Millennial segments. In the case of Millennials, these individuals represent a fundamental cohort for this study, as they can be considered digital natives (certainly, compared to Generation X). This generally helps them to talk more fluently about issues related to information and communication technologies. In the case of women, their capacity to discuss ideas about chatbot use motivations that were not captured in the literature review could be linked to having a stronger communication capacity than men.

Finally, coding and sentiment analysis were conducted, in the first instance by automatic coding and then by a subsequent review of the manually coded verbatim quotes to refine the result generated by the software algorithm. This analysis yielded a total of 422 "very positive" or "moderately positive" codings, compared to 264 that were "moderately negative" or "very negative". The trend also points to *moderate* comments as opposed to the extreme views that are more typical of delight or frustration with chatbot use. The results presented no differences in terms of sex but, in terms of age cohort, Millennials tended toward more enthusiastic responses to the use of chatbots than Generation X.

4.2. Motivations for using tourism chatbots: Comparing the views of potential users vs. experts (Phase 2) To fulfil the aim of evaluating the relevance that experts and potential users attach, respectively, to the different motivations for using chatbots in the tourism sector, fs/QCA was used. This technique is for performing semi-qualitative evaluations of asymmetric relationships between a given set of conditions and an outcome (Pappas & Woodside, 2021). Within the analysis, this set of conditions can attain different levels of relevance, with some becoming conditions that are *necessary* for the outcome to occur, and some simply being *sufficient* to help achieve different results. Thus, the output of the present analysis was a set of motivations that will encourage chatbot use in tourism. This technique enables qualitative and quantitative approaches to be combined, which makes it very useful in mixed-method studies (Ordanini *et al.*, 2014). It has the additional advantage of not being limited to binary relationships (unlike other QCA techniques), which yields more realistic results and enables more complex sets of relationships to be obtained (Rihoux & Ragin, 2009). Therefore, fs/QCA is useful for both inductive and deductive reasoning for theory-building purposes, elaboration, and testing (Park *et al.*, 2020).

This technique has been used in a wide range of contexts (Kumar *et al.*, 2022) but, in particular, in studies related to the adoption of the Internet of Things (Pappas *et al.*, 2021), in behavioural intention studies in tourism (Afonso *et al.*, 2018), and—of special relevance to the present study—in works dealing with AI applied to tourism (Lalicic & Weismayer, 2021). It offers several advantages over traditional models that justify its application in this type of research. While more traditional models (variance-based models, in the main) deal with relationships in a competitive environment, in QCA models, these variables (conditions—in our case, motivations) complement each other to reach an outcome (in our case, the intention to use a chatbot) (Pappas & Woodside, 2021). Furthermore, QCA models can be used with both large and small samples—even those comprising fewer than 15 subjects (Liu *et al.*, 2017). However, our main rationale for using this semi-qualitative technique to address the research questions posed here is that, unlike other techniques, which obtain a single path to the solution, QCA models yield different solutions that arrive at the outcome. This approach is a much better fit with the behavioural sciences (Pappas & Woodside, 2021), which deal with complex realities that are hard to explain using a single solution.

For data collection, a questionnaire was required, along with measurement scales for motivations and the outcome variable (intention to use chatbots in tourism services). The five motivations—productivity, entertainment, social interaction, novelty, and convenience—were measured primarily using the items developed by Brandtzaeg and Følstad (2017), together with others based on the thematic analysis of the in-depth interviews. To measure intention to use chatbots for tourism purposes, the

items employed by Venkatesh *et al.* (2012) were used. Appendix 1 shows each measurement scale and its corresponding Cronbach's alpha for the 21 experts and 29 potential users. Given that all the scales achieved internal consistency values of above 0.6 (Nunnally & Bernstein, 1994), it was decided to construct average indicators for the five motivations and the outcome, according to their items.

Prior to analysing the results of the fs/QCA, it needed to be verified that the relationship between the conditions (motivations) and the outcome (use intention) was, indeed, asymmetric. To this end, an analysis of the correlations between the five motivations and intention to use a conversational agent applied to tourism was performed. According to Woodside (2013), a relationship can be considered asymmetric when the correlations do not exceed a value of 0.7. Thus, asymmetry was verified as no motivation exceeded this value (Appendix 2).

The fs/QCA methodology is considered appropriate for analysing asymmetric relationships (Pappas & Woodside, 2021). Thus, according to the procedure proposed by these authors, the data must first be calibrated. Both users and experts were asked the same set of questions relating to the intention to use conversational agents applied to tourism, and to the motivations that lead to their use. Responses were captured on a 7-point Likert scale. Following the procedure recommended by Calabuig-Moreno *et al.* (2016) and Pappas *et al.* (2017), the responses were then recalibrated into three levels—low, medium, and high use-intention—based on the mean responses given by each individual for each construct once the mean responses of the items that made up each of the factors were attained (DiStefano *et al.*, 2009). Thus, values greater than 6 indicated a high use intention while values less than 4 indicated a low level of intention.

Next, before the results could be analysed, there needed to be verification of whether there was any *necessary* condition (motivation) that should appear among the final solutions. For this check, fs/QCA 3.0 software (Ragin & Sean, 2016) was used, as proposed by Pappas and Woodside (2021). According to Ragin (2008), for a condition to be considered necessary, it must present consistency greater than 0.9. Introducing the intention to use chatbots in tourism as an outcome, and the five calibrated motivations as conditions, separate analyses were carried out for experts and users.

It can be observed from Table 2 that, in the case of tourists, productivity and convenience (task-oriented motivations) should be considered necessary conditions (consistency of 0.91 and 0.95, respectively). Thus, in the following step—to draw on this data to arrive at different combinations of conditions that would encourage chatbot use (hereafter, "solutions")—both motivations were included as necessary conditions in the case of users. This means that productivity and convenience had to appear among the final solutions. No necessary conditions were identified in the case of the experts' opinions.

Again, using fs/QCA software, the truth table algorithm was estimated, and those solutions that reached a level of consistency (the explicit connection between a combination of causal conditions and an outcome) greater than 0.8 (Ragin, 2008; Rihoux & Ragin, 2008) were retained. These solutions also needed to attain a sufficient coverage value (a statistic similar to R² in a regression) (Woodside, 2013).

Turning to the results, it can be seen that there are three sets of solutions according to the expert perspective and two from the tourist-user perspective (Table 3). Starting with the experts, the first set of solutions positions convenience as the sole condition that must be fulfilled by a conversational agent applied to tourism. This can be classified as a task-oriented, convenience-based chatbot. However, any "entertaining" quality of that chatbot is irrelevant. The remaining motivations do not contribute, in this solution, to increasing the use of tourism chatbots, according to the experts.

	Experts		Potential users	
	Consistency	Coverage	Consistency	Coverage
Productivity	0.79	0.88	0.91	0.96
Entertainment	0.69	0.90	0.57	0.97
Social interaction	0.66	0.92	0.51	0.97
Novelty	0.79	0.91	0.68	0.89
Convenience	0.84	0.82	0.95	0.83

Table 2. "Necessary" conditions

*Consistency: assesses the degree of perfection of a relationship among sets or conditions. A value above 0.9 indicates a relationship in terms of need with outcome. Coverage: the explicit connection between a combination of causal conditions and an outcome. As the number of cases increases, lower coverage is expected. (Ragin, 2008)

The second solution, again according to expert opinion, presents a more comprehensive conversational agent. In this case, productivity, entertainment, and convenience are conditions that must be combined in order for the chatbot to generate use intention. The other motivations were not considered relevant in this regard. This solution can be classified as a task-oriented chatbot with entertainment functions (and is identical to the first one obtained for users). The third solution is based on an entertaining, innovative conversational agent that lacks functions that prioritize productivity or social interaction (that is, a hedonic chatbot).

	EXPERTS			POTENTIAL USERS	
	Solution 1 Task- oriented, convenience -based chatbot	Solution 2 Task-oriented chatbot with entertainment functions	Solution 3 Hedonic chatbot	Solution 1 Task-oriented chatbot with entertainment functions	Solution 2 Chatbot providing novel approaches to performing tacks
Productivity		~	×		
Entertainment	×	√ √	✓ ✓	✓	
Social interaction			×		
Novelty		×	✓		~
Convenience	~	~		✓	✓
Raw coverage	0.77	0.66	0.56	0.57	0.68
Unique coverage	0.17	0.06	0.02	0.02	0.03
Consistency	0.89	0.96	0.98	0.97	0.97
Solution coverage		0.87		0.	88
Solution consistency		0.85		0.	90

Table 3. Expert vs. user solutions compared

Necessary condition \checkmark Sufficient condition, in terms of presence \times Sufficient condition, in terms of absence. Empty cell: the motivation does not affect the solution

In the case of the "potential users" group, there were two broad sets of solutions. In both, productivity and convenience were present, having been considered necessary conditions. In the first one, in

addition to these two conditions, the agent must offer an entertainment component, with neither novelty nor social conditions having any effect. This would be a task-oriented chatbot with entertainment functions. In the case of the second set of solutions, in addition to the aforementioned necessary conditions (productivity and convenience), novelty was deemed to be a sufficient condition, regardless of any entertaining or social features of the chatbot. This would be a chatbot providing novel approaches to performing tasks.

Analysing the two groups, it can be observed that the absence of a social motivation is a notable feature common to both potential users and experts. The main difference between the groups is found in their perceptions of the "necessary" conditions for the use of chatbots. In the case of potential users, chatbots must be productive and convenient to use, from which it can be surmised that users are looking for a tool that is entirely task-oriented, while not forgetting the components that make it entertaining (Solution 1, users) and innovative (Solution 2, users). In contrast, it is not only task-oriented chatbots that the experts consider appropriate (Solutions 1 and 2, experts) but also those that are exclusively hedonism-oriented (Solution 3, experts). It must be remembered that the experts' responses take into account those motivations likely to drive chatbot use in the future.

5. Discussion of results

Although, in recent years, studies have been published that endeavour to explain user behaviour in relation to chatbots (e.g., Malik *et al.*, 2020; Brandtzaeg & Følstad, 2017), it is important to understand in greater depth the motives that lead the user to adopt them as a service-tool in tourism (Pillai & Sivathanu, 2020; Calvaresi *et al.*, 2021).

First, the study sought to identify which kind of motivations—task-oriented or hedonic—lead consumers to want to use chatbots in tourism services. The literature suggests that there are four main motivations for using this technology: productivity, entertainment, social interaction, and novelty (Brandtzaeg & Følstad, 2017), although none of these has been found to have a clear edge over the others. Analysis of our in-depth interviews reveals that both experts and potential users place an emphasis on functionalities related to productivity. This is linked to aspects such as assistance, responsiveness, ease of use, and, ultimately, the ability to perform a task—findings that are in line with the existing literature (Senkbeil *et al.*, 2013; Dinh & Park, 2023).

Alongside productivity, however, another motivation that featured heavily in the in-depth interviews was convenience, expressed by the participants in terms of system availability (place and time), convenience, time-saving, or the possibility of recording the conversation. Productivity and convenience can both be labelled task-oriented motivations (Senkbeil *et al.*, 2013). While the results of the present qualitative study clearly show the greater relevance of this pair of motivations compared to the rest, in the literature, either there is no discussion on this point at all, or possible motivations for using chatbots are simply proposed (e.g., Brandtzaeg & Følstad, 2017; Hamed, 2021), or there is an open discussion between those authors who claim that task-oriented motivations are the primary ones (e.g., Senkbeil *et al.*, 2013) vs. those who emphasize motivations related to entertainment, social interaction, or novelty (e.g., Misischia *et al.*, 2022).

Turning to the RQ, this inquired into potential users' and experts' respective perceptions of use motivations for chatbots and, hence, the broad chatbot type best suited to the hotel industry. For users (who naturally tend to focus on current needs), task-oriented motivations (productivity and convenience) constitute *necessary* conditions that must be reflected in the functionalities of a hotel chatbot if it is to generate use-intention. Among experts (who also anticipate future trends), these do not attain the status of "necessary," being considered merely *sufficient* conditions. This finding suggests that a hotel chatbot *must* be task-oriented if present-day use is to be ensured, but that future users may

not require so much emphasis on the task. These insights represent an advancement on previous studies, which solely analyse a single perspective—that of experts (e.g., Corea *et al.*, 2020; Janssen *et al.*, 2021) or that of consumers (Jiménez-Barreto *et al.*, 2021, or Følstad & Brandtzaeg, 2020).

Further adding to this divergence between the perspectives of experts and users, it was found that the former considers entertainment and novelty (that is, hedonic-oriented functionalities) to be sufficient to guarantee the use of chatbots in tourism, while users do not consider this solution feasible. It may be that the distinct temporal horizons of the two groups (users, short-term; experts, long-term) can explain this difference, helping us to better understand the success or failure of the implementation of a technology. Taking into account the outlooks of both experts and users, it does appear to be necessary, within the design conceptualization process, to introduce both short- and long-term perspectives to ensure success when attempting to bring new technologies to market (Prud'homme van Reine, 2017). Here part of our RQ cab be answered. While users have a much more utilitarian view of the chatbot based on the motivations that lead them to use it, experts include more hedonic aspects in addition to these utilitarian aspects to the motivations that would lead a person to use this technology in the field of tourism.

Both audiences agreed that the social aspect of chatbots is *not* a relevant element. Contrary to claims made in the literature in support of social motivation as a relevant component (e.g., Nass & Moon, 2000; Candela, 2018; Hamed, 2021), our results appear to show that, despite the humanizing characteristics with which chatbots are usually endowed (human face or shape, personality traits, and so on), they continue to be seen as machines (software), leading users to interact with them as such. On this point, Mou and Xu (2017, p. 1)—comparing the interaction of a person with a chatbot vs. an interaction between people—showed that, in the latter case, the individuals tended to be "more open, more agreeable, more extroverted, more conscientious, and self-disclosing." In a similar vein, in their longitudinal study, Croes and Antheunis (2021) showed that social processes decreased after each interaction between the individual and the chatbot, which constitutes a key difference compared to personal relationships.

6. Conclusions and limitations

The aim of this study was to identify the most suitable type of chatbot for use in the hotel industry. Specifically, the work sought to respond to the need among hotel firms to identify the optimal type of chatbot to implement in their business, in terms of aligning with today's customers' needs but also looking to their future requirements.

Turning to the conclusions derived from this study, alongside the four motivations identified in the literature on chatbot use (productivity, entertainment, social interaction, and novelty) (Brandtzaeg & Følstad, 2017), in the present qualitative study (Study 1), convenience appears strongly as a fifth motivation of the potential user. Convenience can be understood as the chatbot's greater availability (in terms of both time and variety of devices providing access), while avoiding the need to bother people to obtain information, being able to store conversations, and potentially saving time. Therefore, from the decision-maker's point of view, it is advisable for hotel services to implement chatbots to alleviate bottlenecks in delivery, particularly if these currently require personal attention. This is because, as identified in the present study, the potential user particularly values efficiency in completing the task and does not appear to mind if this means using technology to do so. Regarding the comparison made here between potential users and experts in the sector (Study 2), both collectives agree that functionality is a "sufficient" characteristic of the chatbot to ensure its use in the hotel context, but users elevate its importance even further, to a *necessary* condition.

In sum, the results of this study contribute not only to the theoretical understanding of the motivations for the use of chatbots in tourism but also offer concrete practical recommendations for this sector. From the results obtained, it is recommended that tourism managers prioritize the design of chatbots that maximize productivity and convenience, as these are the factors most valued by users. In order to optimize productivity, chatbots should focus on specific tasks such as room bookings, service enquiries, and assistance in the check-in/check-out process, ensuring fast and accurate responses. In addition, to increase convenience, it is essential that chatbots are available 24/7 and accessible across multiple devices. These features will increase tourists' willingness to interact with technology by offering practical and efficient solutions that meet their immediate needs.

Furthermore, although hedonic functionalities (such as entertainment or social interaction) are perceived as secondary in the short term, experts value their contribution in the long term. Therefore, it is suggested that tourism companies gradually consider integrating entertainment and personalization elements to create more attractive and differentiated experiences. These elements could be implemented, for example, through chatbots that offer personalized recommendations for activities or provide tourist information in an entertaining way, thus meeting the expectations of tourists seeking novelties and enriching experiences. Social interaction was not found to be an attribute that motivates chatbot use in tourism. In this sense, there is already extensive literature that identifies social networks as the main vehicle for generating social interactions related to tourism activities (e.g., Wong *et al.* 2020; Sigala, 2016; Liu *et al.* 2023). In this sense, it may be more cost-effective to integrate the chatbot with the social media already used by the customer and not provide it with its own channels to generate social interaction.

In academic terms, the results of this study provide significant support for the Uses and Gratifications (U&G) theory in the context of chatbot adoption in the tourism sector (Shahab *et al.*, 2022). According to U&G theory, users choose certain media based on the gratifications they provide, such as productivity, entertainment, social interaction, and novelty (Brandtzaeg & Følstad, 2017). In line with this theory, our findings highlight that the main motivations of tourism chatbot users focus on productivity and convenience, particularly in terms of efficiency, speed, and real-time availability. These dimensions of gratification reflect a clear orientation towards functional and practical use, suggesting that, in the hospitality sector, the satisfaction of pragmatic needs is key to fostering the acceptance of this technology.

In addition, although entertainment and novelty are also factors identified in U&G, in this study they appeared as secondary motivations for users, while for experts they represent elements of future interest. This discrepancy reinforces U&G's perspective on how different audiences (users and experts, in this case) seek different gratifications from the same technology, depending on their short- or long-term expectations. Overall, the results of this study extend the applicability of U&G theory, highlighting that, to fully satisfy chatbot users in tourism, it is crucial to prioritize productivity and convenience.

Turning to the limitations of the present study, (1) the sample comprised only potential users of tourism chatbots; hence, in future studies, it would be preferable to work with samples of active users. (2) It would also have been preferable in the present work to assess whether these motivations vary depending on tourist type (e.g., by generational cohort or gender) and whether the effect of the user's culture of origin or digital literacy is discernable in the motivations that drive the use of this technology as a customer-service tool in the tourism sector. (3) Furthermore, this study was based on qualitative and semi-qualitative methodologies, meaning that the results should be interpreted with caution and not generalized.

In order to overcome these limitations and enhance knowledge in this field, future research could explore samples of active users of chatbots in tourism, which would allow a deeper analysis of motivations in a real-use environment. It would also be beneficial to analyse how demographic and cultural factors, such as generational cohort, gender, or culture of origin, may influence preferences and perceptions vis-à-vis chatbots in the tourism context. Finally, given the growing interest in the use of advanced AI in chatbots, it is suggested that future research examine the impact of features such as natural language processing or the use of AI to improve the personalization and social interaction capabilities of chatbots. This would not only improve user satisfaction but could also increase the adoption rate of this technology in the tourism sector.

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Appendices

Appendix	a 1. Measurement scales		
Variable	e (motivation) and items	Cronbach's alpha	References
PRODU 	CTIVITY To obtain assistance To search for information To book (accommodation, transport) To get quick answers Because they are easy to use Because they suit my specific needs Because they provide quality information	0.90	Brandtzaeg and Følstad (2017); Hamed (2021)
ENTERT - - -	TAINMENT To entertain me when I'm bored Because I find them funny Because they have a certain sense of humour	0.77	Brandtzaeg and Følstad (2017); Hamed (2021)
SOCIAL - -	INTERACTION Because I have the feeling that I'm speaking to a real person To improve my skills in conversing with chatbots	0.61	Zhang et al. (2023)
NOVELT - - - - - -	FY Because I see them as something new To test the skills of a conversational agent Because they are something new and intriguing Out of curiosity Because I like to explore new technologies Because I like to keep up to speed with new technologies	0.89	Brandtzaeg and Følstad (2017); Senkbeil <i>et al.</i> (2013)
CONVE - - - -	NIENCE Because I can use them 24 hours a day Because they enable me to avoid bothering people when I have to get information Because I can access them from different devices Because I can use the system whenever I want	0.84	Brandtzaeg and Følstad (2017); Senkbeil <i>et al.</i> (2013)

conversational agents.

Appendix 2. Correlations between motivati	ons and tourism chatbot use-intention
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	Experts	Potential users
Productivity	0.42 (0.01)	0.63 (0.00)
Entertainment	-0.02 (0.92)	0.01 (0.62)
Social interaction	0.05 (0.84)	-0.01 (0.93)
Novelty	0.29 (0.12)	-0.08 (0.81)
Convenience	0.11 (0.35)	0.30 (0.11)

*Pearson Correlation (p-value).

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