Title: HOW CHATBOT MOBILE PROMOTIONS IMPACT CUSTOMERS'ATTITUDES AND REDEMPTION..

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ABSTRACT

Purpose - By adopting a Social Presence perspective, this paper aims to investigate the use of chatbots in in-store mobile promotions. Specifically, it examines whether chatbot mobile promotions affect consumers attitudes and intentions to redeem the promotion.

Methodology - This work adopts an experimental approach and report three lab experiments.

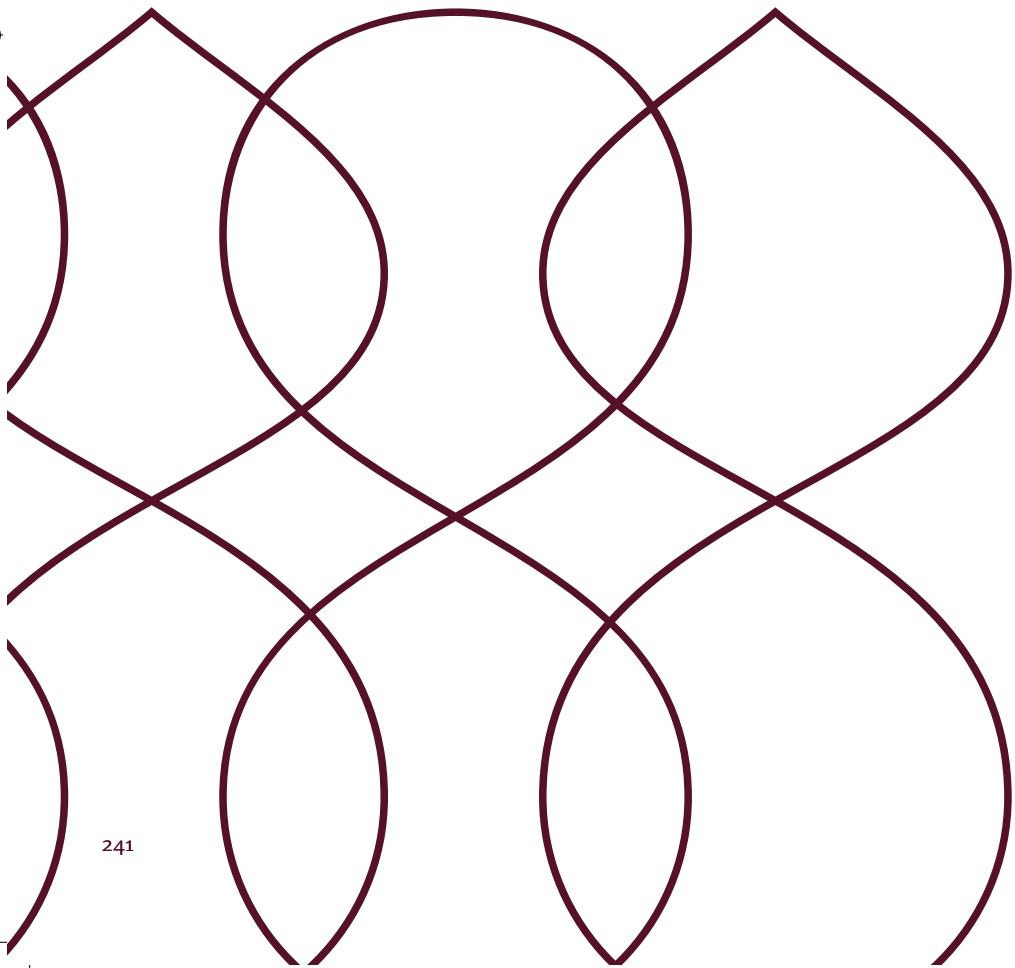
Findings - Findings show that chatbot (vs. regular) in-store mobile promotions increase mobile promotion effectiveness. Specifically, Study 1 shows that chatbot mobile promotions result in higher positive attitudes toward the promotion and higher intentions to redeem the offer. Study 2 demonstrate that the positive effect of chatbot mobile promotions is driven by an increase of perceived intimacy and a decrease of perceived intrusiveness. Study 3 demonstrates that humanlike chatbots further boost in-store mobile promotions effectiveness.

Originality - This study is one of the first to investigate the use of chatbot in in-store mobile promotion and it offers empirical insights and conceptual clarity into the persuasiveness of AI technology.

Practical implications - Chatbots can increase in-store mobile promotion effectiveness because their communications are perceived more intimate and thus less intrusive. Advertisers. Marketers and retailers thus should encourage use of in-store chatbot advertising as it may increase overall purchases by facilitating promotion redemption.

Paper type - Original paper

Keywords – Chatbot Advertising, Social Presence, Intimacy, Intrusiveness, In-store Mobile Promotions



INTRODUCTION

During the last fifteen years, mobile devices have become a widespread technology with almost 6.2 billion of users worldwide (Statista 2024) and a global business market expected to reach USD1,040 billion by 2032 (Fortune Business Insights, 2024a). Due to the proliferation of smartphones and internet penetration, Oman is witnessing a rapid expansion of the mobile advertising market too. In 2024, mobile phone subscriptions reached a total of 7.06 million subscriptions with about 4.5 million active internet users (Data Reportal, 2024). As more customers access content through their mobile devices, advertisers and marketers are increasingly investing in mobile advertising (6Wresearch, 2024).

Mobile technology has strongly influenced retail and service industries and changed the way brands interact with customers (Lamberton & Stephen, 2016; Tong, et al., 2019). Thanks to their ability to incorporate locational, temporal, and environmental information, mobile devices amplify the opportunity for marketers to design and deliver relevant and personalized marketing contents through different channels such as SMS, in-app messaging, or social media notifications, potentially influencing consumer decisions not only during their outside store activities, but throughout the in-store shopping experience (Bues et al., 2017; Grewal et al., 2018).

A burgeoning stream of research explored mobile promotions effectiveness. Redemption of mobile promotion is influenced by many factors including consumers' characteristics (Khajehzadeh et al., 2014; Fong et al., 2019), contextual factors such as temporal and physical proximity to the store (Fong et al., 2015; Luo et al. 2014; Danaher et al. 2015; Molitor et al., 2018; Park et al., 2018; Qiu & Zhao, 2019; Zubcsek et al., 2017;), product types (Bart & Sarvary, 2014; Baker et al., 2014), promotion's content elements and congruity with the consumers' shopping goals (Khajehzadeh et al., 2015; Beeck & Toporowski, 2017), and environmental conditions such as weather (Li et al., 2017) and crowdedness (Andrews et al., 2016; Ghose et al., 2019). Among the others, few studies focused on mobile promotions delivered directly in-store. For example, research found that in-store mobile coupons that requires shoppers to travel farther from their planned path result in a substantial increase of unplanned spending (Hui et al. 2013) and purchases (Grewal et al., 2018). Moreover, the level of customization of the in-store mobile promotions affects consumer shopping behavior in terms of basket composition (Bues et al., 2017).

An emerging and interesting strategy within the realm of mobile promotions is the use of chatbots. Being powered by artificial intelligence (AI), chatbots possess the capacity to significantly transform the digital advertising landscape by promoting more natural interactions with customers (Van den Broeck et al., 2019). Chatbots are able to "converse"

with users either through voice or text and can help addressing a variety of customer needs. Their appearance can vary from more machine-like to more humanlike, and today they are increasingly integrated in a variety of settings and platforms such as websites, social media, mobile apps, and messaging services (Belanche et al., 2021). For example, Jamie, the ANZ bank's virtual digital assistant offers assistance and banking services to customers on the website (Pitardi et al., 2024) while the Starbuck barista chatbot takes coffee orders directly via the brand mobile app (Roderick, 2016). In fact, the market for chatbots and related technologies is forecasted to exceed USD 1.954 billion by 2027 (Fortune Business Insights, 2024b).

While chatbots have been mainly deployed in customer service settings where they are used to offer support to customers or guide them through purchase choices, lately companies have started to deploy the technology as a pivotal strategy for engaging customers through sponsored mobile messaging, a phenomenon called 'chatbot advertising' (Van den Broeck et al., 2019). For example, HelloFresh, a meal kit delivery service, utilizes a chatbot to identify its followers online and present exclusive discount codes, thereby incentivizing purchases (Sun et al., 2024). Facebook offers companies the possibility to use chatbots for re-marketing strategies by sending sponsored messages to those consumers who have previously contacted the company.

This context is new as, compared to previous settings of investigation, refers to the use of chatbots in unsolicited forms of communications delivered through customers' personal channels (i.e., smartphones and mobile devices). Yet very few studies examined the use of chatbots in advertising and promotions (e.g., Sun et al., 2024; Van den Broeck et al., 2019). This research aims to fill this gap and examines whether the use of chatbots in in-store mobile promotions enhance advertising effectiveness and influence customers' attitudes and intention to redeem.

An important characteristic of chatbot advertising is the potential intrusiveness that can be triggered by the communication. In fact, the absence of explicit consent from customers together with the use of their personal communication channels such as SMS or in-app messages may lead individual to perceive such types of promotions as highly intrusive (Boerman et al., 2017). This is not new to mobile advertising literature where perceptions of privacy (Grewal et al., 2016) and intrusiveness (Andrews et al., 2016) have been emphasized as the most important deterrent to customers' redemption in mobile promotions. When it comes to chatbot advertising, previous studies show that the perceived helpfulness and usefulness resulting from previous conversations with a chatbot can lower the intrusiveness of subsequent chatbot promotions (Van den Broeck et al., 2019). However, what will happen when a customer receives a chatbot promotion

in absence of previous contact remains unclear.

By adopting a Social Presence Theory perspective (Short et al., 1976; van Doorn et al., 2017), this work suggests that chatbot mobile promotions may result in more positive attitudes toward the promotion and higher intentions to redeem the offer compared to regular mobile promotions. Specifically, we propose that the social presence of a chatbot in a mobile promotion will increase perceptions of intimacy and decrease perceptions of intrusiveness, resulting in more positive attitudes toward the promotion and higher intentions to redeem. We also posit that the effect will be stronger when chatbot are more humanlike (vs. machinelike). Three experimental studies test these hypotheses.

This paper contributes to the nascent literature on chatbots advertising in several ways and makes the following contributions. First, while previous research focused on the use of chatbot advertising on websites and social media (e.g., Sun et al., 2024) this research focuses on in-store mobile promotions, providing insights into a different and managerially relevant consumption context. Moreover, it connects mobile advertising literature (e.g., Andrew et al., 2016; Grewal et al., 2018) to the emerging field of chatbot advertising (e.g., Van den Broeck et al., 2019) by showing that chatbots can increase in-store mobile promotions effectiveness.

Second, previous studies showed that perceived social presence in AI technology can help alleviates consumers psychological tensions with the technology (Flavián et al., 2024). Adding to this stream, this study unbundles how social presence is construed in mobile promotions, and it identifies perceived intimacy as the element that drive positive consumers' responses. Thus, it provides a more granular perspective of the effect of chatbots' social presence on consumer responses while deepening our understanding of persuasive AI technology.

Third, this study advances previous research on perceived intrusiveness (e.g., Noguti & Waller, 2020; Van den Broeck et al., 2019) identifying a novel mechanism that can help lower such perceptions. Specifically, this study shows that the perceived intimacy triggered by the chatbot presence decreases perceptions of intrusiveness of the mobile promotions, and this effect is stronger when chatbot are more humanlike (vs. machinelike).

Finally, findings from this study can be useful for managers and retailers interested in mobile promotions and advertising. Specifically, this research determines ways to increase in-store mobile promotions' effectiveness in terms of positive attitudes and promotion redemption through the use of chatbots. Moreover, it offers managers actionable insights to boost such effects by identifying chatbots' humanlike features as additional cues of intimacy.

THEORETICAL BACKGROUND

Mobile promotions and the advent of chatbot advertising

Mobile promotions are defined as promotion that "comprises information that is delivered on a mobile device and offers an exchange of value, with the intent of driving a specific behavior in the short term" (Andrews et al. 2016, p.15). Thus, mobile promotions usually include a clear exchange of value to the customer such as price discount, free sample, a gift with the purchase, or a 'buy one get one' offer, and have the goal to push consumer towards purchasing outcomes. Mobile promotions can be delivered as a push notification, which includes a promotional message received by the consumers directly on their mobile through different channels such as SMS, social media, or app, or can be actively searched by the consumer and delivered as browser-based or within-app, following a so-called pull-strategy (Andrews et al. 2016).

Literature identified several elements that influence consumers' responses to mobile promotions in-store. First, mobile promotions effectiveness is influenced by both location (i.e., the distance to the promoting store) and timing (i.e., coupon's expiration date and time of delivery) (Fong et al., 2015; Danaher et al. 2015; Zubcsek et al., 2017; Park et al., 2018). Mobile promotion redemption is higher when high-involvement products are promoted (Bart & Sarvary, 2014; Baker et al., 2014), when promotions are customized (Bue et al., 2017) and when the promotion is congruent with the consumer's shopping goals (Khajehzadeh et al., 2015; van't Riet et.al 2016; Luo et al., 2014). Moreover, weather (Li et al., 2017) and crowdedness (Andrews et al., 2016; Ghose et al., 2019) can impact mobile promotion effectiveness.

A new factor that can participate in enhancing mobile promotions effectiveness is the use of chatbots. Chatbot advertising can be considered a form of personalized advertising that merges the promotional component of the communication with the assistance provided by the agent. Being a recent advertising phenomenon, very few research investigated its effects on consumers responses. Van den Broeck et al. (2019) analyzed the use of chatbots advertising through the lens of the Technology Acceptance Model (Davis, 1985) and examined how the perceived usefulness and helpfulness of the chatbot influence patronage intentions. They showed that evaluations of perceived helpfulness and usefulness of previous conversations with a chatbot facilitate the acceptance of subsequent promotions and purchasing intentions. Recently, Sun et al. (2024) focused on the humanlikeness of chatbot advertising and found that high level of chatbot's interactivity, when associated with a narrative advertisement, increases consumers positive attitudes especially when the chatbot appearance is machinelike.

While these studies provide initial insights into the phenomenon, more research is needed to further explore effectiveness of chatbot advertising. First, both these studies focus on advertising embedded either in social media (i.e., Facebook) or company website, and no study to the best of the author's knowledge explored the use of chatbots in in-store mobile promotions. Given the relevance of the mobile advertising market, understanding whether chatbots can facilitate acceptance of in-store mobile promotion is important. Second, prior research either looked at the persuasiveness of chatbot advertising following a previous interaction with the agent (Van den Broeck et al., 2019) or at the combined effect of chatbot and specific type of advertisement (Sun et al., 2024). Whether chatbot are effective when merely deliver a promotion through a mobile channel (e.g., SMS, in-app messages) in absence of previous interactions remain unclear. By building on the Social Presence theory (Short et al., 1976), this study explores this question and examines the effects of the use of chatbot advertising in in-store mobile promotions on customers attitudes and intentions to redeem.

Chatbots, Social Presence and Perceived Intimacy

Social presence (hereafter SP) is generally defined as the feeling of being in the presence of another person (Short et al., 1976). While originally the concept was studied in the context of face-to-face communications, the theory has been largely applied to recent computer-mediated communications (e.g., Gefen & Straub, 2004) and human-robot interactions literature, where it has been termed Automated Social Presence (ASP; van Doorn et al., 2017).

According to Short et al., (1976), the degree of SP depends on the channel capacity of transmitting information via verbal and non-verbal cues. Thus, perceptions of SP change based on to the communication media types adopted with face-to-face communications representing the most effective method because encompass the existence of social clues, such as physical presence of communicators, tones of voice, body language, personal feelings, and immediate feedback. Moreover, SP is generally linked to two concepts: intimacy, which refers to the feeling of 'being with others', and immediacy, that refers to the 'being there' dimension of the construct (Choi et al., 2013).

In the context of interactions with conversational AI agents and chatbots, SP is defined as the extent to which technology makes individuals feel that they are interacting with another social entity (Pitardi & Marriott, 2021; Yoganathan et al., 2021). The advent of AI conversational agents and human-like technology brings a new level of SP to computer-mediated interactions (van Doorn et al., 2017). Thanks to their ability to interact, respond, and converse, chatbots and conversational agents are able to trigger high levels of SP and give users the illusion of interacting with another entity (Nass & Moon, 2000; Chattaraman et al., 2019).

Importantly, perceived SP in a communication can influences users' behaviors and responses. For example, greater level of SP can positively affect users' attitudes (Hassanein & Head, 2007), trust (Lu et al., 2016; Ogonowski et al., 2014), emotional connections (Araujo, 2018) and behavioral intentions for online shopping (McLean et al., 2020; Ogara et al., 2014). This has been supported also by recent research on chatbots, where the social presence of conversational AI agents has been found driving trust (Pitardi & Marriott, 2021), positive attitudes (McLean & Osei-Frimpong, 2019), satisfaction (Konya-Baumbach et al., 2023) and service evaluations (Yoganathan et al., 2021).

This is particularly relevant in the context of mobile promotions. Previous research emphasized that mobile communications may be perceived as invasive because of their transactional cold nature, which trigger forms of reactance in consumers (Grewal et al., 2016). On the contrary, the level of social presence triggered by chatbots may overcome such challenges. Building on the studies above, it is possible to expect that the mere presence of a chatbot in a mobile communication may results in more positive customers responses compared to regular mobile promotions. However, we suggest that in the case of in-store mobile promotions only the component of perceived intimacy (i.e., the feeling of being with other) may play a role. Perceptions of immediacy, which refers to the synchronicity of the communication, are generally elicited through interactivity (Lombard & Ditton, 1997). For example, conversational chatbots that engage users in back-and-forth conversations can be perceived as highly interactive and in turn create psychological closeness and a sense of 'being there'. Conversely, perceptions of intimacy are tied to the feeling of being with another person/entity and are generally associated to the ability of the chatbot to elicit a sense of human touch in the communication (Heirati et al., 2024; Pitardi & Marriott, 2021). With in-store mobile promotions, users can receive messages from a chatbot in absence of previous interactive conversations. Thus, perceptions of immediacy could not be as relevant as perceptions of intimacy. Based on the above, we expect that chatbot mobile promotions will trigger higher perceptions of intimacy in the communication compared to regular mobile promotions. Moreover, since perceptions of being in the presence of another person/entity are linked to more positive consumers attitudinal and behavioral responses, we expect that chatbot mobile promotions (vs. regular mobile promotions) may lead to more positive customers attitudes toward the promotion and higher intentions to redeem the promotion. Formally:

H1: Chatbot mobile promotions (vs. regular mobile promotions) result in higher perceptions of intimacy (H1a), more positive customers attitudes toward the promotion (H1b) and higher intentions to redeem the promotion (H1c).

Perceived Intrusiveness

Perceived intrusiveness is a form of psychological reactance (Brehm, 1966) and is defined as the degree to which individuals perceive an advertisement or a promotional content as interrupting their ongoing goals or activities (Edwards et al., 2002). Since the main purpose of any advertisement or promotion is to get noticed, by definition they seek to 'interrupt' individuals and interfere with their goals. The interruption can then result in negative reactions such as irritation, avoidance, resistance, and reactance.

Being mobile promotions unsolicited type of communications, they can result in higher level of perceived intrusiveness (Grewal et al., 2016). These perceptions of intrusion are also amplified by the very nature of mobile devices that are considered by consumers as a personal and private channel. When users receive a communication through them, the content of the promotion together with the inappropriate use of a personal medium can increase the perceptions of intrusiveness of the promotion and trigger negative reactions (Andrew et al., 2016).

Perceived intrusiveness is considered the most relevant deterrent of mobile advertising effectiveness (Grewal et al., 2016). Thus, understanding how these perceptions can be reduced is important. Previous research identified elements that can influence perceptions of advertising intrusiveness. Lack of consent in push communications such as mobile promotions (Heinonen & Strandvik, 2007; Unni & Harmon, 2007) and higher degrees of personalization (van Doorn & Hoekstra, 2013) tend to increase perceptions of intrusiveness. Also, longer interruptions and communications are perceived as more intrusive than shorter communications. Conversely, promotions that contains useful information and are aligned with consumers' goals and tasks are perceived as valuable and therefore are more accepted (Noguti & Waller, 2020). Moreover, intrusiveness decreases when consumers are not intensely mentally engaged in an activity (Edwards et al., 2002). In the context of chatbot advertising, perceived helpfulness and usefulness of previous interactions help lower intrusiveness of subsequent promotions (Van den Broeck et al., 2019).

In this study, we propose that an additional potential factor that can help decreasing perceptions of intrusiveness is the feeling of intimacy that a chatbot mobile promotions may trigger. Previous studies showed that advertisements that offer some form of consumer gratification such as escapism, enjoyment or emotional release are generally perceived as less intrusive (Li et al., 2002; Noguti & Waller, 2020). This happens because when consumers perceive some sort of benefits from an impromptu communication, the resulting gratification may counterbalance the perceptions of intrusiveness. We suggest that the perceptions of intimacy triggered by the presence of a chatbot in the

mobile promotions may provide the same benefit. Specifically, we suggest that when a chatbot delivers a mobile promotion, the sense of intimacy triggered by the presence of the chatbot will decrease perceptions of intrusiveness in turn leading to more positive consumers responses (Noguti & Waller, 2020; van Doorn & Hoekstra, 2013). Formally,

H2: The positive effect of chatbot mobile promotions on customers attitudes toward the promotion and redemption intentions is serially mediated by an increase of perceptions of intimacy and a decrease of perceived intrusiveness.

The role of chatbots' humanlikeness

Anthropomorphism refers to the extent to which chatbots and service robots are perceived as humanlike and it is generally based on consumers' attributions of the technology's human features, (e.g., physical appearance, name, face; Blut et al., 2021). That is, the more the agent looks like a human, the more consumers will perceive it as able of social connections (Pitardi et al., 2024) leading to higher perceptions of social presence (Holthöwer & Van Doorn, 2023; van Doorn et al., 2017). This is also confirmed by previous research on chatbots where it has been highlighted that perceived SP also varies within the configuration of the agent (Araujo, 2018; Yoganathan et al., 2021). Chatbots with an anthropomorphic appearance (e.g., face, eyes), humanlike attributes (e.g., human name, friendliness) and humanlike conversational abilities generate greater level of SP by eliciting both a sense of 'being with other' (i.e., intimacy) and 'being there' (i.e., immediacy). Thus, it is possible to expect that also in the context of mobile promotions, humanlike (vs. machinelike) chatbots will be more effective in triggering higher perceptions of intimacy, which will result in more positive consumers' outcomes. Thus, we propose,

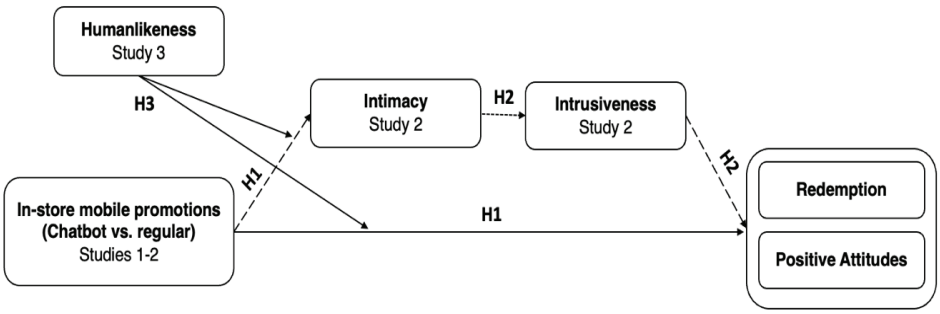
H3: Chatbot humanlikeness will increase the positive effect of mobile promotions on consumer responses such that the effect of chatbot mobile promotions on perceived intimacy, perceived intrusiveness, customers attitudes toward the promotion and redemption intentions will be stronger when the chatbot is humanlike (vs. machinelike).

OVERVIEW OF THE STUDIES

Three experimental studies were designed to test the predicted effect of chatbot mobile promotions on consumers' attitudes and intentions to redeem and explore the psychological mechanisms underlying such effects (see fig. 1). Study 1 was carried out to test our main effect and shows that when a mobile promotion is delivered by a chatbot (vs. no chatbot), consumers perceive higher feelings of intimacy, display more positive attitudes toward the promotion and are more willing to redeem the promotion offered. Study 2 adopts a different product category and aimed to assess the mediating role of

perceived intimacy and decreased intrusiveness as the mechanism explaining why individuals display more positive responses to chatbot mobile promotions compared to regular mobile promotions. Finally, Study 3 uses the same scenario as study 2 and aimed to test the role of chatbot's humanlikeness.

Figure 1. Conceptual model



STUDY 1

The purpose of Study 1 is to provide evidence of the proposed effect and examines consumers' responses to chatbot mobile promotions in a lab setting. Following our predictions, we expect that chatbot mobile promotions will increase perceptions of intimacy, positive attitudes toward the promotion, and intentions to redeem.

Participants and procedure

The study is a single factor (mobile promotions: chatbot vs. regular) between subject design. One-hundred-and-twenty-five respondents from a paid subject pool open to both students and nonstudents at a large European university participated in our study. Five participants were excluded from the analysis because they did not read the instructions properly, leaving a total of 120 participants for the analysis (Mage = 28.3, ranging from 18 to 46; Female = 51.2%). The study was conducted in a controlled lab setting with one participant per session. Each session lasted around 30 minutes in total.

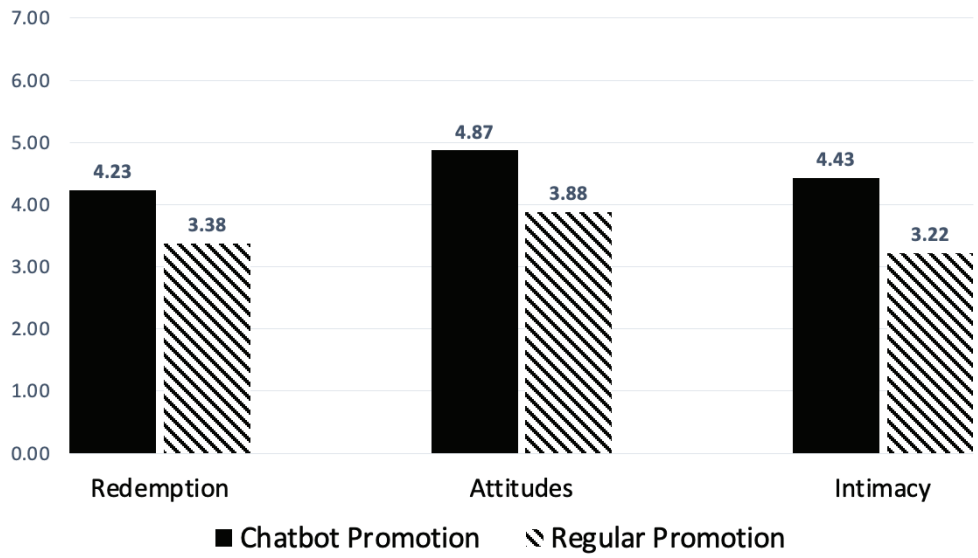
Following previous studies (Park et al., 2018), participants were instructed to imagine to be in a grocery shopping session for daily errands simulated through Qualtrics. To enhance the realism of the experiments (Morales et al., 2017) participants were able to choose products to add to their basket with an allowed max budget of 10€. To manipulate the type of mobile promotions, we designed two conditions: in the chatbot condition, a chatbot was directly embedded in the mobile promotion, while in the regular condition the promotion was sent by an unbranded grocery store (i.e.,

SuperM; see Appendix B for the stimuli). To check participants' awareness of receiving a chatbot (vs. a regular) mobile promotion, we asked them whether they saw a mobile promotion delivered by a chatbot or by a SMS, and excluded from the study those who selected the wrong option. To avoid brand influence, the offer promoted an unbranded lemon soda. Both promotions delivered the same offer and looked the same except for the presence of the chatbot. In both conditions, the promotion was displayed in the middle of the session. Next, we measured how much participants were willing to redeem the promotion offered, their attitudes toward the promotion, social presence, perceptions of intimacy and perceptions of immediacy. Product involvement and perceived relevance of the promotion were measured as control variables. Finally, participants answered a series of socio-demographic questions. The measurement scales for both studies are shown in Appendix A.

Results and discussions

First, we checked our manipulation. As expected, participants perceived higher levels of social presence in the chatbot (Mchatbot= 3.69) than the regular mobile promotion (Mregular= 2.66; $F[1,120] = 42.4$, $p < .001$). To test H1, a one-way ANOVA was performed. Results showed that chatbot mobile promotions result in higher intentions to redeem (Mchatbot = 4.23 vs. Mregular = 3.38; $F[1,120] = 19.62$, $p < .01$; $\eta 2 = .13$) and more positive attitudes toward the promotion (Mchatbot = 4.87 vs. Mregular = 3.88; $F[1,120] = 14.81$, $p < .05$; $\eta 2 = .06$). Moreover, they increase perceptions of intimacy in the communication (Mchatbot = 4.43 vs. Mregular = 3.22; $F[1,120] = 43.80$, $p < .001$; $\eta 2 = .14$) but no perceived immediacy (Mchatbot = 3.32 vs. Mregular = 2.98; $F[1,120] = 1.80$, $p = .32$). None of the control variables reached significance (product involvement: $p = .43$; relevance: $p = .32$).

Figure 2. Findings of Study 1



Study 1 provides support for H1a, H1b and H1c. The findings show that, compared to regular mobile promotions, chatbot mobile promotions are more effective in driving higher intentions to redeem the offer and positive attitudes toward the promotion. Moreover, as expected, they increase feelings of intimacy in the communication.

STUDY 2

The purpose of Study 2 is threefold. First, it explores whether chatbot mobile promotions results in lower degrees of perceived intrusiveness. Second, it tests the mediating effect of perceptions of intimacy and intrusiveness on the dependent variables. Third, it uses a different product category (i.e., shampoo) to increase robustness of our results. Following H2, we expect that an increase in perceptions of intimacy and a decrease of perceived intrusiveness serially mediate the effect of chatbot mobile promotions on attitudes and intentions to redeem.

Participants and procedure

Study 2 is a single factor (mobile promotions: chatbot vs. regular) between-subject design. A total of 170 respondents from the same paid subject pool of Study 1 participated in the study. Three participants were excluded from the analysis as they did not recognize the chatbot mobile promotion, leaving 167 participants for the final analyses (Mage = 31.1, ranging from 18 to 44; Female = 52.1%). The study uses the same scenario and design

of Study 1 with an exception: in this study the mobile promotion was focused on an unbranded shampoo (see Appendix B). In addition to the variables measured in study 1, study 2 also included measurements of perceived intrusiveness (see Appendix A).

Results and discussions

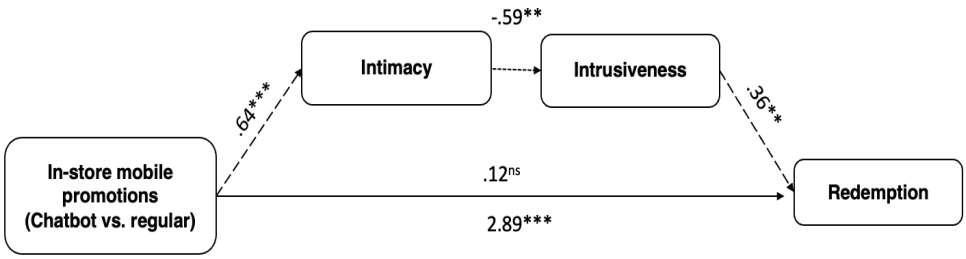
As expected, participants perceived higher levels of social presence in the chatbot condition (Mchatbot= 3.69) compared to the regular mobile promotion (Mregular= 2.66; $F[1,112] = 6.19$, $p < .01$), confirming a successful manipulation.

First, we replicated results of Study 1. A one-way ANOVA confirmed that chatbot mobile promotions result in higher intentions to redeem (Mchatbot = 4.02 vs. Mregular = 2.99; $F[1,167] = 171.16$, $p < .001$; $\eta 2 = .25$) , more positive attitudes toward the promotion (Mchatbot = 3.53 vs. Mregular = 2.25; $F[1,167] = 29.03$, $p < .001$; $\eta 2 = .15$). and higher perceptions of intimacy in the communication (Mchatbot = 4.03 vs. Mregular = 3.39; $F[1, 167] = 9.05$, $p < .01$; $\eta 2 = .05$). These results provide further support for H1a, b, and c. Importantly, results showed that chatbot mobile promotions also result in lower perceptions of intrusiveness (Mchatbot = 2.60 vs. Mregular = 3.40; $F[1, 167] = 11.40$, $p < .001$; $\eta 2 = .06$). None of the control variables (product involvement: $p = .24$; relevance: $p = .36$) nor perceived immediacy ($p = .28$) reached significance.

To test H2 we used PROCESS model 6 (bootstrapping resamples:10,000; Hayes, 2021). Mobile promotion type served as independent variable, perceived intimacy and perceived intrusiveness as serial mediators, and intentions to redeem the offer as the dependent variable (see Fig. 2). Mobile promotions positively impacted promotions' redemption ($\beta = 2.89$; 95% CI[2.37, 3.29]), which means that respondents displayed higher intentions to redeem the offer in the chatbot condition. Mobile promotions also increased perceptions of intimacy ($\beta = .64$; 95% CI[.22, 1.06]), meaning that respondents perceived higher degree of intimacy in the chatbot condition. Perceptions of intimacy negatively impacted perceptions of intrusiveness ($\beta = -.59$; 95% CI[-.83,- .36]) which, in turn, increased intentions to redeem ($\beta = .36$; 95% CI[.22, .52]). The serial indirect effect via perceived intimacy and perceived intrusiveness is significant ($\beta = .23$; 95% CI[.17, .43]), while the direct effect of the type of mobile promotion on redemption is no longer significant when controlling for the two mediators ($p = 0.18$), indicating full mediation.

We replicated the same analysis using attitude toward the promotion as dependent variable. Results showed a positive and significant indirect effect via perceived intimacy and perceived intrusiveness ($\beta = .31$; 95% CI[.22, .56]). Specifically, chatbot mobile promotion increased perceptions of intimacy ($\beta = .75$; 95% CI[.31, 1.32]) that in turn decreased perceptions of intrusiveness ($\beta = -.78$; 95% CI[-1.03,- .45]), ultimately increasing positive attitudes ($\beta = .47$; 95% CI[.29, .65]).

Figure 3. Study 2 serial mediation on promotion redemption.



Notes: ns p > .06; *p < .05; **p < .01; ***p < .001.

STUDY 3

Study 3 uses the same scenario of Study 2, and it aims to test the role of chatbot's humanlikeness. Following H3, we expect that when the chatbot is more humanlike (vs. machinelike vs. regular promotion), the overall effect on perceptions of intimacy, perceived intrusiveness, attitudes and intentions to redeem is stronger.

Participants and procedure

In Study 3, we randomly assigned 320 Prolific workers (Mage = 33.4, ranging from 18 to 47; Female = 51.9%) to one of the experimental conditions in a three-cell (mobile promotions: humanlike chatbot vs. machinelike chatbot vs. regular) between-subject design. Following previous studies (Pitardi et al., 2024), we manipulated the type of humanlikeness by adding a humanlike face to the humanlike condition (see Appendix B). In addition to the variables measured in study 1, study 3 also included measurements of privacy concerns, novelty, and familiarity (see Appendix A).

Results and discussions

First we checked our manipulation and, as expected, participants attributed different levels of social presence to the different conditions ($F[1,320] = 18.92$, $p < .001$; $\omega^2 = .16$). Planned contrasts showed that respondents attributed higher levels of social presence to the humanlike chatbot condition ($M_{hum\_chat} = 4.23$) compared to the machinelike chatbot ($M_{mach\_chat} = 3.65$; $t[1,320] = 5.24$, $p < .001$; $\omega^2 = .12$) and the regular mobile promotion ($M_{regular} = 3.10$; $t[1,320] = 5.61$, $p < .001$; $\omega^2 = .19$). Moreover, the machinelike chatbot condition showed higher levels of social presence compared to the regular promotion ($M_{mach\_chat} = 3.65$ vs. $M_{regular} = 3.10$; $t[1,320] = 8.76$, $p < .01$; $\omega^2 = .06$).

To test H3 and explore the effect of chatbot's humanlikeness on our variables, we performed a one-way ANOVA with planned contrasts. Results showed that as expected

humanlike chatbot mobile promotions resulted in higher intentions to redeem (Mhum_chat = 5.17 vs. Mmach_chat = 4.52 vs. Mregular = 3.18; F[1,320] = 47.75, p <.01; η2=.16) and more positive attitudes (Mhum_chat = 4.87 vs. Mmach_chat = 4.11 vs. Mregular= 3.10; F[1,320] = 17.22, p <.05; η2=.08) toward the promotion compared to the other two conditions. Similarly, the humanlike chatbot conditions resulted in higher perceptions of intimacy in the communication (Mhum_chat = 4.86 vs. Mmach_chat = 3.82 vs. Mregular = 2.99; F[1,320] = 14.32, p <.001; η2=.05) and lower perceptions of intrusiveness (Mhum_chat = 2.15 vs. Mhum_chat = 2.93 vs. Mregular = 3.60; F[1, 320] = 13.21, p <.001; η2=.05). Table 1 reports full statistics of planned contrasts. None of the control variables (familiarity: p = .34; novelty: p = .42) nor privacy concerns (p = .12) reached significance.

Figure 3. Study 3 Attitudes, redemption intentions, perceptions of intimacy, and intrusiveness means by mobile promotion type.

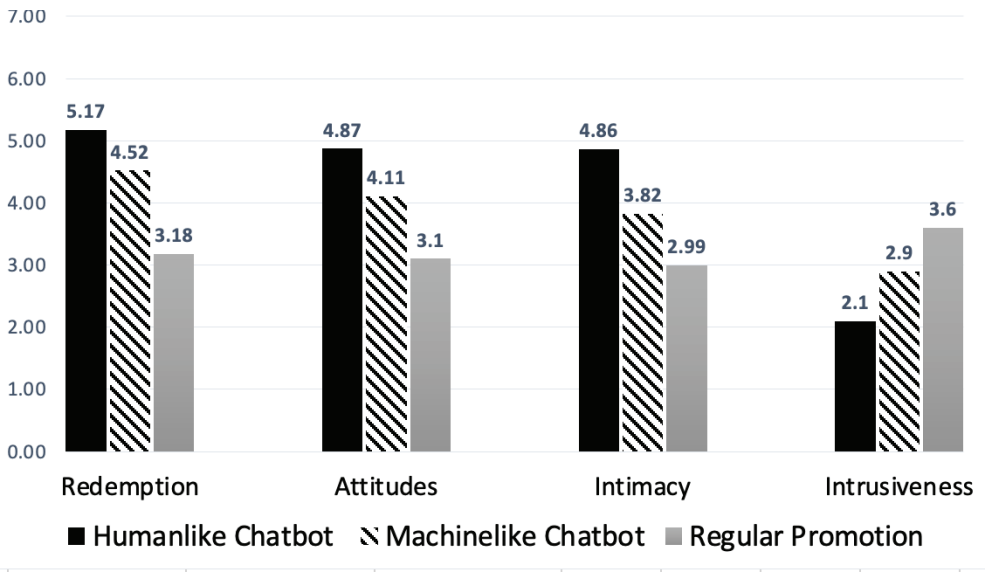


Table 1. Study 3: Planned Simple Contrasts for Hypotheses Testing

Variable	Contrast	Value of Δ Contrast	t	p	η^2
Redemption	.Humanlike Chatbot vs Machinelike Chatbot	65.	3.05	05.>	04.
	.Humanlike Chatbot vs Regular Promotion	1.99	4.29	001.>	19.
	.Machinelike Chatbot vs Regular Promotion	1.34	3.56	001.>	12.
Attitudes	.Humanlike Chatbot vs Machinelike Chatbot	76.	3.12	001. >	05.
	.Humanlike Chatbot vs Regular Promotion	1.77	5.23	001. >	11.
	.Machinelike Chatbot vs Regular Promotion	1.01	5.42	001. >	11.
Intimacy	.Humanlike Chatbot vs Machinelike Chatbot	1.04	4.89	001. >	07.
	.Humanlike Chatbot vs Regular Promotion	1.87	4.55	001. >	13.
	.Machinelike Chatbot vs Regular Promotion	83.	3.21	01. >	06.
Intrusiveness	.Humanlike Chatbot vs Machinelike Chatbot	78.-	2.98 -	01. >	05.
	.Humanlike Chatbot vs Regular Promotion	-1.45	3.49 -	001. >	09.
	.Machinelike Chatbot vs Regular Promotion	67.-	2.74 -	05. >	04.

To test the overall model, we used PROCESS model 6 (bootstrapping resamples:10,000; Hayes, 2021) where mobile promotion type served as independent variable, perceived intimacy and perceived intrusiveness as serial mediators, and intentions to redeem the offer as the dependent variable. Mobile promotions increased perceptions of intimacy (β = .49; 95% CI[.30, .68]), meaning that respondents perceived higher degree of intimacy in the chatbot condition. Perceptions of intimacy negatively impacted perceptions of intrusiveness (β =–.57; 95% CI[-.66,– .48]) which, in turn, increased intentions to redeem (β = .53; 95% CI[.34, .72]). The serial indirect effect via perceived intimacy and perceived intrusiveness is significant (β = .39; 95% CI[.09, .52]). The total effect of mobile promotions on promotions' redemption is positive and significant (β = .29; 95% CI[.09, .58]), which means that respondents displayed higher intentions to redeem the offer in the chatbot condition. However, the effect is no longer significant when controlling for the two mediators (p =.14), indicating full mediation.

We replicated the same analysis using attitude toward the promotion as dependent variable. Results showed a positive and significant indirect effect via perceived intimacy and perceived intrusiveness (β =.34; 95% CI[.21, .58]). Specifically, chatbot mobile promotion increased perceptions of intimacy (β = .66; 95% CI[.21, .89]) that in turn decreased perceptions of intrusiveness (β =–.98; 95% CI[-1.13,– .34]), ultimately increasing positive attitudes (β =.39; 95% CI[.22, .61]). Thus, H3 is confirmed.

DISCUSSIONS

This study examines chatbot mobile promotions effectiveness and investigated the psychological mechanism activated in such form of communication. As predicted, we found that chatbot mobile promotions delivered during an in-store expedition positively affects consumers attitudes toward the promotion as well as promotion redemption. We provide evidence of the underlining mechanism explaining why that the presence of a chatbot in mobile promotions influences consumer's behavior. More specifically, our results show that chatbot mobile promotions triggers higher feelings of intimacy that in turn decrease the perceived intrusiveness of the received promotion, leading to more positive consumers reactions. Further we show that the adoption of humanlike (vs. machinelike) chatbots boosts the overall effect.

Theoretical Implications

Our findings have implications for marketing theory and shopper marketing practice, contributing to the literature in several ways. First, in response to the call for more studies on consumer reactions to chatbot mobile promotion (Van den Broeck et al.,

2019), this paper provides evidence on the effectiveness of chatbots mobile promotions in driving redemption and positive attitudes. In doing so, it bridges the existing literature on mobile promotions (e.g., Andrew et al., 2016; Grewal et al., 2016) to the emerging field of chatbot advertising (e.g., Sun et al., 2024) demonstrating that, when imbedded in in-store mobile promotions, chatbots can increase their effectiveness.

Second, this research advances our understanding of the persuasive power of social presence when chatbots are adopted. Previous studies showed that the perceived social presence in interaction with conversational AI agents effectively results in positive consumers responses (e.g., Pitardi & Marriott, 2021; Yoganathan et al., 2021). By unbundling how social presence is construed when chatbots are involved, this study further advances prior literature by identifying perceive intimacy as the main dimension that drives positive responses in chatbot mobile promotions. Thus, it provides a more granular understanding of the mechanism behind the persuasiveness of chatbots used in in-store mobile promotions. Moreover, the study demonstrates that humanlike chatbots can further increase this effect by triggering high levels of perceived intimacy thus resulting in even higher intentions to redeem the offer and positive attitudes toward the promotion. These results confirm previous research on anthropomorphism and social presence (e.g., Yoganathan et al., 2021) while contributing to existing research investigating how technology with high levels of social presence can help alleviates consumers psychological tensions (Flavián et al., 2024).

Third, this research shows that perceptions of intimacy triggered by the chatbot can decrease the perceived intrusiveness of the promotion. Prior literature tried to find ways to reduce intrusiveness of general advertising and mobile promotions by looking at content and individuals' characteristics (e.g., Li et al., 2002; Noguti & Waller, 2020). Recently Van den Broeck et al. (2019) recognized perceived chatbot helpfulness and usefulness as drivers of reduced intrusiveness. We add to this stream by identifying perceived intimacy as an additional element that can help reducing perceptions of intrusiveness.

Finally, results from this study advance previous literature on chatbot advertising by examining a novel context of application that is in-store mobile promotions. So far, existing studies focused on the use of chatbot advertising on websites and social media (e.g., Sun et al., 2024). Adding to it, this research analyzes the use of chatbot mobile promotions in in-store retailing, advancing our understanding of the technology in a different and managerially relevant consumption context.

Managerial Implications

The mobile advertising market is booming in Oman (6Wresearch, 2024) and advertiser and practitioners are increasingly interested in advertising technologies that can enhance the effectiveness of mobile advertising initiatives. This research offers relevant implications for marketers interested in the adoption of chatbot in mobile promotions as well as and consumers and society in general.

First, our findings shows that the mere presence of a chatbot in a mobile communication in-store increases consumers' positive attitudes and, most importantly, intentions to redeem the offer promoted. Advertisers and retailers interested into the adoption of this new form of advertising may want to consider the possibility to implement the technology to stimulate unplanned purchases, basket variation and to increase overall spending in store.

Second, our results demonstrate that the presence of a chatbot in in-store mobile promotions can decrease the perceived intrusiveness through perceptions of intimacy. Concerns over consent and feelings of intrusion are the main reasons why consumers react negatively to mobile promotions. Our findings suggest that by embedding a chatbot in these promotional messages can help get the message through and increase the likelihood of promotion redemption. Specifically, we found that the feeling of intimacy of being with some else help decreasing perceptions of intrusiveness. Thus retailers, advertisers, and business managers in general should adopts chatbots agents in their mobile promotions to overcome consumers' concerns of intrusion and improve the effectiveness of their communications.

We also show that humanlike chatbots can further boost mobile promotions effectiveness. By adding anthropomorphic cues such as a name, a face, or a smile to the chatbot, managers can improve the effectiveness of their mobile promotions and increase customers' redemptions and positive attitudes by further increasing perceptions of intimacy. Advertisers and marketers can also use additional cues of intimacy to further alleviate perceptions of intrusion. For example, the use of more intimate language can help increasing the sense of intimacy in the communication and thus help the message get through.

Finally, our results also have implications for customers and society in general. Our findings demonstrate that the use of chatbots can alleviate feelings of intrusion in mobile communications. This can result in an improved and more positive experience for the customers. If regular mobile promotions can be perceived as 'cold', 'pushy' and 'intrusive', the intimacy triggered by the presence of chatbots can make the same promotions 'warm', 'intimate' and 'less invasive', that, in turn, may lead to relevant outcomes such as

engagement, satisfaction and increased sales. Moreover, while findings of these research refer to mobile promotions, our results can be relevant also for public services and organizations that uses mobile phones for their communications. For instance, public and social organizations such as governments and NGOs can adopt the use of chatbots to improve the effectiveness of their mobile messages to the public.

Limitations and future research

This study has several limitations which may provide fruitful directions for future research. First, we tested the effectiveness of chatbot mobile promotion by using a machine-like and a human-like chatbot. However, we did not consider additional chatbot's features such as the type of language used in the communication or the level of chatbot's interactivity that can increase perceptions of intimacy. Future research could explore these elements. For example, studies could test the moderating effect of different levels of interactivity and language type on our dependent variables and explore whether agents that are more interactive and intimate in their language result in even stronger effectiveness.

Second, in this research we did not take in consideration the influence of additional advertising' elements such as the degree of consistency of the promotion with the consumers' goals or the degree of personalization. Since these elements can potentially affect how much people perceive a mobile promotion as intrusive, future studies could examine their role and the potential interaction with perceptions of intimacy.

Future research could also explore the role of other advertising elements that can affect the overall social presence perceived in the communication and, consequently, the consumer's behavior. For instance, has been demonstrated that the degree of interactivity or the vividness of the message have strong effects on traditional advertising effectiveness (Fortin & Dholakia 2005), by moderating the level of social presence. Thus, another potentially promising direction may be to examine the interplay between the social presence conveyed by the chatbot used in the communication, and the social presence conveyed by the advertisement content (Lu, Fan and Zhou 2015).

Following prior research (e.g., Sun et al., 2024), this study utilizes scenario-based experimental methodology to recreate the customer experience within a store expedition. Future research could replicate our findings by performing field experiments adopting actual interaction with chatbot mobile promotions. Moreover, future studies could also explore our effects in different but related contexts such as online stores and out-of-store settings.

Finally, in this research we only analyzed the role of chatbots' humanlikeness on our effects and we did not examine customers' elements that could potentially moderate our effects. Various factors may interact with our variables and lead to a richer understanding of the phenomenon. For instance, future studies could analyze whether cultural differences, customers' level of technology readiness or chatbots' fatigue can change the effect of chatbot mobile promotions on perceptions of intimacy, attitudes, and redemption.

Table 2. Summary of main results and implications for business management

MAIN RESULTS	IMPLICATIONS FOR BUSINESSES
In-store chatbot mobile promotions increase positive attitudes toward the promotion and redemption intentions.	Advertisers and retailers can adopt chatbot mobile promotions to ● increase promotions' redemption; ● stimulate unplanned purchases; ● stimulate basket variation; ● increase overall spending in store.
The presence of a chatbot in in-store mobile promotions increases perceptions of intimacy that in turn decreases perceptions of intrusiveness.	Advertisers and retailers can adopt chatbots in their mobile communications to ● overcome consumers' concerns of intrusion; ● improve acceptance of their communications.

MAIN RESULTS	IMPLICATIONS FOR BUSINESSES
The use of humanlike chatbots in in-store mobile promotions further boost mobile promotions effectiveness.	Advertisers and retailers can increase mobile promotions effectiveness and redemption by adding anthropomorphic cues to the chatbot mobile promotions such as ● giving the chatbot a name; ● using a humanlike face/appearance.
The use of humanlike chatbots in in-store mobile promotions further increase perceptions of intimacy while decreasing perceptions of intrusiveness.	Advertisers and retailers can use anthropomorphic cues to help decreasing perceived intrusiveness. For example, they can ● **give the chatbot a name;** ● use a humanlike face/appearance; ● adopt an intimate and warm language style.

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APPENDIX A. Measurement items and reliability

Variable	Items	Scale Reliability			References
		Study 1	Study 2	Study 3	
Promotion Redemption	How likely would you use the promotion ?offered very unlikely', 7 =' = 1 "very likely	.n.a	.n.a	.n.a	Park et al. ((2019
Attitudes toward the promotion	The mobile promotion is good The mobile promotion is pleasant The mobile promotion is favorable	92.	92.	89.	Sun et al. ((2024
Perceived Intimacy	How much do you think the mobile pro-...motion was Not intimate – Intimate Impersonal – Personal Public – Private Unfriendly - Friendly	84.	82.	81.	Caughlin et al., .((2009

Variable	Items	Scale Reliability			References
		Study 1	Study 2	Study 3	
Perceived Intrusiveness	How much do you think the mobile promotion was... Distracting Disturbing Forced Interfering Intrusive Invasive Obtrusive		93.	91.	(Li et al. (2002
Perceived Immediacy	How much do you think the mobile promotion was... Unresponsive – Responsive Dead – Lively Remote - Immediate	88.	82.	83.	Adapted from Choi et al. ((2013

Variable	Items	Scale Reliability			References
		Study 1	Study 2	Study 3	
Social Presence	There is a sense of human contact in the mobile promotion There is a sense of personalness in the mobile promotion. There is a sense of sociability in the mobile promotion. I felt a sense of human warmth with the mobile promotion. I felt a sense of human sensitivity with the mobile promotion.	90.	88.	91.	Adapted from Gefen & Straub, (2004)
Perceived relevance	The information in the mobile promotion is important to me The information in the mobile promotion is relevant to me The information in the mobile promotion means a lot to me	84.	83.	-	Van den Broeck et al. (2019)

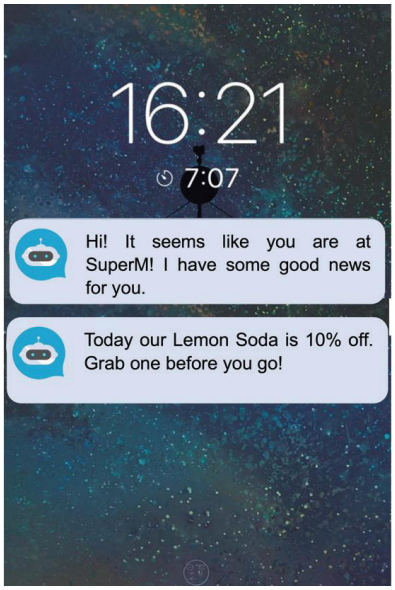
Variable	Items	Scale Reliability			References
		Study 1	Study 2	Study 3	
Product involvement	I choose lemon soda/ shampoo carefully. Choosing lemon soda/ shampoo is an important decision to me. I am particularly interested in lemon soda/ shampoo. When I buy lemon soda/shampoo, I focus on it intensively	81.	89.	-	Adapted from Bues et al. ((2017
Perceived Novelty	I have never seen a mobile promotion like this before This mobile promotion is unusual.	-	-	r = .79	Adapted from Pitardi et al. ((2021
Familiarity	How familiar are you with this type of mobile promotion? 1 = 'not familiar at all', 7 = 'very familiar'	-	-	-	Adapted from Pitardi et al. ((2021

Variable	Items	Scale Reliability			References
		Study 1	Study 2	Study 3	
Privacy concerns	I am concerned that through mobile promotions the company will gather too much personal information about me use my personal data for purposes other than the reason I provided the information for share my personal information with other parties.	-	-	78.	Adapted from (Li et al. (2002

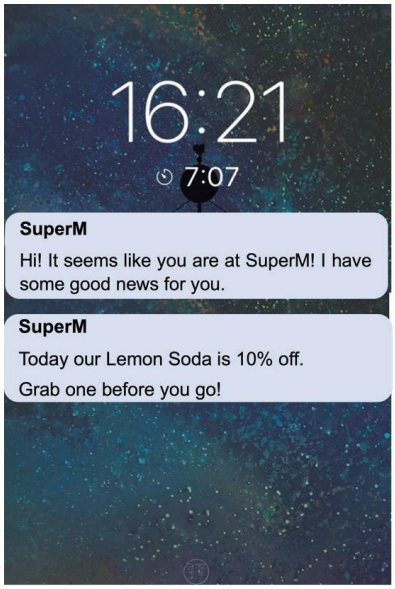
Scale reliability refers to Cronbach's Alpha (α) for scales with three items or more and Pearson Correlation Coefficient (r) to scales with two items. Unless otherwise specified, all scales used 7-point Likert- type scales anchored in 1 = "strongly disagree" and 7 = "strongly agree".

APPENDIX B. Stimuli

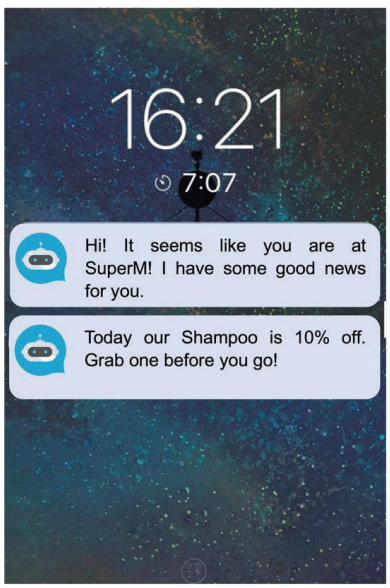
Study 1 Chatbot Mobile Promotion



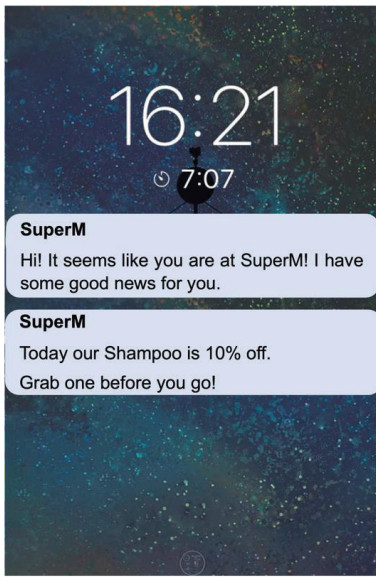
Regular Mobile Promotion



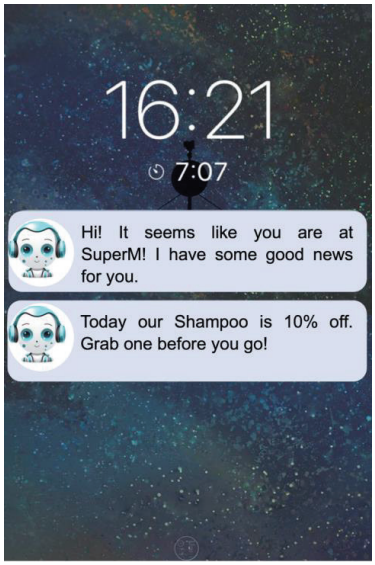
Study 2 Chatbot Mobile Promotion

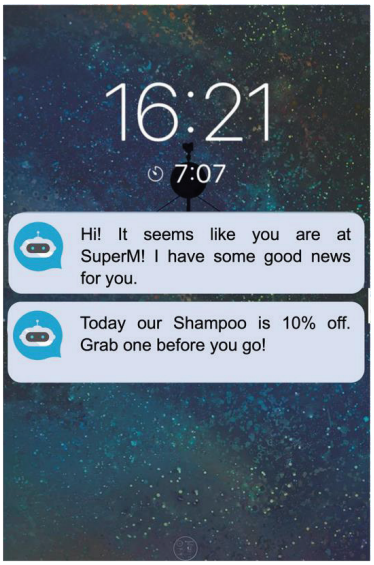


Regular Mobile Promotion

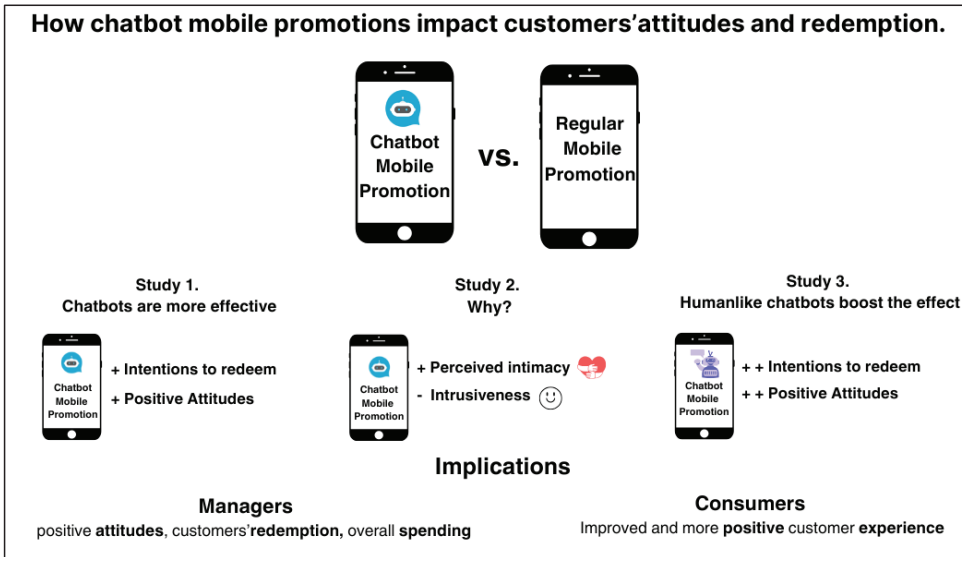


Study 3 Humanlike Chatbot Mobile Promotion Machinelike Chatbot Mobile promotion





INFOGRAPHIC



كيف تؤثر العروض الترويجية للهاتف المحمول على سلوك العملاء وإخلاصهم

الدكتورة فالنتينا بيتاردي

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المستخلص:

الغرض - من خلال اعتماد منظور التواجد الاجتماعي ، تهدف هذه الورقة إلى التحقيق في استخدام روبوتات المحادثة في العروض الترويجية للجوال داخل المتجر. على وجه التحديد ، يفحص ما إذا كانت العروض الترويجية للهواتف المحمولة لروبوت المحادثة تؤثر على مواقف المستهلكين ونواياهم لاسترداد العرض الترويجي. المنهجية - يتبنى هذا العمل نهجا تجريبيا ويبلغ عن ثلاث تجارب معملية. النتائج - تشير النتائج إلى أن روبوتات المحادثة (مقابل العروض الترويجية العادية للهاتف المحمول) في المتجر تزيد من فعالية الترويج للجوال. على وجه التحديد ، تظهر الدراسة 1 أن العروض الترويجية للجوال لروبوت المحادثة تؤدي إلى مواقف إيجابية أعلى تجاه العرض الترويجي ونوايا أعلى لاسترداد العرض. توضح الدراسة 2 أن التأثير الإيجابي للعروض الترويجية للهاتف المحمول لروبوت المحادثة مدفوع بزيادة العلاقة الحميمة المتصورة وانخفاض التطفل المتصور. توضح الدراسة 3 أن روبوتات الدردشة الشبيهة بالبشر تعزز فعالية العروض الترويجية للجوال في المتجر.

الأصالة - هذه الدراسة هي واحدة من أولى الدراسات التي بحثت في استخدام chatbot في الترويج للجوال داخل المتجر وتقدم رؤى تجريبية ووضوحا مفاهيميا في إقناع تقنية الذكاء الاصطناعي.

الآثار العملية - يمكن لروبوتات الدردشة زيادة فعالية الترويج للجوال داخل المتجر لأن اتصالاتها ينظر إليها على أنها أكثر حميمية وبالتالي أقل تدخلا. المعلنون. وبالتالي يجب على المسوقين وتجار التجزئة تشجيع استخدام إعلانات روبوت المحادثة داخل المتجر لأنها قد تزيد من إجمالي عمليات الشراء من خلال تسهيل استرداد الترويج.

نوع الورق - الورق الأصلي

الكلمات المفتاحية:

- إعلانات Chatbot ، التواجد الاجتماعي ، العلاقة الحميمة ، التطفل ، العروض الترويجية للجوال في المتجر