

# Antecedents and consequences of chatbot initial trust

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## Abstract

**Purpose** – Artificial intelligence chatbots are shifting the nature of online services by revolutionizing the interactions of service providers with consumers. Thus, this study aims to explore the antecedents (e.g. compatibility, perceived ease of use, performance expectancy and social influence) and consequences (e.g. chatbot usage intention and customer engagement) of chatbot initial trust.

**Design/methodology/approach** – A sample of 184 responses was collected in Lebanon using a questionnaire and analyzed using structural equation modeling (SEM) by AMOS 24.

**Findings** – The results revealed that except for performance expectancy, all the other three factors (compatibility, perceived ease of use and social influence) significantly boost customers' initial trust toward chatbots. Further, initial trust in chatbots enhances the intention to use chatbots and encourages customer engagement.

**Research limitations/implications** – The study provides insights into some variables influencing initial chatbot trust. Future studies could extend the model by adding other variables (e.g. customer experience and attitude), in addition to exploring the dark side of artificial intelligence chatbots.

**Practical implications** – This study suggests key insights for marketing managers on how to build chatbot initial trust, which, in turn, will lead to an increase in customers' interactions with the brand.

**Originality/value** – The current study marks substantial contributions to the artificial intelligence marketing literature by proposing and testing a novel conceptual model that examines for the first time the factors that impact chatbot initial trust and the key outcomes of the latter.

**Keywords** Artificial intelligence, Chatbot initial trust, Customer engagement, Chatbot usage intention, Chatbot trust

**Paper type** Research paper

## 1. Introduction

The world is undergoing a time of profound revolutions powered by artificial intelligence (AI). Developments in AI marketing practices especially in advertising and Martech fields are paving the way for marketers to provide distinctive experiences to customers (Roy and Naidoo, 2021). For instance, organizations are effectively using AI-equipped chatbots that support buyers through their purchasing journey (Pizzi *et al.*, 2021).

AI chatbot system “is a software program that interacts with users using natural language” (Ciechanowski *et al.*, 2019, p. 540). AI-Chatbots are able to communicate with consumers through regular and open-ended questions (McKinsey and Company, 2019). Moreover, by using chatbots, businesses can interact with prospects 7 days per week, 24 h a day, independent of working hours. In addition, Chatbots differ from any other types of AI technology in their ability to sell and place orders directly to customers without any human touch, they knowledgeably cooperate with shoppers and help them attain their shopping



goals (Pantano and Pizzi, 2020). Thus, chatbots can permit the efficient use of buyers' time and can offer superior understandings concerning product availability and performance (Chung *et al.*, 2019; Zhang and Dholakia, 2018).

Furthermore, Chatbots are virtual assistants that can contribute to building vital consumer relationships (Shumanov and Johnson, 2021), for example, during AI chatbots – customer interaction, chatbots recommend content based on customers' buying trends, purchase histories and previous conversations (Kaczorowska-Spychalska, 2019; Zumstein and Hundertmark, 2017). In addition, chatbots are able to enhance the entire customer purchasing journey starting from discovery to desire, buying, distribution and repurchasing again (Kaczorowska-Spychalska, 2019). Despite this, customers have disclosed frustration with AI chatbots, which is coming from confusing questions, inappropriate answers and a failure in representing human service agents (Elliott, 2018). In addition, Murtarelli *et al.* (2021) mentioned that AI chatbots increase possible ethical concerns involving online consumers in which they could be programmed to use consumers' data for different purposes. Despite the mixed views around AI chatbots and the potential to promote related literature in AI, there is still limited research in this area (Jang *et al.*, 2021).

The vast majority of research on online customer trust has concentrated on the general concept of trust, which builds between organizations and consumers after repeated experiences over time (Koufaris and Hampton-Sosa, 2004). For instance, numerous scholars have explored the predictors and outcomes of general trust in traditional e-commerce (Corritore *et al.*, 2003; Pi *et al.*, 2012; Lu *et al.*, 2016), and M-commerce (Marriott and Williams, 2018; Nel and Boshoff, 2017). However, the factors prompting online trust may possibly vary across different platforms and communication techniques (Sarkar *et al.*, 2020), especially with chatbots, which differ from other types of non-AI technology in terms of their unique human-like features (Pantano and Pizzi, 2020).

Nevertheless, research on chatbot trust is still nascent (Wilson-Nash *et al.*, 2020; Chung *et al.*, 2019; Dwivedi *et al.*, 2019). In addition, prior research (Youn and Jin, 2021; Przegalinska *et al.*, 2019; Chung *et al.*, 2019) acknowledged the issue of trust in AI, which suggests that chatbot trust is a crucial facet that should be considered. Moreover, Van den Broeck *et al.* (2019) suggested that future research involving chatbots should not overlook the concept of trust. Noting that, it is important to recognize initial trust after interaction with new technologies (Koufaris and Hampton-Sosa, 2004). Thus, this research focuses on the initial trust concept that emerges after an individual has the first experience with AI chatbots. To the best of our knowledge, predictors of chatbots' initial trust lack empirical investigation in the marketing realm. Therefore, this emerging trend of robotization requires researchers to work on implementing marketing techniques to create trustworthy conversational agents (Przegalinska *et al.*, 2019).

In addition, companies consider customer engagement as an important outcome of being present online (Sashi, 2012). Moreover, Liu *et al.* (2018) argued that the level of trust in companies' virtual technologies impacts customers' online engagement levels (e.g. blogging, writing reviews and E-WOM support). Nevertheless, the impact of initial trust on customer engagement in e-commerce has been underestimated by previous marketing scholars (Wongkitrungrueng and Assarut, 2020). Therefore, it is essential to explore for the first time the effect of initial trust on customer engagement.

Accordingly, this study aims to fill the gap in the existing literature by first exploring the factors that influence initial trust toward AI-chatbots innovations and second, by testing the impact of chatbot initial trust on customer engagement and intention to use a chatbot. In this vein, we put forward a holistic and novel research framework that is theoretically grounded on three deep-rooted theories: diffusion of innovation (DOI) theory (Rogers, 1995), unified

theory of acceptance and use of technology (UTAUT) (Venkatesh *et al.*, 2003), and technology acceptance model (TAM) (Davis, 1989). It is worth noting here that the impact of the chosen variables from these streams as antecedents to initial trust in e-commerce has created a lot of debate. Thus, this study contributes to the literature by constructing a framework and testing, for the first time, the influence of some important factors on chatbot initial trust and elucidates the role of chatbot initial trust in building both chatbot usage intention and consumer's engagement with a brand, which is considered as an essential benefit for organizations from being present online.

The structure of the current study is organized as follows: First, the literature review and hypotheses development are displayed, followed by the implemented methods. Afterward, the results and analysis are presented followed by the discussion part of the findings. Subsequently, the theoretical and managerial implications are presented. Finally, the limitations and future research suggestions are outlined.

## 2. Literature review

### 2.1 Artificial intelligence chatbot and initial trust

Our research emphasizes initial trust that differs from general trust in terms of the temporal stage of the development of trust (Kim *et al.*, 2009), where initial trust describes the initial phases of customer trust relationship with, for example, a company's new technology and it is an essential factor in building long-term relationships (McKnight *et al.*, 1998). Trust is a dynamic notion that grows with time and prior studies have argued on the importance of examining initial trust, specifically in novel technologies situations where consumers must overcome ambiguity before using the new technology (Li *et al.*, 2008).

Koufaris and Hampton-Sosa (2004) claimed that initial trust is developed after consumers have a first experience with an organization's new technology. However, their definition of initial trust is different from McKnight *et al.* (1998, p. 474), which stated that "initial trust between parties will not be based on any kind of experience," but on institutional cues. In line with previous research on novel technologies (Kaabachi *et al.*, 2019; Oliveira *et al.*, 2014; Li *et al.*, 2008) this study will follow McKnight *et al.* (1998) view of initial trust.

Initial trust is critical in all types of interactions and relationships, for instance, buyer-seller interactions (Mukherjee and Nath, 2007). In addition, the role of initial trust in different technologies, for example, e-shopping (Koufaris and Hampton-Sosa, 2004) and m-banking (Kaabachi *et al.*, 2017) has been extensively explored. Koufaris and Hampton-Sosa (2004) proposed a model to elucidate how customers of an e-commerce company generate initial trust after their first visit. Where Kaabachi *et al.* (2017) studied individuals' initial trust formation toward internet-only banks acceptance using TAM, DOI and theory of reasoned action (TRA).

However, the main difference between non-AI technologies and AI-chatbots lies in the fact that chatbots' human-like features, such as natural language interaction, deliver a feeling of human contact and sociability, which stimulate the sense of social presence (Pantano and Pizzi, 2020; Koponen and Rytty, 2020; Potdar *et al.*, 2018). It is worth noting here that technologies, which stimulate the feeling of social presence, are more likely to be trusted (Ogonowski *et al.*, 2014). Moreover, while interacting with a chatbot, shoppers possibly do not realize the difference between a chatbot and a conversational human being (Candello *et al.*, 2017) and might consider a chatbot as a fellow human (Nordheim *et al.*, 2019). Furthermore, chatbots' human-like qualities can stimulate the affective side of their relationship with shoppers, such as trust (Pantano and Pizzi, 2020; De Visser *et al.*, 2016; Holtgraves *et al.*, 2007). Finally, as AI-chatbots has many new features that affect initial trust formation, thus, we aim to study initial trust regarding the AI-chatbots.

## 2.2 Antecedents of chatbot initial trust

The antecedents of initial trust have received substantial attention in the new technologies context (Talwar *et al.*, 2020). For instance, in previous studies, Zhou (2011) discussed the influence of information quality, structural assurance and system quality on initial trust. Furthermore, the influence of both peripheral (such as functional consistency) and central cues (computer monitoring) were also studied on initial trust formation (Yang, 2016; Silic and Ruf, 2018). Talwar *et al.* (2020) argued that perceived information and service quality both stimulate initial trust, while perceived uncertainty and perceived asset specificity both are inhibitors of initial trust. In addition, prior scholars suggested that factors such as social presence, security perception, brand trust, site usability, brand reputation, trust propensity, website quality and the support of government also stimulate initial trust formation (Zhang *et al.*, 2018; Ogonowski *et al.*, 2014; Lowry *et al.*, 2008; Susanto *et al.*, 2013).

Moreover, the trust literature also suggests technology theories as a ground base for exploring initial trust (Talwar *et al.*, 2020; Kaabachi *et al.*, 2019; Gefen, 2004). For instance, theories such as UTAUT (Venkatesh *et al.*, 2003), TAM (Davis, 1989) and DOI (Rogers, 1995), are most extensively used as theoretical bases while exploring initial trust in the e-commerce context (Kaabachi *et al.*, 2019; Chaouali *et al.*, 2016; Shareef *et al.*, 2017; Zhou, 2011). Thus, our study considered the most important variables from the aforementioned interrelated theories and explore initial trust from this view to avoid overlapping assessments with other variables from different theories (Mardiana *et al.*, 2015).

The UTAUT is well-established in literature and empirically validated in the technology context and consumer behavior domain (Baptista and Oliveira, 2015; Dwivedi *et al.*, 2011; Chaouali *et al.*, 2016). UTAUT was developed by Venkatesh *et al.* (2003) to assess the possibility of success for new technologies and it also helps in understanding the drivers of acceptance of new technologies implemented by companies. This theory consists of four variables, namely, performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh *et al.*, 2003). However, according to prior studies (Venkatesh *et al.*, 2003; Casey and Wilson-Evered, 2012; Zhou *et al.*, 2010; Luo *et al.*, 2010; Riffai *et al.*, 2012) performance expectancy is by far the most prominent factor in UTAUT that explains individuals' behavior. Moreover, Dwivedi *et al.* (2011) concluded that social influence is the second most influential factor determining behavioral intention. Thus, in our study performance expectancy and social influence were chosen from the UTAUT as antecedents to chatbot initial trust. Noting that the UTAUT establishment was based on integrating theories such as TAM and DOI (Dwivedi *et al.*, 2011). However, prior studies (Kaabachi *et al.*, 2019; Choudrie *et al.*, 2018) still use the theories together on which UTAUT was based.

TAM has been extensively denoted as a reference point for studies in technology realms (Sarkar *et al.*, 2020; Zhang *et al.*, 2018; Faqih, 2016). TAM was developed by Davis (1989) and it contends that the intention to use new technologies is highly dependent on personal behavioral intention, which is influenced by perceived usefulness and perceived ease of use. Previous studies examining the adoption of new technologies consistently showed that both perceived ease of use and perceived usefulness are important drivers of initial trust and behavioral intention toward adopting new technologies (Li and Yeh, 2010; Zhang *et al.*, 2018; Chen and Barnes, 2007; Wen *et al.*, 2011). However, performance expectancy from the UTAUT (Venkatesh *et al.*, 2003) is similar to the perceived usefulness of TAM and relative advantage of DOI theory (Zhou *et al.*, 2010; Venkatesh *et al.*, 2003; Oliveira *et al.*, 2014). Thus, in our study, perceived ease of use was the only factor adopted from TAM.

DOI is a commonly used theory for examining consumers' acceptance of new technologies (Jeyaraj *et al.*, 2006; Faqih, 2016). DOI theory explains that consumers' behavior

toward new technology is due to the beliefs they form about the new technology (Davis, 1989). DOI comprises five technology-related facets, which are considered as central factors that influence acceptance or refusal of innovation. These factors are relative advantage, compatibility, complexity, trialability and observability. However, the first three factors have been considered as the most influential factors concerning consumers' acceptance of new technologies (Faqih, 2016; Moore and Benbasat, 1991). Noting that, relative advantage and perceived usefulness are frequently considered similar to each other (Moore and Benbasat, 1991; Zhou *et al.*, 2010). In addition, complexity is the opposite of perceived ease of use (Moore and Benbasat, 1991; Zhou *et al.*, 2010). Thus, compatibility was the only factor chosen from DOI theory in our study.

Prior research has also progressed by combining different models to explore trust. For instance, Oliveira *et al.* (2014) combined task technology fit (TTF) (Goodhue and Thompson, 1995), UTAUT (Venkatesh *et al.*, 2003) and initial trust model (ITM) (Kim *et al.*, 2009) to extend the understanding of technology adoption. In addition, Oliveira *et al.* (2014) considered performance expectancy as an antecedent to initial trust. Moreover, prior research (Chaouali *et al.*, 2016; Kaabachi *et al.*, 2019; Gu *et al.*, 2016; Yap *et al.*, 2010) have explored the indirect relationship between perceived characteristics of technology (e.g. performance expectancy, social influence, compatibility and perceived ease of use) and intention to use it and considered trust as a mediator to these relationships.

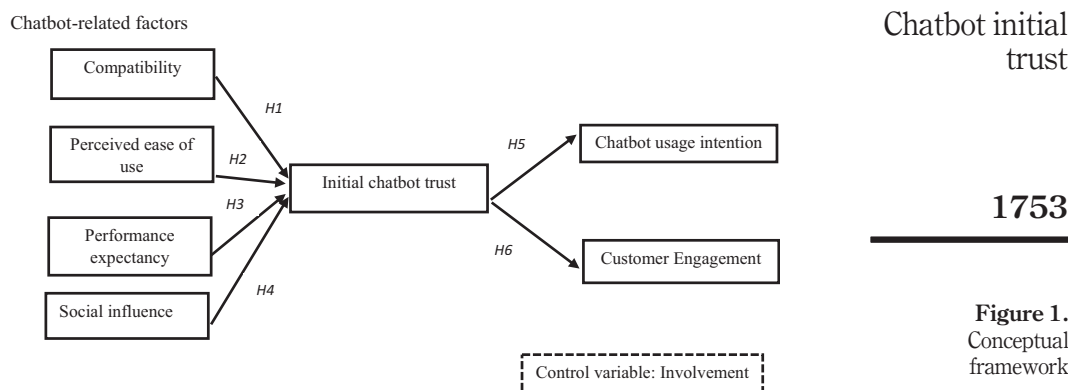
On the other hand, Talwar *et al.* (2020) developed a model by integrating systems success (ISS) model, transaction cost economics (TCE) theory and the IT continuance model to examine initial trust and mobile-payment intention. However, Talwar *et al.* (2020) considered initial trust as an antecedent to perceived usefulness. Moreover, Zhou *et al.* (2010) combined both UTAUT and TTF to propose an enhanced technology adoption model, which also studied initial trust as an antecedent to perceived usefulness. Furthermore, Gefen *et al.* (2003) applied TAM in the online shopping context and proposed perceived ease of use as an antecedent to trust but perceived usefulness as a consequence of trust. Oh *et al.* (2009) integrated TAM and proposed trust as a variable parallel to ease of use and usefulness. Therefore, in the light of these mixed results, the position of trust while using technology theories still remains unclear and requires further investigation.

Finally, in this study, the four most important factors (namely, compatibility, perceived ease of use, performance expectancy and social influence), which were drawn from the previously mentioned theories are tested as antecedents to chatbot initial trust, as shown in the conceptual framework (Figure 1).

**2.2.1 Compatibility.** Compatibility takes an essential part in the DOI, where individuals are willing to accept an innovation that is compatible with their value system (Tornatzky and Klein, 1982). Moore and Benbasat (1991, p. 195) defined compatibility as "the degree to which an innovation is perceived as being consistent with the existing values, needs and past experiences of potential adopters." Based on the DOI theory (Rogers, 1995), it has been established that compatibility influences customers' initial trust toward e-tailers (Lin *et al.*, 2011).

Furthermore, the compatibility factor is a fundamental facet leading to technology initial trust and adoption (Singh and Sinha, 2020). Kaabachi *et al.* (2019) also confirmed that compatibility is a principal determinant for initial trust in Internet banking services. Moreover, Lee *et al.* (2003) claimed that compatibility augments consumers' trust in m-banking services. Thus, it is expected that the compatibility of the chatbot system might be an influencing variable that might lead to trusting chatbots. Therefore, we formulate our first hypothesis:

*H1. Compatibility positively influences chatbot initial trust.*



**2.2.2 Perceived ease of use.** Perceived ease of use is referred to as individuals' likelihood to believe that using a new system would be effortless (Davis, 1989). Effort expectancy, as introduced by the UTAUT (Venkatesh *et al.*, 2003), is used interchangeably with perceived ease of use from TAM (Davis, 1989), but most of the studies on technology have adopted perceived ease of use as the study variable (Sarkar *et al.*, 2020; Lai *et al.*, 2011; Nel and Boshoff, 2017). Previous studies have emphasized a significant impact of ease of use toward enhancing trust, in particular, the initial trust of users toward technology forms (Zhou, 2018; Gefen *et al.*, 2003). Sarkar *et al.* (2020) postulate that the challenges presented by any technology can be diminished by enhancing the perceived ease of use. In addition, Robey (1979) posits that new technologies that do not assist individuals while performing their tasks are less likely to be favorably accepted despite the deliberate implementation efforts. Moreover, individuals must also be able to use any technology appropriately with a slight chance of doing mistakes, as this, in turn, impacts the trust toward this technology (Zhou, 2018), the chatbot in our case. Therefore, it is expected that perceived ease of use would enhance initial trust toward chatbots. Accordingly, we posit the following hypothesis:

**H2.** Perceived ease of use positively influences chatbot initial trust.

**2.2.3 Performance expectancy.** Venkatesh *et al.* (2003) described performance expectancy as the degree to which a person presumes that using a particular program will assist him/her in achieving job performance gains. According to Loureiro *et al.* (2018), performance expectancy implies that using online technology supports customers in performing certain activities such as searching for information, paying conveniently and executing other tasks in the purchasing process. Moreover, prior studies showed that initial trust is shaped when customers recognize the benefits of using new technology (Kim *et al.*, 2009). Furthermore, performance expectancy shapes initial trust where previous research revealed an affirmative association between performance expectancy and initial trust in the digitalization realm (Gu *et al.*, 2016; Oliveira *et al.*, 2014). Therefore, we argue that performance expectancy is a focal factor that supports chatbot initial trust. Thus, we formulate the following hypothesis:

**H3.** Performance expectancy positively influences chatbot initial trust.



*2.2.4 Social influence.* According to the UTAUT (Venkatesh *et al.*, 2003, p. 451), social influence is “the degree to which an individual perceives that important others believe he or she should use the new system.” It considers the influence of environmental elements (such as the beliefs of consumers’ relatives and friends) on consumer behavior (Lopez-Nicolás *et al.*, 2008). Those beliefs will influence consumers’ trust and usage of new technologies (Chaouali *et al.*, 2016; Hong *et al.*, 2008).

According to Baabdullah (2018), social influence has a salient role in prompting trust toward a particular product/service. This factor helps in signifying diverse opinions about concerns related to the consistency of a product/service, compatibility and usefulness, thus potential users will be capable to frame their intention to use or not to use a particular product/service (Kaabachi *et al.*, 2019). Furthermore, Chaouali *et al.* (2016) revealed that social influence positively impacts consumers’ trust in online channels. In addition, the empirical study by Shareef *et al.* (2017) confirms social influence as a focal factor in developing customer’s trust. Hence, it could be anticipated that social influence would build initial trust in the chatbot. Therefore, we posit:

*H4.* Social influence positively influences chatbot initial trust.

### *2.3 Chatbot usage intention*

Previous literature on trust portrayed a close connotation between consumers’ beliefs on specific perceived attributes of certain technologies and intention to participate in trust-related actions (Kim and Ko, 2012; Zhou and Tian, 2010). Moreover, if individuals believe that the other party is trustful and honest, then they will be more willing to shape a trusting intention concerning that party (Kaabachi *et al.*, 2017). Several studies in the realm of technology adoption emphasized the prominence of trust as an essential tool in enhancing customer relationships with new technologies (Liébana-Cabanillas *et al.*, 2017).

In addition, previous studies have reinforced that intentions to patronize advanced technologies such as mobile banking and online shopping services depend on customers’ trusting beliefs toward this new technology (Kaabachi *et al.*, 2017; Kim *et al.*, 2009). Similarly, Singh and Sinha (2020) highlighted that the customer’s willingness to take part in new technologies is highly dependent on his level of trust. Thus, our research argues that the intention of consumers to use chatbots, initiated by organizations online, is highly contingent on their initial trust toward chatbots. Therefore, we hypothesize the following:

*H5.* Initial trust in chatbots positively influences chatbot usage intention.

### *2.4 Customer engagement*

Keeping consumers engaged is a feasible tactic for enhancing organizational performance and eventually generating a long-term firm-customer relationship (Gligor and Bozkurt, 2020). Customer engagement is described as “the level of customers’ motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in brand interactions” (Hollebeek, 2011, p. 790). Moreover, Pansari and Kumar (2017, p. 295) described customer engagement as “mechanics of a customer’s value addition to the firm, either through direct or/and indirect contribution.” There is a vast range of customer online engagement behaviors, which significantly contribute to the brand including, social interactions, visiting companies’ sites frequently, WOM recommendations, writing reviews, knowledge sharing/storing, blogging, assisting other customers and engaging in legal actions (Liu *et al.*, 2018).

In addition, prior research has suggested trust as an antecedent to customer engagement, for instance, [Thakur \(2018\)](#) study revealed that trust in the retailer is an antecedent to customer engagement with the retailer's mobile application. Moreover, [Van Doorn et al. \(2010\)](#) emphasized that trust is a customer-based factor that affects consumers' engagement behavior. Trust in the online context plays an essential role in influencing customers' online purchase decisions and helps in facilitating sellers-buyers interactions in any sort of e-commerce activity ([Wongkitrungrueng and Assarut, 2020](#)). Trust develops positive emotional states toward the online brand and, in turn, increases customer engagement ([Chiu et al., 2009](#)) and consumers are expected to become online brand advocates when they trust the brand and its products. Thus, customer engagement could result from the establishment of trust in brand-customer associations ([Wongkitrungrueng and Assarut, 2020](#)). Previous studies argued that the level of trust in virtual communities impacts an individual's engagement levels ([Mathwick et al., 2008](#)). Furthermore, [Liu et al. \(2018\)](#) showed that trust in the social media brand communities' context leads customers to perceive safety and risk reduction, thus engaging more in the brand community activities. In addition, when trust exists between two parties, then it is more likely to expect engagement ([Fang and Chiu, 2010](#)).

Therefore, this study is interested in examining whether initial trust in chatbots can help customers to become more engaged with the company brand. Accordingly, we propose the following:

*H6. Initial trust in chatbots positively influences customer engagement.*

### *2.5 Control variable: customer involvement*

Customer involvement is defined as "the perceived relevance of the object based on inherent needs, values and interests" ([Zaichkowsky, 1985](#), p. 342). Previous research depicted customer involvement as a key to unraveling customer decision-making and behavioral intentions while using technologies ([Sharma and Klein, 2020](#)). In support, [Kim et al. \(2007\)](#) claimed that customer involvement positively influences customers' behavioral intentions in the online shopping context. In addition, involvement has been extensively considered by previous scholars as a significant antecedent to customer engagement ([Gligor and Bozkurt, 2020](#); [France et al., 2016](#)). Subsequently, customer involvement has been deemed to have a direct impact on both engagement and intention to use. Thus, we controlled for the effect of customer involvement in our model.

## **3. Methods**

### *3.1 Questionnaire design*

The questionnaire began with an introduction representing the purpose of the research and ensuring the anonymity and confidentiality of the responses. Afterward, a filter question was added to ensure that respondents are familiar with chatbots to make sure that the selected sample is aware of the chatbot concept. This was followed by a request to profess their level of agreement concerning the measured items.

The concepts in this research were measured using pre-developed scales adapted from previous marketing studies. The participants marked their responses on a seven-point Likert scale (1 = "strongly disagree" and 7 = "strongly agree"). Following [Oliveira et al. \(2014\)](#), four items were used to assess initial chatbot trust and three items were used to measure social influence. Perceived ease of use was inspected using three items initiated by [Davis \(1989\)](#). Following [Venkatesh et al. \(2003\)](#), three items were used to inspect



chatbot usage intention and three items to inspect performance expectancy. Concerning compatibility, [Moore and Benbasat \(1991\)](#) suggested three items were adopted. In addition, customer engagement was measured by three items depicted from [Wongkitrungrueng and Assarut \(2020\)](#) scale. Finally, four items developed by [Cass \(2001\)](#) were used to measure customer involvement.

Before distributing the questionnaire, it was reviewed by three academic professors to inspect the contents' validity. Further, to overcome potential survey problems, a pilot study was conducted on a carefully selected sample ( $n = 7$ ) of PhD students from various departments (marketing, management and economics) who are familiar with chatbots to inspect if all items were properly understood. The final version of the survey was then posted online using Google forms. To further test the online user-friendliness of the questionnaire, the online survey was also sent to a pretest group consisting of 5 participants. Based on the pre-test, no need for adjustments was raised.

### *3.2 Sample and data collection*

The Lebanese e-commerce sector is growing rapidly and is recording significant growth in the number of e-tailing websites ([The Daily Star, 2019](#)). This rapid growth is further demonstrated by the significant increase in the number of issued internet cards for online usage ([Wehbe, 2018](#)). In addition, the companies in Lebanon are highly investing to expand AI and machine learning capabilities ([Naharnet, 2019](#)). According to the 2019 United Nations Conference on Trade and Development (UNCTAD), the business-to-consumer E-commerce Index ranked Lebanon in 7th place among 19 Arab countries involved in the survey. In addition, Lebanon's global rank increased 5 spots from 2018 to 2019 to reach 63rd place globally ([Byblos Bank, 2020](#)). In the light of the growing rate of e-shopping in Lebanon and due to the lack of research examining chatbot initial trust in general and in Lebanon in particular, therefore, investigating the antecedents and consequences of initial chatbot trust is much more encouraging using data collected in Lebanon.

In an attempt to accurately inspect the research conceptual framework and fulfill the study's objectives, the targeted population was individuals who are familiar with chatbots. Ultimately, we used the convenient sampling technique in our study and an online survey method was used using Google forms. The survey link was distributed on social media sites (Facebook, Twitter, LinkedIn and Instagram) via direct messages sent to respondents after checking their familiarity with chatbots. The data collection period lasted for four weeks, between November and December of 2019 and took place in Lebanon. After several follow-ups and out of the 500 distributed links, 184 complete responses were received (response rate 36.8%) and eventually available for further analysis. The final sample size was equivalent to that of prior research on e-service agents ([Chung et al., 2019](#)). Participants' demographic attributes are presented in [Table 1](#).

## **4. Results and analysis**

### *4.1 Measurement model: validity and reliability*

AMOS version 24 was used to perform confirmatory factor analysis (CFA). The measurement model revealed a satisfactory fit to the data, where the chi-square was statistically significant ( $\chi^2_{(208)} = 280.57$  at  $p = 0.000$ ) and the fit indices (CFI = 0.99, TLI = 0.98, IFI = 0.98, NFI = 0.95 and RMSEA = 0.044) are adequate and above the recommended levels ([Hair et al., 2009](#)). The factor loadings of all scale items on the assigned measures displayed values above 0.7 ([Hair et al., 2009](#)). Moreover, Cronbach's alpha was adopted to

			Chatbot initial trust
Category	Frequency	(%)	
<i>Age</i>			<b>1757</b>
Under 20 years	4	2.17	
20–34 years	148	80.4	
35–44 years	21	11.46	
45–54 years	8	4.34	
55 and above	3	1.63	
Total	184	100.0	
<i>Gender</i>			<b>Table 1.</b> Characteristics of respondents ( <i>n</i> = 184)
Female	106	57.6	
Male	78	42.4	
Total	184	100.0	
<i>Education level</i>			
High school	18	9.78	
Undergraduate	95	51.64	
Postgraduate	71	38.58	
Total	184	100.0	

test the scale’s internal consistency reliability. The Cronbach’s alpha reliability coefficients were acceptable for all constructs, ranging from 0.88 to 0.97 (Hair *et al.*, 2009). Further, discriminant and convergent validity were tested to assess the scale’s construct validity. The average variance extracted (AVE) varied from 0.63 to 0.91 and composite reliability (CR) from 0.73 to 0.98 for every proposed measure, thus, exceeding the benchmark of 0.5 and 0.7, respectively, as proposed by Fornell and Larcker (1981). Therefore, the results demonstrated the establishment of convergent validity. Table 2 displays the attributes of each construct and the items’ wording.

To reassure the discriminant validity of the constructs, the square root results of the AVE estimates were contrasted along with the corresponding correlation of each factor. The square roots of AVE as displayed in Table 3 exceed the correlation values corresponding to every construct, thus, ensuring discriminant validity (Fornell and Larcker, 1981). As our data were collected from a single source, our findings might be subjected to common method bias (Podsakoff and Organ, 1986). Two methods were used to check for the common method bias. First, using SPSS 22, we applied Harman’s single-factor method test (Podsakoff and Organ, 1986). The results showed that the total explained variance of a single factor is 37.23%, which is lower than the threshold (50%), indicating that common method bias is not a problem in our study (Podsakoff *et al.*, 2003). Second, we conducted the common latent factor (CLF) approach using AMOS graphics 24, the model fit with CLF ( $\chi^2/\text{df} = 1.21$ ) was close to the model fit after CLF inclusion ( $\chi^2/\text{df} = 1.29$ ). Therefore, these results show that our model is free of common method bias (Chinchanachokchai and de Gregorio, 2020; Podsakoff *et al.*, 2003).

#### 4.2 Structural equation modeling: hypotheses testing

The hypothesized relationships were tested with AMOS graphics 24 using structural equation modeling (SEM). The output revealed a satisfactory model fit. As indicated by the goodness-of-fit, the chi-square was statistically significant ( $\chi^2_{(187)} = 241.78$  at  $p = 0.000$ ), the fit indices are adequate as suggested by Hair *et al.* (2009) (RMSEA = 0.040, NFI = 0.95, CFI = 0.99, IFI = 0.98, RFI = 0.94 and GFI = 0.90).

**Table 2.**  
Constructs, scale  
items and descriptive  
statistics

Constructs and scale items	Item Mean (S. D)	Factor loading	Cronbach's alpha	AVE	CR
<i>Compatibility</i>			0.94	0.84	0.94
Chatbot services are compatible with my values	4.24(1.47)	0.86			
Chatbot services are compatible with my current needs	4.21(1.54)	0.96			
Chatbot services are compatible with the way I like to purchase	4.17(1.56)	0.94			
<i>Perceived ease of use</i>			0.92	0.87	0.73
My interaction with chatbots would be clear and understandable <sup>(d)</sup>	4.48(1.51)	–			
I would find chatbots easy to use	4.86(1.56)	0.97			
Learning to operate chatbots would be easy for me	4.98(1.52)	0.90			
<i>Performance expectancy</i>			0.95	0.87	0.73
I find chatbot services useful in the purchasing process <sup>(d)</sup>	4.55(1.53)	–			
Using chatbot services enables me to accomplish the purchasing process quickly	4.46(1.63)	0.97			
Using chatbot services increases my efficiency in the purchasing process	4.35(1.58)	0.90			
<i>Social influence</i>			0.90	0.73	0.89
My friends and family value the use of chatbots	3.94(1.60)	0.83			
The people that influence me use chatbots	3.87(1.70)	0.83			
The use of chatbots gives me professional status	3.95(1.71)	0.91			
<i>Chatbot initial trust</i>			0.88	0.63	0.83
Chatbots seem dependable	4.31(1.57)	0.78			
Chatbots seem secure <sup>(d)</sup>	4.20(1.67)	–			
Chatbots were created to help the client	5.18(1.58)	0.79			
Chatbots seem trustworthy	4.29(1.57)	0.81			
<i>Chatbot usage intention</i>			0.96	0.89	0.96
I intend to use chatbot services the next time I do an online purchase	4.17(1.65)	0.94			
I will probably use chatbot services the next time I do an online purchase	4.26(1.65)	0.96			
I am decided to use chatbot services the next time I do an online purchase	4.01(1.65)	0.93			
<i>Customer engagement</i>			0.96	0.91	0.97
I encourage friends and relatives to do business with a seller that uses chatbots	4.16(1.68)	0.94			
I consider a seller that uses chatbots to be my first choice when buying products	4.00(1.71)	0.97			
I am likely to revisit the sellers that have chatbots	4.09(1.63)	0.96			
<i>Customer involvement</i>			0.975	0.67	0.98
I consider chatbots to be a central part of my life	3.38(1.81)	0.94			
I am very interested in chatbots <sup>(d)</sup>	3.79(1.79)	–			
Chatbots are important to me	3.64(1.78)	0.97			
I am very much involved in/with chatbots	3.61(1.82)	0.96			
<b>Note:</b> The sign <sup>(d)</sup> means item eliminated based on scale purification					

Tables 4 and 5 outlines the results of the hypotheses testing. Regarding the relationship between compatibility and initial chatbot trust, the outcomes showed a positive significant association ( $\beta = 0.30, p < 0.000$ ), supporting *H1*. The estimates also revealed a positive effect between perceived ease of use and initial chatbot trust ( $\beta = 0.13, p < 0.05$ ), supporting *H2*. Performance expectancy had no significant impact on initial chatbot trust ( $\beta = 0.12, p > 0.05$ ), thus, *H3* is not supported. Furthermore, a significant positive effect was revealed between social influence and initial chatbot trust ( $\beta = 0.22, p < 0.000$ ), supporting *H4*.

Construct	ICT	CUI	ENG	COM	PEU	PerfE	SI	INV	Chatbot initial trust
ICT	<i>0.79</i>								
CUI	0.656**	<i>0.94</i>							
ENG	0.614**	0.715**	<i>0.95</i>						
COM	0.669**	0.735**	0.668**	<i>0.91</i>					
PEU	0.605**	0.568**	0.656**	0.669**	<i>0.93</i>				
PerfE	0.643**	0.722**	0.575**	0.721**	0.676**	<i>0.93</i>			
SI	0.605**	0.712**	0.750**	0.664**	0.544**	0.658**	<i>0.85</i>		
INV	0.514**	0.696**	0.833**	0.630**	0.434**	0.591**	0.777**	<i>0.81</i>	

**Notes:** \*\*Correlation is significant at the 0.01 level (two-tailed). On the diagonal appear the square roots of AVE in boldface. ICT: initial chatbot trust, CUI: chatbot usage intention, ENG: engagement, COM: compatibility, PEU: perceived ease of use, PerfE: performance expectancy, SI: social influence, INV: customer involvement

**Table 3.**  
Correlation matrix and square roots of AVE

Hypotheses	Paths	<i>p</i>	$\beta$	Result
<i>H1</i>	ICT $\leftarrow$ Com	***	0.30	Supported
<i>H2</i>	ICT $\leftarrow$ PEU	*	0.13	Supported
<i>H3</i>	ICT $\leftarrow$ PerfE	ns	0.12	Not supported
<i>H4</i>	ICT $\leftarrow$ SI	***	0.22	Supported
<i>H5</i>	CIU $\leftarrow$ ICT	***	0.42	Supported
<i>H6</i>	ENG $\leftarrow$ ICT	***	0.96	Supported

**Notes:** \*\*\* $p < 0.001$ ; \* $p < 0.05$ ; ns = not significant ICT: initial chatbot trust, CIU: chatbot usage intention, ENG: engagement, COM: compatibility, PEU: perceived ease of use, PerfE: performance expectancy, SI: social influence

**Table 4.**  
Summary of hypotheses

Moreover, the results also showed that initial chatbot trust has a positive impact on both chatbot usage intention and customer engagement ( $\beta = 0.96, p < 0.000$ ;  $\beta = 0.42, p < 0.000$ , respectively) thus, supporting *H5* and *H6*. In addition, the control variable involvement had positive impact on both engagement and intention to use ( $\beta = 0.19, p < 0.001$ ;  $\beta = 0.58, p < 0.000$ ; respectively).

### 4.3 Additional findings

Next, we examined the mediation effect of initial chatbot trust. Following [Byrne's \(2009\)](#) recommendations, first, we tested the direct effects of the predictors (compatibility, perceived ease of use, performance expectancy and social influence) on initial chatbot trust. The outcomes, as shown previously, revealed that except for performance expectancy ( $\beta = 0.11, p > 0.05$ ), all predictors had a significant impact on initial chatbot trust. Furthermore, initial chatbot trust also had a significant effect on both chatbot usage intention and customer engagement. Second, the significance of the indirect effects was inspected by using a bootstrapping method suggested by [Byrne \(2009\)](#) for determining mediation effects. With a confidence interval of 95%, we completed a bias-corrected bootstrapping using AMOS 24 for 2,000 resamples to evaluate the indirect effects on chatbot usage intention and customer engagement. The outcomes of the mediation analysis are displayed in [Table 5](#).

[Cheung and Lau \(2008\)](#) suggest that when the direct and indirect effects are both significant, partial mediation is assumed. On the other hand, full mediation is anticipated

Path relationships	( $\beta$ )	Result
<i>Direct effects</i>		
COM $\rightarrow$ CIU	0.23 <sup>ns</sup>	
COM $\rightarrow$ ENG	0.05 <sup>ns</sup>	
PEU $\rightarrow$ CIU	0.17 <sup>ns</sup>	
PEU $\rightarrow$ ENG	0.13*	
PerfE $\rightarrow$ CIU	0.17 <sup>ns</sup>	
PerfE $\rightarrow$ ENG	0.10 <sup>ns</sup>	
SI $\rightarrow$ CIU	0.12 <sup>ns</sup>	
SI $\rightarrow$ ENG	0.09 <sup>ns</sup>	
INV $\rightarrow$ CIU	0.19**	
INV $\rightarrow$ ENG	0.58***	
<i>Indirect effects</i>		
COM $\rightarrow$ ICT $\rightarrow$ CIU	0.12*	Full mediation
COM $\rightarrow$ ICT $\rightarrow$ ENG	0.2*	Full mediation
PEU $\rightarrow$ ICT $\rightarrow$ CIU	0.05**	Full mediation
PEU $\rightarrow$ ICT $\rightarrow$ ENG	0.12**	Partial mediation
PerfE $\rightarrow$ ICT $\rightarrow$ CIU	0.05 <sup>ns</sup>	No mediation
PerfE $\rightarrow$ ICT $\rightarrow$ ENG	0.1 <sup>ns</sup>	No mediation
SI $\rightarrow$ ICT $\rightarrow$ CIU	0.09**	Full mediation
SI $\rightarrow$ ICT $\rightarrow$ ENG	0.2**	Full mediation

**Table 5.**  
Mediation results

**Notes:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ ; ns = not significant. ICT: initial chatbot trust, CIU: chatbot usage intention, ENG: engagement, COM: compatibility, PEU: perceived ease of use, PerfE: performance expectancy, SI: social influence, INV: customer involvement

when the direct effect is not significant whereas a significant indirect effect exists. The outcomes of the bootstrapping in Table 5 indicated that initial chatbot trust fully mediated the effects of compatibility (direct effect = 0.23,  $p > 0.05$ ; indirect effect = 0.12,  $p < 0.05$ ), perceived ease of use (direct effect = 0.17,  $p > 0.05$ ; indirect effect = 0.05,  $p < 0.01$ ) and social influence (direct effect = 0.12,  $p > 0.05$ ; indirect effect = 0.09,  $p < 0.01$ ) on chatbot usage intention. In addition, initial chatbot trust partially mediated the effect of perceived ease of use (direct effect = 0.13,  $p < 0.01$ ; indirect effect = 0.12,  $p < 0.01$ ) on engagement and fully mediated the effects of compatibility (direct effect = 0.05,  $p > 0.05$ ; indirect effect = 0.2,  $p < 0.05$ ) and social influence (direct effect = 0.09,  $p > 0.5$ ; indirect effect = 0.2,  $p < 0.01$ ) on customer engagement. However, no mediation effect of initial chatbot trust exists on the relationship between performance expectancy and both chatbot usage intention (direct effect = 0.17,  $p > 0.05$ ; indirect effect = 0.05,  $p > 0.05$ ) and customer engagement (direct effect = 0.10,  $p > 0.05$ ; indirect effect = 0.1,  $p > 0.05$ ).

### 5. Discussion

This study examined the role of some important factors that influence initial chatbot trust, where chatbots are considered one of the latest selling tools in e-commerce. This study also analyzed the impact of initial chatbot trust on both chatbot usage intention and customer engagement. The study's outcomes revealed that except for performance expectancy, all three factors (compatibility, perceived ease of use and social influence) significantly drive customers to form an initial trust toward chatbots. In addition, initial trust in chatbots enhances the intention to use them and encourages customer engagement.

The findings assert that when consumers perceive chatbots as being consistent with their current needs and values and compatible with their lifestyle and the way they desire to

purchase products/services, then they will be confident to trust them. This is consistent with previous literature (Kaabachi *et al.*, 2019) that disclosed compatibility as a key factor in influencing initial trust in the e-commerce context and advanced technologies. Moreover, in line with previous findings (Sarkar *et al.*, 2020), consumers perceiving no difficulty in learning how to use new technologies are more likely to trust these technologies, chatbots in our case. This also means that customers show more convenience while communicating with chatbots as they are designed to guide users through their purchasing activity.

In contrary to our expectations, performance expectancy does not drive consumers' initial trust in chatbots. Therefore, our results contradict previous studies (Oliveira *et al.*, 2014) that showed that consumers trust and opt for new service technologies when they perceive their usefulness. However, our study's outcome was similar to Loureiro *et al.*'s (2018) study on fashion websites that revealed an insignificant relationship between performance expectancy and trust. This might be owed to the lack of marketing communications and adequate awareness of the advantages of chatbots in Lebanon, especially as they are perceived as a new AI technology worldwide (Zhang and Dholakia, 2018). Thus, this might have contributed to weakening the relationship between performance expectancy and initial chatbots trust. In addition, if consumers are not satisfied or do not have enough experience in using a particular technology (e.g. chatbots), then they will not realize or care about its benefits or outcomes (Loureiro *et al.*, 2018). Therefore, other factors, such as customer satisfaction and experience, might enhance the relationship between performance expectancy and trust (Loureiro *et al.*, 2018). Moreover, Chaouali *et al.* (2016) highlighted that developing expectancies about online technologies' usefulness requires consumers to trust first the online system. Further, our finding is in line with Chung *et al.* (2019), who mentioned that consumers perceived chatbots as a new technology that failed to address efficiency in the luxury context.

Moreover, our findings highlight the role of social influence in building initial trust toward chatbots and support prior research (Kaabachi *et al.*, 2019) by showing that customers tend to rely on social influence during the absence of previous experience in new online systems. This means that consumers are concerned about important others' (e.g. peers and family) opinions regarding chatbots in which will affect their trust and decisions toward chatbots accordingly.

Additionally, the findings also showed that developing initial trust toward chatbots triggers consumers' behavioral intention to use these systems and reduces behavioral uncertainties toward them. This is consistent with previous studies (Choudrie *et al.*, 2018) by which they displayed that if consumers do not trust the new online transaction methods, they will not have the intention to adopt them. Furthermore, in line with previous research (Wongkitrungrueng and Assarut, 2020), initial trust in virtual communities' transactions influences an individual's engagement levels. This means that initial trust in chatbots drives customers to revisit the seller that uses chatbots and encourage other users, such as their friends and family, to consider those sellers while purchasing products/services. Finally, our study also confirms with Gligor and Bozkurt (2020) and Kim *et al.* (2007) that customer involvement directly affects chatbots usage intention and customer engagement.

## 6. Theoretical implications

This research marks several theoretical contributions. First, to the best of our knowledge, this is the first attempt that brings together the following variables based on three technology theories (UTAUT, DOI and TAM), which are performance expectancy, perceived ease of use, compatibility and social influence and examine them as antecedents to initial trust, when prior scholars included some of these variables in their research or they



have positioned initial trust differently in their models. Although prior research has addressed initial trust in new technologies. For instance, [Talwar et al. \(2020\)](#) combined ISS model, TCE theory and the IT continuance model to examine initial trust and mobile payment intention and their results showed that only both perceived information quality and perceived service quality influence initial trust. While [Oliveira et al. \(2014\)](#) just studied performance expectancy as an antecedent to initial trust. However, the strength of our model lies in integrating the most important variables from three major theories in technology use (UTAUT, DOI and TAM) and position them as antecedents to initial trust.

Second, the current study responded to calls for examining the issue of trust in chatbots ([Van den Broeck et al., 2019](#)) and contributed to the research on e-commerce by being the first empirical study that examines the antecedents and consequences of initial chatbot trust. Third, the results showed that factors such as perceived ease of use, social influence and compatibility are key drivers to trust in chatbots. However, the results displayed that performance expectancy in chatbot context has no impact on initial trust, this outcome contradicts [Oliveira et al. \(2004\)](#) results that showed a significant relationship between the performance expectancy and initial trust. Thus, this surprising result represents another contribution of this research explaining that performance expectancy emerging from UTAUT theory does not work for all technologies in inducing initial trust and intention to use and might vary from one technology to another. Thus, these outcomes contribute to a better understanding of UTAUT ([Venkatesh et al., 2003](#)) theory in the AI context. Fourth, this study contributes to AI literature, particularly AI chatbots as they have been overlooked in marketing research. The study provides insights into some variables influencing initial chatbot trust, which might lead to chatbot usage intention and customer engagement. Thus, enriching the literature on chatbots, as they are considered as a new influential method that might significantly alter the way online businesses communicate and sell their services to consumers. Finally, the impact of initial trust on customer engagement in the virtual selling context has received minimal attention from scholars ([Wongkitrungrueng and Assarut, 2020](#)). Hence, our study contributes to the literature by showing a significant positive association between initial trust and customer engagement in the chatbot context, thus elucidating the importance of trust in virtual technologies as they may impact an individual's engagement levels in an organization's online activities.

## 7. Managerial implications

The current study offers key insights for marketing managers seeking to nourish their businesses, especially in the online context. For companies to benefit from chatbots' innovative features, marketing managers should build customers' trust toward chatbots and this could be achieved through triggering three important consumer factors, namely, compatibility, social influence and perceived ease of use. Sending signals to customers about using new technology (such as chatbots) is important for building initial trust, where potential users will be able to gain information through these signals, reduce ambiguity and start considering the new technology. Thus, managers should start triggering the precursors that influence initial trust via affective informational signals. To trigger compatibility, managers should develop an effective marketing strategy that highlights how chatbots are compatible with customers' needs, values and lifestyles. For example, a personalized pop-up message could appear on the chatbot box that is directly related to the consumer's previous online purchase behavior. This strategy develops trust with the consumer as it highlights the compatibility with their needs.

Moreover, marketing managers should demonstrate the ease of using chatbots by showing customers that chatbots are not complicated and their interactions with them will

be clear and understandable. This could be done by integrating a pop-up window on the brand's online platforms that display the simplicity of the brand's chatbots, inevitably this could trigger trust in chatbots and drive more customers to use them. In addition, the results showed that the power of important others (e.g. idols, peers and family) impact customer's trust positively, thus, managers should build an effective WOM communication strategy to draw customers' attention to trust chatbots, for example, positive feedbacks from reference groups and celebrities could be shared on social media platforms as they play an essential role in building trust with new users.

On the other hand, consumers still lack the advantages of chatbots in the e-commerce domain and this was shown in our results as no significant relationship appeared to occur between performance expectancy and initial trust. Accordingly, companies should work on increasing customers' awareness toward chatbots by stressing the rich experience that customers might have while involving chatbots in their purchasing journey in which could be displayed on the brand's webpage and shared on the social platform. Finally, initial chatbot trust can influence customers to increase their engagement and interactions with the brand, for instance, by visiting companies' online platforms frequently, writing reviews and blogging and this, in turn, might enhance companies' returns. Thus, marketing managers should start implementing chatbots as a new strategy to drive customers' engagement levels on social networking sites.

## 8. Limitations and future research

As AI chatbot is a new tool in marketing and still in its early stages for both academics and practitioners, it requires further research to fully understand how to use it effectively. Numerous limitations should be concerned with the interpretations of the research outcomes. First, the generalization of the results is limited, as the proposed framework was inspected using a sample from a single country, Lebanon. Thus, future research could be extended and enhanced by testing the hypothesized relationships by drawing data from other countries. Moreover, customers' perceptions toward chatbots tend to vary over time especially, as chatbots are in their infancy stages. This indicates that using the cross-sectional approach limits the outcomes of our study. Future research could replicate this study by using a longitudinal data approach to compare the results during two phases: the initial chatbot adoption phase and the subsequent usage phase. Moreover, only four antecedents of initial trust were examined in our study, however, future research could extend our conceptual framework and examine other variables such as structural assurance, information quality and system quality. Furthermore, new technology tools now allow AI to provide marketing efforts through e-service agents such as AI-chatbot. Yet, little is known about the effect of marketing efforts on the initial chatbot trust model. In the future, studies could extend our research model by integrating additional antecedents to initial chatbot trust such as the marketing efforts components. Moreover, building upon our research model, researchers in the future could introduce other variables (such as customer experience, satisfaction and attitude) to our model to intensely investigate the role of initial chatbot trust in enhancing AI outcomes. In addition, it is important to examine the role of social presence in our conceptual framework, as chatbots involve human-like features, thus, incorporating this variable as a moderator could be investigated by future research. Furthermore, the level of familiarity with chatbots could also be included as a control variable in future studies as it might influence initial trust. Finally, it would be interesting to investigate the dark side of chatbots in the marketing realm.

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