

Can AI chatbots humanize omnichannel service experiences? Examining the role of chatbot interactions in shaping brand experience and engagement

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Abstract

Artificial intelligence (AI) chatbots are increasingly deployed across multiple digital touchpoints as part of omni-channel service strategies. While previous studies have largely focused on chatbot adoption and technology acceptance, limited research has examined how chatbot interaction quality contributes to integrated omni-channel service experiences and downstream brand outcomes. This study investigates the influence of AI chatbot interaction quality on perceived omni-channel service experience, brand trust, and customer brand engagement in a service context. The pilot survey was conducted among 92 consumers who had interacted with the chatbot services of HDFC Bank across multiple digital platforms including website, mobile banking applications, and messaging services. Data were analysed with PLS-SEM. The measurement model demonstrated satisfactory reliability and validity (Cronbach's $\alpha > 0.80$; AVE > 0.50). Structural model results indicate that chatbot interaction quality significantly influences omni-channel service experience ($\beta = 0.55$, $p < .001$). Omni-channel service experience positively affects brand trust ($\beta = 0.58$, $p < .001$), which in turn strongly predicts customer brand engagement ($\beta = 0.63$, $p < .001$). The findings indicated that AI chatbots can enhance the perceived coherence of service interactions across channels and foster stronger brand relationships. The study contributes to emerging research on AI-enabled service ecosystems and offers practical insights for service brands deploying chatbots as strategic omni-channel tools.

Keywords: AI Chatbots, Omni-Channel Service strategy, Omni-channel marketing, Customer Experience, Brand Trust, Customer Brand Engagement, Service Marketing, Digital Marketing

1. Introduction

Artificial Intelligence has become a key influential technology impacting service ecosystems, and enabling personalised customer interactions. Among these technologies, chatbots or conversational agents have emerged as powerful tools for digital service delivery, enabling last-mile transactions and 24/7 accessibility. Organisations deploy them to provide real-time assistance, deliver customer support and enhance engagement across digital touchpoints [1] [2].

Marketers are no longer handling customer service through single channels alone, increasingly focus on multi-channel and omni-channel integration after proliferation of communication platforms and ease of access to them. This has given rise to the advent of **omni-channel service delivery** to provide a seamless and unified service experience [3] [4]. Under such changing environment, customers engage with brands across websites, mobile applications, messaging platforms and social media. True success in such an environment is when companies adopt a continuous and consistent communication across the platforms to signal coherence.

Artificial Intelligence chatbots play a critical role in such a context because they can be deployed simultaneously across channels while maintaining consistency in communication strategy and service delivery. Marketers increasingly turn to chatbots across mobile applications, websites and messaging platforms to assist customers with queries, transactions and service issues. Because of their real-time and 24/7 availability, chatbots can potentially enhance customer experience across channels.

However, despite these benefits, there are challenges faced by marketers as they try to adopt customer service chatbots across channels. In some service encounters, customers feel they are better off interacting with a real person than an AI agent as they feel potentially that a human agent could better understand and solve their issues quickly and reliably. Sometimes, people can feel overwhelmed or not forthcoming toward interacting with chatbots, as chatbots could induce an uneasy feeling of replicating a real human agent. This is called the uncanny valley effect and is also extensively studied in AI chatbot interaction literature.

Despite these challenges, there is an overwhelming positive response to chatbot adoption, and marketers are using them extensively across platforms. Existing studies on AI chatbots have primarily focused on the theoretical frameworks of how AI chatbot adoption works and technology acceptance theories [5]. There are relatively limited scholarly articles on omni-channel chatbot interaction and whether omni-channel chatbot interaction experiences translate into brand-level outcomes such as trust and customer brand engagement.

This study advances the extant literature by empirically testing a theoretical model connecting chatbot interaction quality, omni-channel service experience, brand trust and customer brand engagement.

2. Literature Review

2.1 Chatbots in Digital Service Environments

AI has rapidly influenced and impacted service delivery by promoting automation, integrating channels, personalizing communication and fostering real-time interactions. The rapid proliferation has enabled marketers, providing them tools like chatbots, real-time analytics and big data to analyse and understand customers and their requirements. This has enabled organizations to effectively scale and provide efficient service support and delivery.

Recent advances in AI have improved the conversational capabilities of AI chatbots, making them understand context, provide personalised responses and learn from customer interactions. This has led to huge and persistent adoption of chatbots across domains/sectors for service delivery [6]. Banking, telecommunications, and e-commerce increasingly deploy chatbots to handle routine customer enquiries, provide product recommendations and facilitate service recovery. This has significantly boosted marketing efforts and effectively transformed service delivery.

From a service marketing standpoint, AI chatbots signal a shift from human oriented service encounters to technology-mediated interactions [7]. argue that AI technologies can effectively augment or replace human service tasks depending on their complexity. Chatbots are effective when they are dealing with automated tasks, where standard responses are needed to handle routine tasks.

However, from extant literature, it is emphasized that the quality of chatbot interactions influences customers in their commitment towards brand. Interaction quality is an umbrella concept depending on many facets of the human-chatbot interaction ranging from 24/7 availability, semantic understanding, human-like conversation, personalised responses, process simplification and responsiveness, etc [8]. The chatbot is expected to provide

timely, accurate and contextually relevant responses in a coherent manner [9] [1][2]. If the chatbot interactions are perceived as slow, inaccurate, or not qualitatively up to the mark, customers develop negative perceptions of the chatbot and the brand.

2.2 Omni-Channel Marketing and Customer Experience

The rise of the internet and digital platforms has fundamentally reshaped how customers interact with organisations and brands. Customers have multiple devices and ICTs and seamlessly interact with brands across multiple touchpoints such as websites, mobile phone applications, social media platforms and physical stores. To address these challenges, organisations have adopted **omni-channel marketing strategies** and have integrated their marketing efforts across all customer touchpoints to give a unified experience [3].

Omni-channel marketing strategies differ from multi-channel efforts because it emphasizes **integration and continuity across channels** to give a unified customer experience across multiple communication platforms. This is done because a consistent brand communication across channels improves brand outcomes, signals authenticity, and gives a seamless experience [10][3]

Customer Experience in such contexts is cumulative and holistic. Each interaction, either positively or negatively, contributes to the overall brand perception. This makes brands to optimize their efforts and strategies across channels and maintain coherence across touchpoints [10]. Failure to synchronize the messaging and delivery across channels can result in fragmented experiences, reducing customer satisfaction and trust.

This has led the marketers to deploy AI chatbots across platforms as they are able to automate messaging and provide a coherent communication, and automate such conversations, understanding context. For example, sometimes it happens such that a customer can start a chat on a website, then continue the same conversation across a mobile application without losing context or continuity, with the advent of AI and automation.

Recent research indicates that chatbots can enhance continuity of messaging across channels by providing consistent responses and maintaining a log of interaction history [9]. However, there is still a need for more conceptual clarity on how AI chatbot interaction quality influences perceived omni-channel experience.

2.3 Chatbot Interaction Quality

Chatbot Interaction quality is a critical determinant of the nature of customer experience in technology-mediated service interactions. In the context of AI chatbots, interaction quality could refer to multiple factors, such as 24/7 availability, semantic understanding, responsiveness, relevance, accuracy, and fluency of chatbot responses.

[8] lists the various items that make customers evaluate the interaction quality of chatbots positively and provides an extensive framework to comprehend the various facets of AI chatbots' service quality. [2] illustrates that consumers respond differently to AI chatbots depending on the perceived interaction quality with them. If they perceive the interaction as competent, that motivates the users to engage and interact more with the chatbots and rely on their recommendations.

Similarly, [1] highlights the importance of chatbot design features such as conversational tone, response speed, accuracy and personalization and their influence on user satisfaction. These interactions with the chatbots effectively shape consumers' perceptions of service quality and affect their willingness to continue using the chatbot.

In an omnichannel scenario, these concepts become even more pronounced because the chatbots are no longer singular functional agents but are integrative service agents across channels. Hence, the quality of the interactions reinforces perceptions of service continuity and can enhance the overall customer experience.

2.4 Brand Trust in Digital Service Environments

Brand trust signals the consumers' willingness to trust a brand based on the customers' evaluations of reliability, competence and integrity of the brand [11]. It is both an attitudinal as well as a behavioural measure. This is even more challenging in digital environments, because customers are no longer interacting with human beings but with autonomous agents, and it takes significantly more effort to build trust and rapport with an AI agent than with a human being. In digital service environments, trust is thus vital, and therefore it should be deliberately planned in the chatbots' design.

Research suggests that trust is affected by both functional and relational aspects of service encounters. Functional aspects include reliability, efficiency and competence, while relational aspects involve empathy, transparency and responsiveness. Functional aspects signal to the customers about the brand's competence and capabilities, while relational aspects reinforce the functional trust, fostering faithful relationships.

When customers interact with AI chatbots representing brands, their experience with the technology could potentially affect their trust in the brand itself. Positive interactions with the chatbot can signal brand and technological competence, thereby increasing brand trust. So, brands have to be careful while integrating chatbots across platforms while building trust.

Recent studies in the chatbot literature indicate that AI-enabled service interactions improve customer trust when there is reliable and consistent service delivery across platforms [6].

2.5 Customer Brand Engagement

Customer brand engagement refers to the overall engagement with the brand, including cognitive, emotional and behavioural investment that consumers exhibit toward a brand [12]. The customers who are immersed in the brand are likely to develop a long-term relationship with the brand and actively participate in brand communities.

Customers interacting with brands in digital environments feel engaged when there is repeated usage, information sharing and participation in brand communication through user-generated content [13]. Brand trust has been identified as a potential antecedent of customer brand engagement because trust reduces perceived risk and strengthens emotional connections with the brand [12].

AI chatbots help in improving customer engagement by providing continuity in interactions and personalised experiences. When such repeated experiences happen, they help in building trust and encourage deeper engagement with the brand.

3. Conceptual Framework and Hypotheses

The core conceptual framework of the current study is grounded in the intersection of three key streams of research: **AI-enabled service interactions**, **omni-channel customer experience** and relational **brand outcomes**. Previous work has already shown that AI-chatbot interaction influences customer evaluations of service quality and overall experience [1][7]. When customers interact with the AI chatbots that represent a brand, their evaluations of those interactions may influence broader perceptions of the brand itself, extending beyond the service encounter.

In an omni-channel service environment, customer experience is no longer shaped by a single interaction alone, but by the integration of seamless experience across multiple touchpoints throughout the customer journey [3]. Customers expect consistent service delivery across channels, and it is very critical to provide such services as inconsistencies can negatively affect their overall perceptions of the brand.

Hence, the chatbot interaction quality is expected to influence how customers view the integration and continuity of service experience across channels. When such chatbot interactions are responsive, accurate and conversationally coherent, customers may perceive the service as well-integrated and accessible.

Furthermore, a consistent omni-channel service experience is likely to influence the customer's trust in the brand. More the brand trust, more the consumers' willingness to rely on a brand and use the brand's services and products and more eagerness to follow the brand's activities [11]. When customers experience seamless service across multiple channels, they may develop greater confidence in the brand's abilities.

Trust in the brand may encourage customers to be more willing to participate in the brand activities and actively engage with the brand. Customer brand engagement represents the cognitive, emotional and behavioural investment that consumers exhibit toward a brand [12]. When customers trust a brand, they are more likely to actively interact with it, recommend it to others, and participate in brand-related activities.

Drawing on these insights, the present study proposes a conceptual model linking **chatbot interaction quality, omni-channel service experience, brand trust, and customer brand engagement**.

Hypothesis Development

Chatbot Interaction Quality and Omni-Channel Service Experience

Interaction quality is a critical antecedant of customer satisfaction with brands in service encounters. It refers to the extent to which chatbot responses are timely, accurate and reliable. Users evaluate chatbots based on their ability to understand queries, provide relevant information and maintain contextual clarity and coherence [1]. In omni-channel service encounters, the interaction quality becomes significant because customers are more likely to perceive the experience as integrated and seamless. Conversely, poor chatbot performance may create fragmented service experiences and reduce customer satisfaction.

Previous studies have shown that technological platforms capable of delivering consistent service across touchpoints enhance customers' perceptions of service delivery and continuity [3][4]. Therefore, high-quality chatbot interactions are expected to strengthen customers' perceptions of omni-channel service delivery and experience.

H1: Chatbot interaction quality positively influences perceived omni-channel service experience.

Omni-Channel Service Experience and Brand Trust

Customer experience across the entire service journey plays a critical role in shaping brand perceptions. It is even more significant in omni-channel environments, as customers interact with brands through a combination of digital and physical channels. The integration across channels allows customers to move seamlessly through touchpoints during their interactions with the brand.

[3] argue that seamless and consistent experiences across channels contribute to customer satisfaction and trust. When such interactions are coherent and reliable, customers perceive the brand as competent and dependable. Brand trust reflects the belief that a brand is capable of fulfilling its promises and acts in the best interests of the customer. Hence, in digital service environments, trust becomes important because customers rely on interfaces rather than human service agents.

Hence, when customers experience seamless and integrated service encounters that are consistent across channels, they are more oriented to gain stronger trust in the brand.

H2: Omni-channel service experience positively influences brand trust.

Brand Trust and Customer Brand Engagement

Customer brand engagement is the cumulative engagement comprising cognitive, behavioural and emotional that a customer experiences when he is actively participating with the brand [12]. Trust plays a significant role in facilitating engagement as it reduces uncertainty and encourages customers to develop relational ties with the brand. When a customer trusts the brand, they are more likely to interact with it, participate in brand activities, and recommend the brand to others.

Therefore, higher the brand trust stronger the customer brand engagement.

H3: Brand trust positively influences customer brand engagement.

Mediating Role of Omni-Channel Service Experience

The study predicts that beyond its direct effects, omni-channel service experience may also mediate the relationship between chatbot interaction quality and brand trust. As customers interact with chatbots across platforms, the evaluation of service delivery is positively influenced by the chatbots and leads to more trust and engagement.

When chatbot interactions are perceived as of very high quality, they may enhance customers' perceptions of service continuity across channels. This enhanced service experience may subsequently strengthen trust in the brand.

Therefore, omni-channel service experiences may function as a mediating mechanism between chatbot interaction quality and brand trust.

H4: Omni-channel service experience mediates the relationship between chatbot interaction quality and brand trust.

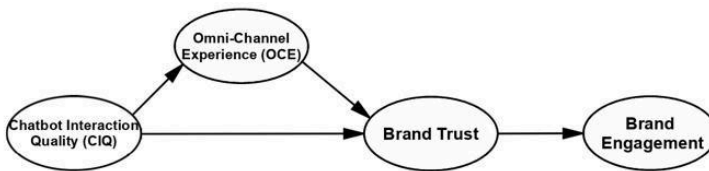


Figure 1 Conceptual Framework

4. Methodology

Research Design

The aim of the study is to examine the influence of consumers' perceptions of chatbot interaction quality on their overall service experience across channels and the subsequent development of brand-related outcomes. To address this objective, the study uses a quantitative exploratory research design to test the relationships among chatbot interaction quality, omni-channel service experience, brand trust and customer brand engagement. A

survey was used to measure the responses to understand the consumers' perceptions and experiences with AI chatbot interactions.

PLS-SEM is appropriate for exploratory research models and studies with relatively small sample sizes [14]. In addition, PLS-SEM is also used when the research seeks to predict relationships between constructs, especially when theory development is still evolving. Further, the method allows simultaneous estimation of both measurement relationships and structural paths within a single analytical framework.

Data Collection Procedure:

Data were gathered using an online questionnaire circulated to individuals who had prior experience interacting with a brand chatbot across digital platforms in the last six months. For getting meaningful exposure, the participants were redirected to the HDFC bank website and asked to interact with the chatbot across service channels such as the bank's website, mobile banking applications, and/or messaging interface. After completing the interaction, respondents proceeded to answer a series of questions capturing perceptions of chatbot interaction quality, omni-channel service experience, brand trust and brand engagement.

Responses were collected over a two-week period. After eliminating incomplete or invalid submissions, 92 usable responses were retained for analysis.

Sample Characteristics:

The respondent profile included users who had interacted with digital banking service. A majority of them were male (58.7%), while female respondents accounted for 41.3%. In terms of age distribution, the largest group were between **26-35 (44.6%)**, followed by **18-25(34.8%)**, and **36-45(20.6%)**

Most respondents reported interacting with the chatbot through **mobile banking application (77.2%)** while a significant number also used **website based chatbot interface (64.1%)**.

Table 1 Respondent Profile

Characteristic	Frequency	Percentage
Male	54	58.7%
Female	38	41.3%
Age 18-25	32	34.8%
Age 26-35	41	44.6%
Age 36-45	19	20.6%
Used chatbot via mobile app	71	77.2%
Used chatbot via website	59	64.1%

Measurement of Constructs:

The list of constructs used and their validated measurement scales adopted from relevant literature is given for reference.

- **Chatbot Interaction Quality** was measured using indicators capturing responsiveness, accuracy, and conversational coherence adapted from [8] These items reflect the effectiveness and quality of chatbot interactions

- **Omni-Channel Service Experience** was assessed through items capturing the extent to which customers perceive service interactions across channels as consistent and integrated, adapted from the omni-channel marketing literature [3][4]
- **Brand Trust** was evaluated using measures adapted from [11]
- **Customer Brand Engagement** was measured through the scale developed by [15]

5. Results

Measurement Model Evaluation

The measurement model was assessed to ensure that the constructs included in the model demonstrated satisfactory levels of reliability and validity. Factor loadings values of all the measurement items exceeded the recommended threshold of 0.70, indicating satisfactory indicator reliability [14]

Internal consistency reliability was assessed using Cronbach’s alpha values and composite reliability values. All values ranged from 0.83 to 0.90, exceeding the commonly accepted benchmark of 0.70. Composite reliability values ranged from 0.89 to 0.93, demonstrating that the items within each construct consistently measured the same underlying concept.

Convergent validity was assessed using **average variance extracted (AVE)**. All the constructs exhibited AVE values above the threshold of 0.50, demonstrating that each construct explained a sufficient proportion of variance in its associated indicators.

Discriminant validity was assessed using two complementary methods. First, the **Fornell–Larcker** criterion was examined by comparing the square root of AVE for each construct with the correlations between constructs. The results indicate that the square root of AVE of each construct is higher than the corresponding inter-construct correlations, confirming that each construct was empirically distinct from the others.

In addition, the **heterotrait-monotrait ratio (HTMT)** values was calculated to provide additional evidence of discriminant validity. All HTMT values were below the recommended threshold of 0.85, further indicating that the constructs are conceptually and statistically distinct.

Table 2 Measurement Model - Factor Loadings

Construct	Item	Loading
Chatbot Interaction Quality (CIQ)	CIQ1 – The chatbot responds quickly to my queries	0.81
	CIQ2 – The chatbot provides accurate answers	0.84
	CIQ3 – The chatbot interaction feels smooth and natural	0.80
	CIQ4 – The chatbot understands my requests effectively	0.82
Omni-Channel Service Experience (OCE)	OCE1 – My experience across channels feels seamless	0.86
	OCE2 – Service information is consistent across platforms	0.85

	OCE3 – I can continue my interaction easily across channels	0.83
	OCE4 – The service process feels integrated across platforms	0.82
Brand Trust (BT)	BT1 – I trust this brand	0.88
	BT2 – This brand is reliable	0.86
	BT3 – This brand keeps its promises	0.84
Customer Brand Engagement (BE)	BE1 – I feel emotionally connected to this brand	0.89
	BE2 – I am interested in interacting with this brand	0.87
	BE3 – I frequently engage with this brand	0.85

Structural Model Evaluation

The results indicate that **chatbot interaction quality has a significant positive effect on omni-channel service experience** ($\beta = 0.55, p < .001$), supporting H1. This finding suggests that customers who perceive chatbot interactions as responsive, accurate, and reliable are more likely to experience seamless service interactions across channels.

The analysis further reveals that **omni-channel service experience significantly influences brand** ($\beta = 0.58, p < .001$), supporting H2. This result indicates that consistent service experiences across digital platforms strengthen customers’ confidence in the brand.

The relationship between **brand trust and customer brand engagement(CBE)** was also found to be statistically significant ($\beta = 0.63, p < .001$), supporting H3. Customers who trust the brand are likely to interact with it frequently and develop stronger emotional connections.

Table 3 - Reliability and Validity

Construct	Cronbach α	CR	AVE
Chatbot Interaction Quality	0.83	0.89	0.67
Omni-Channel Experience	0.86	0.91	0.70
Brand Trust	0.88	0.92	0.74
Brand Engagement	0.90	0.93	0.76

Table 4 - Fornell-Larcker Validity

Construct	CIQ	OCE	BT	BE
CIQ	0.82			
OCE	0.55	0.84		
BT	0.48	0.58	0.86	
BE	0.44	0.52	0.63	0.87

Table 5 HTMT Discriminant Validity

Construct	CIQ	OCE	BT	BE
(CIQ)	—			
(OCE)	0.66	—		
(BT)	0.59	0.71	—	
(BE)	0.55	0.64	0.74	—

Mediation Analysis:

To further examine the underlying mechanisms linking chatbot interactions to brand trust, a mediation analysis was conducted using a bootstrapping procedure.

The results indicate that chatbot interaction quality has a significant indirect effect on brand trust through omni-channel service experience. Specifically, the indirect path from chatbot interaction quality to brand trust via omni-channel experience was significant ($\beta = 0.32, t = 4.76$).

The direct effect between chatbot interaction quality and brand trust also remained significant ($\beta = 0.31$), suggesting **partial mediation**. This implies that chatbot interaction quality influences brand trust both directly and indirectly by enhancing customers’ perceptions of integrated service experiences across channels.

Explanatory Power of the Model

The model explains a meaningful proportion of variance in the key constructs. Chatbot interaction quality accounts for **30% of the variance in omni-channel service experience**. Omni-channel experience explains **34% of the variance in brand trust**, while brand trust contributes to explaining **40% of the variance in customer brand engagement**.

These findings suggest that AI chatbot interactions play an important role in shaping customer perceptions of service integration and subsequent brand-related outcomes.

Table 6 Structural Model Results

Hypothesis	Path	β	t-value	Result
H1	CIQ → OCE	0.55	6.72	Supported
H2	OCE → BT	0.58	7.01	Supported
H3	BT → BE	0.63	8.25	Supported

Table 7 Mediation Analysis (Bootstrapping)

Effect	Path	β	t	p	Result
Direct Effect	CIQ → BT	0.31	3.42	<.01	Significant
Indirect Effect	CIQ → OCE → BT	0.32	4.76	<.001	Significant
Total Effect	CIQ → BT	0.63	7.12	<.001	Significant

6. Discussion

This study examined how chatbot interaction quality contributes to omni-channel service experiences and downstream brand outcomes. The results show that AI chatbots could function as integrative service agents across omni-channel environments.

First, the findings indicate that chatbot interaction quality significantly influences perceived omni-channel service experience. When users find chatbot responses as accurate, timely and relevant, they perceive greater continuity across channels. This is consistent with previous findings that conversational agents can enhance service delivery [1][5]

Second, the results indicate that omni-channel service experience significantly enhances brand trust. Customers who perceive service interactions across channels as consistent develop stronger confidence in the brand. This finding supports the customer journey perspective, which states the importance of integrated experiences across touchpoints [3].

Third, brand trust was found to be a significant predictor of customer brand engagement. As trust is developed, perceived risk is reduced, and trust fosters emotional attachment with the brand. This encourages customers to maintain long-term relationships with chatbots.[11][15]

The mediation analysis further reveals that omni-channel service experience partially mediates the relationship between chatbot interaction quality and trust. This implies that chatbot interactions influence brand perceptions not only directly but also indirectly across channels through service integration.

Taken together, these findings highlight the importance and the strategic role played by chatbots in driving customer experiences in digital service ecosystems. Rather than acting as standalone automation tools, chatbots could be used as strategic brand-building tools to deliver high-quality interactions across channels.

7. Contributions and Implications

7.1 Theoretical Contributions

This study makes several theoretical contributions to the emerging literature on AI-enabled service interactions, omni-channel marketing, and customer engagement.

First, the study contributes significantly to the extant body of work on **chatbots in service marketing** by shifting the focus to **experience-based outcomes**. While much of the extant literature has examined consumers' willingness to adopt AI service agents, [1][2], relatively limited research has investigated how chatbot interactions shape broader brand and service experiences across multiple channels. By empirically linking chatbot interaction quality with omni-channel service experience, this study extends prior literature by demonstrating how AI-enabled interactions shape and build integrated customer journeys.

Second, the study advances the **omni-channel marketing literature** by introducing chatbot interaction quality as an important antecedent of perceived omni-channel service experience. Prior research on this area has primarily focused on channel integration, technological infrastructure and customer journey management as the key drivers of omni-channel experiences [3]. Our work highlights the role of AI-powered chatbots as service agents that facilitate service continuity across channels, thereby expanding the conceptual understanding of omni-channel service operations.

Third, the study contributes to the **branding and customer engagement literature** by elucidating the mediating mechanism of omni-channel service experience in shaping brand trust. The results indicate that chatbot interactions across channels influence brand perceptions indirectly because of perceived continuity and coherent service experience

across platforms. This finding indicates that technology-mediated service interactions improve brand relational outcomes when they are integrated with other service platforms.

Fourth, the study contributes to the **customer brand engagement literature** by empirically linking AI-enabled service experiences to engagement outcomes. Previous research has identified trust as a key antecedent of customer engagement [13][15]. The current study extends the literature by demonstrating that trust can be strengthened through consistent AI-enabled service interactions across channels.

Finally, the study adds to the emerging discourse on **AI service ecosystems**, by conceptualising AI technologies as active participants in service co-creation processes [5]. By showing that chatbot interaction quality influences both experimental and relational brand outcomes, this study underscores the significance of AI technologies in shaping customer-brand relationships.

7.2 Managerial Implications

The study's findings offer many amenable managerial implications influencing decision makers who seek to implement AI chatbots as part of their omni-channel marketing strategies.

First and primarily, the study highlights the necessity of having a **good chatbot interaction quality in shaping customer perceptions and positive brand evaluations**. **Priority** should be emphasized on improving conversational accuracy, response speed and semantic understanding, while designing chatbots. Companies that focus on and improve the quality of chatbot interactions end up increasing customer satisfaction.

Second, the study suggests that chatbots should be deployed as **integrated service agents communicating across channels instead of being used as isolated/fragmented** tools. Organisations must ensure that the interactions across channels are stored in centralised databases to provide seamless connectivity across platforms. This integration would enable customers to continue the recent conversations across channels without having to enter the information again, thereby improving continuity

Third, firms should maintain **consistent brand communications across chatbot interactions**. Often, chatbots serve as the first entry point in connecting the customer and the service provider. Ensuring that chatbot responses remain consistent across channels could enhance the brand's value, strengthen brand trust and reinforce brand identity.

Fourth, managers should recognize that chatbots may play a critical role in **driving customer engagement**. As chatbots provide personalised recommendations, offer support and interact with customers, they can encourage customers to bring frequent customer interactions with the brand. These interactions could potentially lead to deeper engagement, fostering stronger customer relationships.

Finally, the effect size of the results indicates that AI chatbots should no longer be viewed only as cost-reduction tools but as **strategic assets that influence brand perception and build customer relationships**. Organizations should strategically invest in improving chatbot interaction quality to achieve long-term benefits like customer trust, loyalty and engagement..

7.3 Limitations and Future Research

Despite the study's many contributions, it has several limitations that provide opportunities for future research.

First, the study used a **pilot survey with a relatively small sample size (n=92)**. Although PLS-SEM is generally used for exploratory models, future research could replicate the study using a larger sample to enhance the generalizability of the findings.

Second, the research focused on a **single context involving the HDFC Bank chatbot**. While banking services are a suitable setting for examining AI-enabled interactions,

customer perceptions may vary across industries. Future studies could extend the model to other sectors like e-commerce, healthcare and telecommunications to examine the observed relationships.

Third, the study used self-reported survey measures, which could potentially lead to common-method bias. Future studies could undertake an experimental approach or measure behavioural data to study chatbot interactions in a real service brand environment.

Fourth, the present study examined a **linear model linking chatbot interaction quality to brand engagement through omni-channel service experience and trust**. Future research could explore additional mediating and moderating variables. For instance, perceived anthropomorphism, AI transparency, or technology readiness may be used to evaluate the quality of chatbot interactions.

Fifth, future studies could examine the **role of emotional and social factors in AI-service interactions**. While chatbots are designed for speed and efficiency, advances in conversational AI may enable them to replicate empathy and emotional intelligence. Understanding how such features influence customer perceptions and influence engagement could provide valuable insights to practitioners and researchers.

Finally, longitudinal research could be adopted to examine how **customer relationships with AI-service systems evolve over time**, particularly as conversational agents become more advanced and integrated into mainstream service interactions.

8. Conclusion

This study demonstrates that AI chatbots can be used as agents to humanize digital service environments by enhancing the continuity of omni-channel service experiences. By offering reliable and consistent interactions across multiple platforms, chatbots can strengthen brand trust and encourage deeper customer engagement. As organizations continue to integrate AI systems into service settings, understanding the experiential and relational implications of chatbot interactions will become increasingly important.

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