

Re-evaluating Emotional Awareness and Anthropomorphism in AI Customer Service: Role of Social Presence, and Psychological Distance on Purchase Intention

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ABSTRACT

The adoption of Artificial Intelligence-driven customer service systems is transforming consumer interactions. Nevertheless, there remains a limited understanding of how specific characteristics of AI in particular emotional awareness and anthropomorphism influence consumer decision-making. This study aims to investigate how these AI traits influence consumers' perceptions of social presence and psychological distance, and how these perceptions shape trust and intention to use AI services. The findings reveal that emotional awareness significantly enhances social presence and reduces psychological distance. However, while anthropomorphic cues effectively build trust, they exhibit diminishing returns when excessive human-like traits trigger discomfort due to subtle but noticeable imperfections known as "uncanny valley" effect. Moreover, contrary to expectations, social presence does not directly impact the willingness to use AI services, which suggests that functional efficiency may outweigh emotional engagement in service contexts. This research contributes to the literature on human-AI interaction by integrating psychological distance theory with anthropomorphism frameworks.

Keywords: Emotional awareness, Anthropomorphic, Social presence, Psychological distance

JEL Classifications: D83; O33; M15; M31

1. INTRODUCTION

The integration of Artificial Intelligence (AI) into service industries is transforming traditional business models and shaping the future of consumer interactions across various sectors especially in industries with high interaction volumes (Desmal et al., 2023). AI, which encompasses a range of technologies from human intelligence systems to conversational agents, offers the potential for significant improvements in personalization, efficiency, and operational scalability (Ameen et al., 2021). In essence, AI technology has revolutionized service delivery and enabled businesses to respond more efficiently to consumer needs, enhance customer experiences, and streamline operational processes. AI-powered chatbots and virtual assistants are now commonplace, helping customers with everything from simple inquiries to

complex service requests, thus enhancing convenience and satisfaction.

As demand for superior service experiences in customer service sectors is ever-growing for instant, personalized, and hassle-free interactions, AI-driven customer service systems, which are a subset of AI information systems, can meet this demand by automatically communicating with users and provide them with operational guidance, complaint acceptance, and consultation services (Ngai et al., 2021; Nguyen, 2024) which is beyond the capability of any single human being. These innovations go beyond operational efficiency as they also support the creation of personalized, emotionally intelligent experiences that cater to the evolving demands of modern consumers (Roslan and Ahmad, 2023). AI technologies, such as natural language processing

(NLP) and conversational AI, have emerged as key enablers of this shift, facilitating efficient communication between businesses and their customers (Sharma et al., 2021). These systems leverage advancements in AI algorithms to process large volumes of customer interactions, enabling businesses to respond rapidly and accurately to diverse consumer needs. Existing research has explored various aspects of AI adoption in service industries, including operational efficiency, customer satisfaction, and communication optimization (Sharma et al., 2021; Desmal et al., 2023). AI systems are characterized by their scalability and uninterrupted availability, allowing businesses to offer 24/7 support. This operational efficiency allows human agents to focus on solving complex customer issues, thereby improving both customer satisfaction and organizational productivity (Andrade and Tumelero, 2022; Xu et al., 2020).

While AI excels at analysing data, providing information, and performing repetitive tasks, it often falls short when it comes to replicating the human elements of empathy, intuition, and relationship-building, especially in areas requiring empathy and emotional sensitivity (Kraus et al., 2023; Ahn et al., 2021). Roesler et al. (2021) assert that anthropomorphic characteristics in the shape or behaviour of the robot are necessary for meaningful social contact between a human and a robot. Anthropomorphism refers to the attribution of human-like qualities such as conversational tone, empathy, and adaptability to non-human systems. Anthropomorphism enables users to perceive AI systems as relatable and approachable entities, thus it plays a pivotal role in bridging perceptual gaps and enhancing social presence (Khan et al., 2024). For example, virtual assistants like Google Assistant and Amazon Alexa use conversational cues and emotional tone to create a relatable and humanized user experience.

Another critical aspect of AI-driven customer service is emotional intelligence, defined as the system's ability to detect, interpret, and respond to users' emotional states. An AI-based service chatbot with emotional intelligence can better understand customers (Pantano and Scarpi, 2022), leverage empathic attention to recognize the customer's emotional state and provide emotional support (Liu-Thompkins et al., 2022) than one equipped with cognitive intelligence due to its ability to analyse emotional data. Such systems employ sentiment analysis and affective computing techniques to evaluate emotional cues from text or voice inputs and therefore enabling more empathetic and effective responses. On the contrary, lack of emotional and cognitive factors in AI systems often leads to critical issues such as customer dissatisfaction and decreased trust in AI-mediated services. Worse, psychological distance further complicates this dynamic, as users perceive AI systems as abstract or impersonal when emotional resonance is insufficient (Ameen et al., 2021). Users often value human touch in emotionally sensitive or complex service scenarios, where AI systems may fail to exhibit nuanced empathy or contextual understanding (Ahmed, 2024). Not all customers enjoy interacting with AI chatbots due to factors such as a lack of empathy, misinterpretation of customer intentions, and privacy concerns (Chi et al., 2020; Gursoy et al., 2019).

Similarly, emotional awareness in AI systems, which encompasses the ability to detect and respond to human emotions, enhances

relational value by fostering empathetic interactions (Kim et al., 2022). It provides research potential on how these emotional and social factors influence consumers' perceptions and trust in AI-driven customer service. Ultimately, these factors play a crucial role in shaping consumer purchase intention. When AI systems successfully enhance social presence and reduce psychological distance, they can foster trust and engagement, leading to higher purchase likelihood. Consumers are more likely to complete transactions when they feel emotionally connected to the AI-driven service experience. Therefore, understanding how anthropomorphism and emotional awareness contribute to this process is essential for businesses aiming to optimize AI-driven customer interactions and drive purchase intention. This study aims to address these gaps by investigating how anthropomorphism and emotional awareness contribute to reducing psychological distance and enhancing social presence in AI-driven customer service.

2. LITERATURE REVIEW

Social presence refers to the experience of being with someone and is determined by one's perceived ease of access to another's intelligence, intents, and sensory impressions (Agnihotri et al., 2024). Emotional awareness as an integral aspect of interaction design refers to the ability to recognize, interpret, and respond to users' emotional states (Velagaleti, 2024; Huang et al., 2023). The value of emotions in customer service is well established in relationship development, which focuses on emotional ties to provide consumers a sense of belonging and understanding (Zablah et al., 2017). Past studies such as Huang and Rust (2024) posited that GenAI may recognize client emotions from a variety of indications, demonstrate empathy, provide targeted emotion management recommendations, and eventually promote emotional relationships between customers and companies. These emotion AIs have the ability to deliver emotionally intelligent customer care on a large scale, hence boosting both consumer emotional well-being and lifetime value. Human-like linguistic signals lead to more positive interaction outcomes, such as stronger homophily, emotional proximity, and connectivity, resulting in higher favorable user ratings of a chatbot agent (Go and Sundar, 2019). From this perspective, it is clear that AI-enabled customer service systems have a significant influence on the emotional awareness of user (H_{1a}).

Psychological distance refers to the perceived distance between an individual and an item, event, or person, which is represented in the goal's attractiveness and feasibility, as measured by high and low levels of construal evaluation. The feasibility construal of psychological distance defines the ease or difficulty of engaging and obtaining the desired service outcome, whereas the desirability construal determines the worth of the action's end state (Alaoui et al., 2022). In the context of AIs, it might be described as perceived social, temporal, geographical, or hypothetical distance between the user and the AI (Maglio, 2020). Studies such as Shin (2018) have found that empathetic communication reduces relational barriers and builds a sense of social presence. Similarly, individuals are naturally drawn to others who share similar traits, as perceived similarity fosters a sense of identification and reduces psychological distance (Xu et al., 2022). Recent years,

personified chatbots have begun to mimic human empathy by intensifying relational closeness with the objective of fostering positive interaction outcomes (Tsai et al., 2021). The emotional awareness possessed by these AI systems allow them to recognize users' emotional states and react to their responses accordingly. The enhanced social ability of AI service with more natural and human-like conversation has increased perceived enjoyment in interacting with the service (Čaić et al., 2020) leading to the study's second hypothesis that the reduced psychological distance in AI-enabled customer service systems would have a positive outcome on user's emotional awareness (H_{1b}).

Cues inside the information technology system activate anthropomorphic elements of a human-computer interface (HCI), giving users the familiar impression of a natural and intimate connection (Moriuchi, 2021). HCI research has shown that human-AI interactions unwittingly induce social reactions, making these interactions essentially social in nature. Individuals frequently adapt their interpersonal communication norms to their interactions with AI systems, instinctively treating computers and AI entities in the same way they would humans. This involves assigning anthropomorphic traits and expecting human-like engagement, regardless of whether the user is aware they are interacting with a computer. Users frequently engage in social behaviors like as politeness norm adherence or voice distinction, perceiving computers as separate social creatures (Pavone and Desveaud, 2025). The anthropomorphic features of technology, such as voice and apparent gender, significantly influence user perceptions of warmth and competence (Kim and Im, 2023; Lv et al., 2022). For instance, the humanness heuristic induced by anthropomorphic generative artificial intelligence (GAI) vicarious interaction can lead individuals to treat GAI as human, providing them with a heightened sense of social engagement, immersion, and experiential involvement, which aligns with the ultimate goals of social presence. Conversely, the machine heuristic triggered by non-anthropomorphic GAI vicarious interaction causes observers to perceive the GAI doctor as an indifferent and rigid machine, thereby reducing their receptivity to viewing the GAI as a social being (Li et al., 2024). This study builds on the assertion that anthropomorphism of AI-enabled customer service systems has the capability of fostering greater emotional connection and therefore strongly related to promoting a social presence (H_{2a}).

Study suggested that people develop different levels of psychological construal depending on the extent to which AI agents show human-like features (Ahn et al., 2021). These levels are determined by user knowledge and their competence in dealing with AI service bots typify an inverse relationship between the level of concrete construal and their knowledge and competence (Yudkin et al., 2019). This phenomenon can be further explained as the psychological distance of a certain object (Stephan et al., 2010), and reduction in perceived psychological distance is especially critical in situations involving uncertainty or perceived risks, as humanlike features provide cognitive anchors that enable users to process information more intuitively and confidently (Park et al., 2024). For instance, visual cues, such as humanlike avatars, facial expressions, and mascots, are among the most effective strategies to anthropomorphize nonhuman agents that can enhance users'

perceived similarity and familiarity with the system. Similarly, the use of emojis to represent chatbots significantly created a more engaging and relatable interaction experience (Chung and Han, 2022). In this regard, anthropomorphism is hypothesized to correlate with psychological distance of AI enabled customer service systems (H_{2b}).

Past studies such as Cheng (2020) has demonstrated that consumers' behavioural intentions are significantly determined by their inner emotional satisfactions. Having a strong sense of social presence can significantly influence attitudes and behaviours toward AI chatbots in online shopping, as social presence is psychologically linked to feelings of connection and emotional closeness. A higher social presence in AI systems such as AI chatbots makes users feels more emotionally connected perceiving chatbot as more intimate and interactive. Social presence amplifies the impact of the perceived usefulness of robot interactions on developing positive attitudes toward the AI system (Toader et al., 2019). Moreover, social presence also enhances perceived humanness by conveying anthropomorphic cues such as warmth, responsiveness, and emotional intelligence (Blut et al., 2021). These attributes not only reduce users' perceptions of ambiguity and risk but also foster emotional attachment toward AI systems. This emotional or social connection positively impacts evaluations of the chatbot, ultimately influencing shopping behaviours and buying intention (H_3).

Psychological distance allows people to believe that others belong to the same group as them (Zhao et al., 2020). Consumers make straightforward buying selections based on emotional and sensibility information (Hu and Shi, 2020). As psychological distance grows, customers must make difficult judgments based on the most comprehensive information accessible to them about any given topic. To maximize their decisions, consumers must obtain more relevant information through many channels, compare it regularly, and engage more in cognitive resources (Cui et al., 2020). When the social psychological distance between consumers and AI-enabled customer service systems is minimal, consumers feel a closer identity with these artificial intelligence community, raising the sense of belongingness (Liu-Thompkins et al., 2022) and generating trust which helps form a positive impression (Zhao et al., 2020) that leads to buying intention and hence the final hypothesis (H_4) of this study.

2.1. Social Response Theory

Social response theory (SRT) posits that individuals instinctively apply social heuristics from human interactions to human-computer interactions, especially when computers exhibit human-like attributes. Studies demonstrated that users respond to anthropomorphic computer interfaces as they would to human counterparts and they engage more deeply with AI systems that display human-like characteristics (Ameen et al., 2021; Ahmed, 2024; Tong et al., 2023). Customers' interactions with AI are fundamentally social, leading them to behave socially without conscious thought (Wallinheimo et al., 2023). Users responded to computers exhibiting human-like characteristics as if interacting with real people (Abbas et al., 2022). Anthropomorphic cues, such as human-like language and visual elements, increased user

trust and engagement in AI systems (Li et al., 2024). Drawing on SRT theory, this study investigates how emotional awareness and anthropomorphism influence social presence and psychological distance and ultimately influence purchase intention on AI-enabled customer service systems (Figure 1).

3. RESEARCH DESIGN

3.1. Method

This study employs a purposive non-probability quantitative research approach to examine the relationship between anthropomorphism, psychological distance, social presence, and purchase intention in AI customer service. Purposive sampling although commonly used in qualitative research to select participants based on specific characteristics can also be applied to quantitative research. Unlike probability sampling, the purpose of purposive sampling is not to randomly choose units from a population with the intention of generating generalizations, but rather to focus on a population with specific features of interest that may answer the research questions (Tongco, 2007). This can be achieved through homogeneous sampling using filter questions to prequalify respondents allowing an in-depth study of specific subgroups. To ensure the relevance and quality of the data, a set of filter questions was incorporated at the beginning of the survey to verify that participants had prior experience with AI-driven customer service interactions. Respondents who indicated that they had never used AI customer service were screened out and excluded from the final sample.

Even though this study’s approach employs a non-probability sampling approach due to the unknown population using AI customer service, it does not warrant an exemption from proper sample size calculations especially when statistical tests are used (Onwuegbuzie et al., 2007). In response, G*Power analysis was used as a guide for sample size to ensure enough power for conducting inferential statistics. The derived minimum sample size was 128 participants to achieve 80% statistical power with a medium effect size of 0.25 and a 5% false-positive rate. Survey invitations, including an explanation of the study’s objectives and a hyperlink to the questionnaire, were distributed via relevant WeChat groups. Data collection was conducted through

Wenjuanxing, a widely used online survey platform that enables researchers to reach participants across multiple locations in China.

Recent methodological discussions such as Benjamin et al. (2017) has advocated lowering the conventional significance threshold from $P < 0.05$ to $P < 0.005$ or $P < 0.01$ particularly in replicability and cumulative science fields. As this study is based on confirmatory test on established theories from past research, the threshold of acceptable P-value is lowered to below 0.01. The higher quality strength test increases its robustness and mitigates the potential of false positive. Hence, strength of relationship above 0.01 is considered not sufficient to establish statistical significance.

This study was carried out under the declaration of Helsinki and was approved by the Ethics Committee of School of Business University of Wollongong Malaysia (ethics approval number 2PHDBS/EA/0004), granted on August 19, 2024. Informed consent was obtained from all participants prior to data collection. Participants received a written explanation on the first page of the online questionnaire outlining the study’s objectives and assuring them of the confidentiality and security of their personal data. Consent was indicated by actively continuing to the questionnaire (opt-in). Participants were informed that they could withdraw from the study at any time without penalty. Data collection was conducted during from September 1 to December 25, 2024. This study received no specific financial support. We agreed to share the data from this study and request it from the corresponding author if necessary.

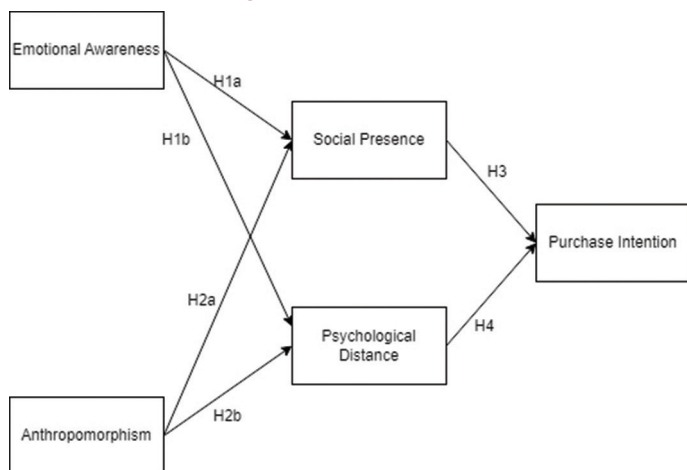
3.2. Analysis

The researchers employed IBM SPSS 29.0 to examine common method bias (CMB) and demographics, as well as Smart PLS 4 software to evaluate measurement and structural modeling methodologies. The data was analyzed in two phases: (1) Model fit, reliability, and validity, and (2) Hypothesis testing.

3.3. Descriptive Analysis

In total, 300 individuals accessed the survey link. 6 responses were found out-of-scope or invalid resulting in a final sample of 294 participants. The gender distribution of the respondents was relatively balanced, with a slight predominance of female participants (54.8%, $n = 161$) compared to male participants (45.2%, $n = 133$). In terms of age, majority of respondents were above 40-years-old (26.1%), followed by those aged between 36 and 40 (18.3%) and between 31 and 35 (17.3%). Participants aged between 18 and 25, and between 26 and 30 accounted for 22.7% and 15.6% of the sample respectively. Regarding educational attainment, over half of the respondents (50.7%) held a bachelor’s degree or above, while 31.6% had completed graduate school or professional training. A smaller segment (17.7%) had an education level of senior high school or below, indicating that the sample was generally well-educated. As for prior experience with AI-driven customer service, the majority of respondents (41.3%) reported using such services for more than 2 years. This was followed by those with 1-2 years (21.1%), 7 months to 1 year (19.3%), 1-6 months (10.5%), and <1 month (7.8%). The details of the demographic factors are exhibited in Table 1.

Figure 1: Research model



3.4. Common Method Bias

To mitigate potential common method bias (CMB), the study implemented strict anonymity protocols and emphasized the importance of neutral and honest responses. Additionally, Harman’s single-factor test was conducted, with the results indicating that the largest single factor accounted for 18.6% of the variance, well below the 50% threshold. Thus, CMB is not of concern in this study.

3.5. Measurement Model Assessment

Cronbach’s Alpha (α) and Composite Reliability (CR) for all the constructs showed values between 0.76 and 0.95, and between 0.86 and 0.96 respectively which were above the acceptable range of 0.70 (Taber, 2018). Likewise, values of average variance extracted (AVE) for all constructs were above the acceptable range of 0.50, demonstrating their reliability.

The convergent validity for PLS SEM was measured by factor loadings of each construct (Cheung et al., 2024). Results show that factor loadings of each construct are above the suggested threshold of 0.70 demonstrating satisfactory convergent validity (Henseler et al., 2015). Likewise, results of discriminant validity and HTMT ratio tests for all constructs met the criterion for good discriminant validity (Tables 2 and 3).

4. FINDINGS

To estimate the second-order formative indicator weights, bootstrapping analysis was conducted with 5000 subsamples, and the path coefficients were re-estimated using each of these samples (Figure 2).

Consistent with our expectations, emotional awareness (EA $\beta = 0.299$, $t = 3.864$, $P = 0.000$) and anthropomorphism (AP $\beta = 0.642$, $t = 8.118$, $P = 0.000$) have significant effect on social presence (SP). Similar observations were made for both EA ($\beta = 0.174$, $t = 2.672$, $P = 0.008$) and AP ($\beta = 0.762$, $t = 11.778$, $P = 0.000$) on psychological distance (PD) thereby supporting H_{1a} , H_{1b} , H_{2a} , and H_{2b} . Together, these two paths accounted for 82.6% of SP and 83.5% of PD variance. PD ($t = 4.354$, $P = 0.000$)

Table 1: Demographic characteristics of the respondents

Measure	Items	Frequency	Percentage
Gender	Male	133	45.2
	Female	161	54.8
Age	18-25	67	22.7
	26-30	46	15.6
	31-35	51	17.3
	36-40	54	18.3
	>40	76	26.1
Highest education level	Senior High school and below	52	17.7
	Graduate school/Professional training	93	31.6
AI customer service experience	Bachelor’s degree and above	149	50.7
	Less than 1 month	23	7.8
	1-6 months	31	10.5
	7 months-1 year	57	19.3
	1-2 years	62	21.1
	More than 2 years	121	41.3

had a significant effect on purchase intention (PI), as shown by path coefficient of 0.579, thus supporting H_4 . Based on the more stringent P-value significance threshold of $P < 0.01$ for this study, SP ($\beta = 0.296$, $t = 2.202$, $P = 0.028$) is found to have a relatively modest influence on PI ($P > 0.01$); thus, H_3 is not supported (Table 4).

5. DISCUSSION

This study provides new insights into how emotional awareness and anthropomorphism in AI-enabled customer service systems influence consumer perceptions and behavioural intentions. Drawing on the SRT, our findings underscore the psychological mechanisms through which emotionally intelligent and human-like AI agents impact social presence, psychological distance, and ultimately, purchase intention.

5.1. Psychological Distance as an Anthropomorphic Amplifier

Consistent with prior research (Hui et al., 2024; Kim et al., 2022; Pizzi et al., 2023), emotionally aware AI agents were found to strengthen consumers’ sense of social connection and reduce psychological distance. These agents triggered human-like social responses and positively shaped user attitudes through expressing empathy and understanding. Importantly, the results suggest that consumers respond more favourably when emotional cues are present but remain balanced, thereby avoiding the discomfort associated with “uncanny valley” a term coined by Mori (1970) to describe a psychological phenomenon where affinity for human likeness object increases to a certain point after which it drops dramatically due to feeling of eeriness and rises again when a living person is reached (Wu et al., 2024; Yin et al., 2023). While

Table 2: Composite reliability

Latent constructs	CR	AVE	AP	EA	PD	SP	PI
AP	0.961	0.831	0.912				
EA	0.971	0.919	0.845	0.959			
PD	0.977	0.915	0.909	0.818	0.957		
SP	0.957	0.882	0.822	0.761	0.853	0.976	
PI	0.976	0.952	0.895	0.842	0.927	0.832	0.939

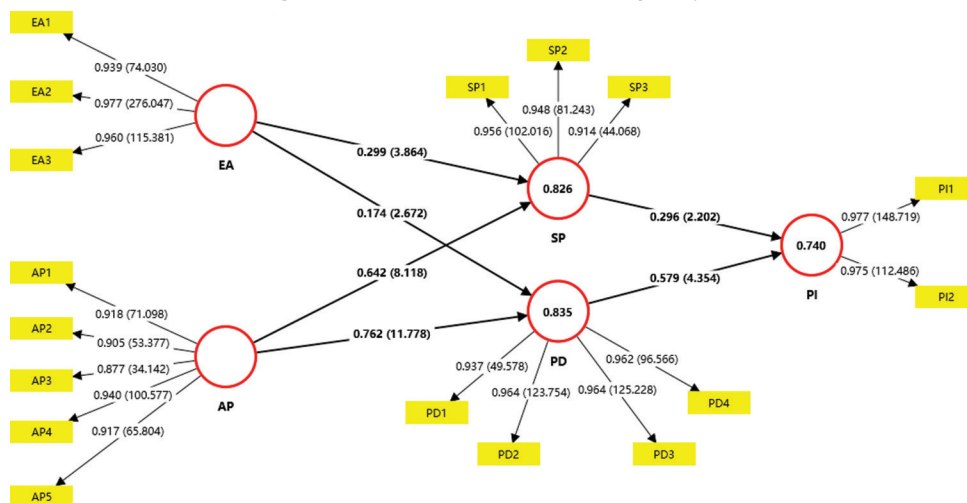
Table 3: Discriminant validity (HTMT)

	AP	EA	PD	SP	PI
AP					
EA	0.886				
PD	0.846	0.849			
SP	0.864	0.798	0.889		
PI	0.848	0.891	0.875	0.884	

Table 4: Results of hypothesis testing

Hypotheses	SD	T-statistics	P-values	Supported
H_{1a} EA->SP	0.077	3.864	0	Yes
H_{1b} EA->PD	0.065	2.672	0.008	Yes
H_{2a} AP->SP	0.079	8.118	0	Yes
H_{2b} AP->PD	0.065	11.778	0	Yes
H_3 SP->PI	0.134	2.202	0.028	No
H_4 PD->PI	0.133	4.354	0	Yes

Figure 2: Results of structural modeling analysis



prior literature has focused on surface-level human-like cues (e.g., faces, names, or tone) to explain consumer engagement (Jiang et al., 2023; Shumanov and Johnson, 2021), these cues only become persuasive when psychological distance is sufficiently reduced. Anthropomorphism, in this sense, does not operate in a vacuum as it relies on proximity (cognitive, emotional, or social) to gain traction. When AI is perceived as “close” in psychological terms, consumers are more likely to ascribe its humanlike traits, feel emotionally bonded, and show greater behavioural intention. Thus, psychological distance intensifies the perceived warmth and trustworthiness of the AI.

5.2. The “Trust Paradox” of Anthropomorphism

Contrary to some earlier findings (Chen et al., 2023; Wang et al., 2021), this study observes a moderate relationship between social presence and purchase intention. While anthropomorphic features may elevate perceived warmth and familiarity, they do not necessarily translate into trust when decisions carry high perceived risk such as financial transactions or personal data exchange. This aligns with emerging concerns in AI ethics and trust literature (Blut et al., 2021) that over-personalized or overly humanlike AI may backfire in high-stakes settings. Consumers may enjoy conversing with emotionally expressive AI but remain sceptical about its competence, reliability, or underlying agenda. This bifurcation, enjoyment without commitment, reflects a paradox where anthropomorphism builds relational trust (warmth, friendliness) while eroding functional trust (capability, objectivity), especially when stakes are high. This could be attributed to the age factor as generational studies such as Hoffmann et al. (2016) and Zarouali et al. (2021) have suggested that digital natives tend to be more trusting of algorithmic systems, possibly due to prolonged exposure and socialization into tech-mediated environments. In addition to the age factor, testimonials such Charron and Rothstein (2016) relate trust in general to educational level. In this respect, this study takes a step further examining both age and education as possible determining factors in the relation between anthropomorphism and functional trust in specific. Using purchase intention (PI) to simulate functional trust and Anthropomorphism (AP) as predictor, the strength of the bivariate correlations was examined across different age groups and educational levels.

Interestingly, the magnitude of bivariate correlations between AP and PI across age and education demographics indicates that educational level has more salient influence. Whilst AP → PI correlations across 5 age groups show inconsistent albeit high bivariate correlation strength, educational levels reveal an increasing magnitude trend from High School (coef. = 0.728**), Degree (coef. = 0.811**) through Master’s (coef. = 0.890**). Therefore, contrary to Álvarez-Huerta et al. (2022), the results of this study suggest that individuals with higher education are more likely to convert perceived anthropomorphic features into purchase intentions, potentially due to a more nuanced understanding of the interaction context and reduced reliance on anthropomorphic cues as mere novelty. In other words, anthropomorphic cues such as friendliness, humanlike voice, or facial expressions may no longer be viewed as novel or impressive by more educated users. Instead of being swayed by the “human feel” of the interface, these users evaluate anthropomorphic agents based on their functional utility—such as accuracy, logic, and decision-making competence. The same trend can be observed with regard to PD and SP: coef. of correlation across educational attainment levels for AP → PD and AP → SP increase consistently from 0.893** and 0.864** for High School to 0.925** and 0.900** for Master’s respectively, whereas age-based correlation, while consistently high, fluctuate more. These results suggest that cognitive knowledge derived from guided learning, and exploratory activities during the course of learning foster greater understanding and trust for anthropomorphism that extends past studies’ assertions on generational (age-based) (Zarouali et al., 2021) as sole determining factor in the relationship between functional trust and anthropomorphism. This study proves otherwise that educational levels are more consistent and can be used as a complementary determining factor over generational in predicting how anthropomorphic traits correspond with behavioral intentions, especially in situations involving complicated or important choices.

5.3. Emotional Contagion through Anthropomorphic Cues

Consistent with previous research (Fortunati and Edwards, 2022), this research suggests that incorporating emotional and social cues can mitigate psychological distance in human-AI interactions.

The significant impact of emotional awareness on psychological closeness supports the notion of emotional contagion in Human-AI Interaction (HAI). Much like humans “catch” emotions from one another in social settings, emotionally expressive AI agents seem capable of triggering parallel affective states in users. This phenomenon, while widely documented in human interactions (Ham et al., 2024; Rao Hill and Troshani, 2024), is increasingly observed in AI contexts suggesting that empathetic design is not merely aesthetic but affective. In our study, emotionally aware AI not only enhanced perceived empathy but also created a sense of shared emotional space, thereby reducing users’ cognitive defences and encouraging deeper interaction. This aligns with Lee et al. (2023), who argue that emotional disclosure from AI increases social bonding and trustworthiness. That is, much like human customer service agents adjust their communication styles, AI can modulate its anthropomorphic cues to match consumer expectations, cultural contexts, and situational factors. This chameleon-like capacity allows AI to shift between functional and relational roles, becoming a “virtual assistant,” “friend,” or “advisor” depending on the moment. This fluidity raises both opportunities and ethical considerations. Crucially, such affective mirroring may serve as a bridge between machine coldness and human warmth, turning transactional moments into emotionally resonant experiences. On one hand, it can create highly personalized, context-sensitive customer experiences. On the other, it raises concerns about manipulation, over-personalization, and loss of user agency—especially when users cannot clearly distinguish between adaptive behavior and persuasive intent.

5.4. Theoretical Implications

This research offers several key contributions to the evolving literature at the intersection of human, such affective mirrorinbehaviour, and anthropomorphism. First, this study extends anthropomorphism theory by introducing psychological distance as a pivotal, previously under-theorized moderator. While prior research has emphasized visual and verbal cues as primary triggers of anthropomorphic perception (Sah and Peng, 2015), the findings reveal that such cues are amplified or muted depending on the consumer’s perceived proximity to the AI. In doing so, we enrich the theoretical understanding of anthropomorphism as not merely a function of AI design, but also of consumers contextualized mental construal. This adds granularity to social response theory by situating anthropomorphism within a distance-dependent framework, where proximity mediates the leap from machine to mind. Second, emotion awareness machines can be conceptualized as affective signallers rather than imperfect simulators of human emotion. The findings suggest that emotional cues from AI systems trigger genuine shifts in consumers’ psychological closeness and warmth regardless of the underlying authenticity of the emotion. This supports the view that perceived emotion matters more than actual sentience, reinforcing the performative and symbolic functions of AI in service settings. This theoretical perspective advances the emotional design literature (Triberti et al., 2017) and aligns with recent arguments for understanding AI communication as a form of strategic affect transmission. Third, understanding of the trust paradox can be reinforced by identifying conditions under which anthropomorphism might increase affective engagement but not necessarily lead to behavioural intentions. It challenges

prevailing assumptions that human-likeness is beneficial especially in establishing psychological closeness (Chae et al., 2025) and invites a more nuanced, dual-pathway view of trust in AI: affective trust may be high while cognitive or competence-based trust remains low, especially in high-risk decision contexts. The paradox helps reconcile conflicting findings in the literature and provides a more predictive model for future research on trust calibration in human-AI relationships.

5.5. Practical Implications

As AI-driven customer service tools become increasingly prevalent, managers must carefully consider how design elements impact customer engagement. This study reveals that emotionally aware AI systems can significantly enhance social presence and reduce psychological distance, leading to greater customer affinity and increased purchase intention. Managers may therefore wish to prioritize the integration of emotional recognition algorithms and empathetic dialogue training in their AI systems, moving beyond purely functional or transactional designs. Notably, while past literature has cautioned against excessive human-likeness due to the “uncanny valley” effect, the findings here indicate that balanced emotional expression though not overly anthropomorphic but still emotionally intelligent can strengthen customer trust and perceived warmth. Therefore, moderate anthropomorphism, when thoughtfully calibrated, may offer competitive advantages by making AI interactions more personable without causing discomfort. Managers should collaborate closely with AI developers and UX designers to achieve this optimal balance. Furthermore, given that anthropomorphic cues are especially effective in reducing psychological distance. Managers could implement design features such as conversational tone, name personalization, or avatar expressions to enhance the AI’s social presence and relatability, particularly for brands seeking to create a more humanized digital experience. Interestingly, the study also found that social presence alone may not directly increase customers’ willingness to use AI services, diverging from previous research. This insight underscores the importance of aligning emotional features with the functional needs of customer service. This means that managers should avoid over-investing in emotional cues at the expense of response efficiency, clarity, and utility. In service contexts, a hybrid approach that combines emotional intelligence with rapid, reliable assistance is likely to be more effective. Finally, in recognition of the variability in customer emotional responsiveness, managers may consider personalization strategies that adapt AI behaviour to different user profiles offering more emotionally expressiveness to users who respond well to it and streamlined efficiency to those who prioritize quick problem-solving. This adaptive AI behaviour could be key to maximizing customer satisfaction across diverse market segments.

6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

As AI becomes increasingly integrated into customer service, its humanization through emotional awareness and anthropomorphic design has begun to shape the nature of consumer–technology interaction in profound ways. This study explores the factors

influencing the adoption of AI-driven customer service by integrating insights from SRT. This study demonstrates that emotionally intelligent and moderately anthropomorphized AI assistants can reduce psychological distance and foster social presence, ultimately increasing consumers' willingness to engage. These findings suggest that AI systems are not merely transactional tools but have the potential to evoke relational responses that resemble human-to-human interaction. While social presence was not found to directly impact usage intention in this context, the roles of emotional expression and psychological proximity emerge as pivotal, especially as consumers seek not only efficient but also emotionally attuned service experiences. The results challenge assumptions from earlier studies warning of the "uncanny valley," instead supporting the idea that carefully balanced emotional cues enhance trust, engagement, and perceived human-likeness without triggering discomfort. This raises critical questions for future research: as AI becomes more affective and relational, will consumers begin to form emotional attachments to these non-human agents? What are the long-term implications for consumer well-being, identity, and social relationships? Will the increasing presence of emotionally aware AI assistants enhance customer experience, or will it blur boundaries between authentic and artificial interaction in problematic ways? All these considerations highlight the double-edged nature of humanized AI that is capable of deepening engagement while also presenting ethical and psychological challenges. As AI applications grow more socially and emotionally sophisticated, researchers must continue to explore not only their functional outcomes but also their affective, cognitive, and societal consequences.

As with all empirical studies, this research has several limitations. First, the study relied on scenario-based survey data to measure consumers' perceptions and intentions, which may not fully capture the complexity of real-time human-AI interactions. Future studies could employ experimental or longitudinal designs to observe actual behaviours and interaction patterns with AI-enabled customer service systems in naturalistic settings. Second, while the study examined emotional awareness and anthropomorphism as key antecedents of social presence and psychological distance, it did not directly manipulate different levels of these constructs. As such, causal inferences should be made with caution. Future research could adopt experimental approaches to systematically vary degrees of emotional expression and anthropomorphic design to assess threshold effects, including potential tipping points that might trigger discomfort or the "uncanny valley" phenomenon. Third, the sample was limited to a specific consumer group within a single cultural context, which may constrain the generalizability of the findings. Given that emotional perception and social cognition are often culturally bound, future research should explore cross-cultural variations in consumer responses to emotionally aware and anthropomorphized AI systems.

Lastly, while this study found that social presence did not significantly influence usage intention, the mechanisms behind this result warrant further exploration. It is possible that consumers prioritize efficiency and reliability over social attributes in service contexts. Future studies could investigate how contextual factors such as service type, urgency and task complexity or individual differences such as need for social interaction and technology

readiness moderate the effects of social presence and emotional cues on adoption behaviour.

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