

ARTIFICIAL INTELLIGENCE

Anthropomorphism in AI, Consumer Trust and Purchase Intention: A Secondary Data Study

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Abstract

As artificial intelligence (AI) becomes embedded in consumer-facing channels such as chatbots, voice assistants and virtual shopping agents, brands increasingly give these systems human-like names, voices, faces and conversational styles. This paper examines how anthropomorphic design influences consumer trust and, through trust, purchase intention. Using a qualitative secondary-data approach, it synthesises peer-reviewed articles, industry reports and publicly available consumer survey material and analyses them thematically, without formulating or testing hypotheses. A generalised literature review, together with its limitations, frames the analysis. The qualitative findings indicate that human-like cues generally raise perceived warmth, social presence and credibility, which strengthens cognitive and affective trust, and that trust is the central pathway to purchase intention. The effect is conditional: excessive human likeness, privacy concerns, unmet expectations, and product, task and cultural factors can weaken trust. A conceptual framework and practical implications for brands designing AI interfaces are proposed.

Keywords: anthropomorphism; artificial intelligence; chatbots; consumer trust; purchase intention

1 Introduction

1.1 Background

AI-driven interfaces now handle a large share of first-line consumer interaction, from customer-service chatbots and product recommenders to voice assistants and virtual influencers. To make these systems approachable, designers often add human-like features: a personal name, an avatar, a friendly tone, humour, empathy statements and even simulated typing delays. This design strategy is known as anthropomorphism.

Anthropomorphism is the human tendency to attribute human characteristics, intentions, emotions and minds to non-human entities. Epley, Waytz and Cacioppo explain it through three drivers: the availability of human-like knowledge, the need to understand and predict one's environment, and the need for social connection [1]. Research on "Computers Are Social Actors" showed that people respond socially to technology even when they know it is a machine [2], which explains why modest human signs can trigger social reactions towards AI. In marketing, anthropomorphic signals may be visual (faces, avatars), verbal (natural conversation, humour, empathy), identity-based (a name, gender or personality) or behavioural (response pauses, typing indicators, emotional responsiveness).

1.2 Anthropomorphism and consumer trust

Trust is commonly defined as willingness to be vulnerable to another party based on expectations about its ability, benevolence and integrity [3]. Consumers cannot fully verify how an AI system works or uses their data, so trust acts as a substitute for certainty. Anthropomorphism is linked to trust through four broad mechanisms: social presence, which makes an interaction feel personal and attended to; warmth and competence perceptions, since a friendly, fluent agent appears both caring and capable; predictability, since attributing a mind to a system makes its behaviour feel more understandable; and emotional connection, since perceived empathy encourages affective trust. Evidence outside retail supports this logic: giving an autonomous vehicle human features increased users' trust in it [5].

The relationship is not simply linear. The “uncanny valley” proposes that near-human but imperfect agents can feel eerie and reduce acceptance [4]. Deception concerns arise when consumers feel that an AI is pretending to be human. Trust therefore depends on how anthropomorphism is calibrated, not only on whether it is present.

1.3 Trust and purchase intention

Purchase intention is the likelihood that a consumer plans to buy a product or service. Behavioural and technology-acceptance models suggest that beliefs and attitudes about a channel shape behavioural intention [9, 10]. In online and AI-mediated shopping, trust reduces perceived risk and uncertainty, which makes purchase intention more likely.

1.4 Objectives and research questions

Existing evidence is spread across marketing, psychology, human–computer interaction and information systems, and often relies on single experiments or narrow samples. A consolidated, secondary-data view helps identify consistent patterns and conflicting findings. The objectives are to:

1. study how anthropomorphic AI design is reported to influence consumer trust;
2. study how trust relates to purchase intention in AI-mediated contexts;

Accordingly, the paper addresses two research questions. RQ1: How does anthropomorphism in AI shape consumer trust? RQ2: What role does trust play between anthropomorphism and purchase intention? The study is exploratory and interpretive; it does not formulate or test hypotheses.

2 Literature review

2.1 Anthropomorphism and social response to AI

The literature on anthropomorphism draws mainly on psychological theory. Humans readily see agency and intention in non-human things, particularly when those things behave in responsive, language-based ways [1, 2]. In the AI context this has led researchers to study which cues (appearance, voice, language style, name, personality) most strongly evoke a sense of a social partner, and how consumers' perception of “mind” in a system alters their expectations of it.

2.2 Trust in AI agents

Trust is treated in the literature as a multi-dimensional construct built on perceived ability, benevolence and integrity [3]. Because AI systems are often opaque and handle personal data, trust is

considered especially important. Reviews and meta-analytic work on service robots, chatbots and other AI generally report positive effects of anthropomorphism on relational and behavioural outcomes, while also noting that effects differ across contexts and that human-like design can provoke negative reactions [7].

2.3 Trust, purchase intention and moderating conditions

Trust is widely positioned as an antecedent of purchase intention because it lowers perceived risk and strengthens confidence in a recommendation or transaction [9, 10]. The literature also points to moderating conditions, including product type, task complexity, consumer characteristics such as technology comfort and privacy concern, and cultural context. Transparency about an agent's AI identity is frequently discussed as a safeguard for trust.

2.4 Limitations of the existing literature

Although the body of work is growing, several general limitations affect how far its conclusions can be relied upon:

1. Conceptual inconsistency. Anthropomorphism and trust are defined and measured in different ways across studies, which makes direct comparison difficult.
2. Narrow samples. Many studies use students or online panels from a few countries, limiting generalisability across age groups, cultures and income levels.
3. Intention rather than behaviour. Purchase intention is usually self-reported, and stated intention does not always translate into actual purchases.
4. Technological obsolescence. Rapid advances, especially in generative AI, mean that findings about earlier, rule-based systems may not describe today's far more fluent agents.
5. Publication bias. Studies reporting positive effects are more likely to be published, which may overstate the benefits of human-like design.

2.5 Position of the present study

Given these limitations, this paper does not attempt to estimate effect sizes or to confirm or reject formal hypotheses. Instead, it consolidates what existing secondary sources report, identifies recurring qualitative patterns and highlights where the evidence is mixed.

3 Materials and methodology

3.1 Research design

The study uses a qualitative, secondary-data research design. Instead of collecting new data from respondents, it reviews, compares and interprets existing evidence. This approach suits a topic with a broad body of published work, is cost-effective and allows comparison across contexts. Its limitation is that the researchers cannot control how the original data were gathered. No hypothesis testing or inferential statistical analysis is undertaken.

3.2 Materials: Sources of secondary data

The materials comprise: (i) peer-reviewed journal articles from marketing, consumer behaviour, psychology and information-systems journals; (ii) conference and working papers reporting recent findings; (iii) industry and consultancy reports on AI adoption and consumer attitudes; (iv) publicly

available survey statistics from research centres, regulators and statistical bodies; and (v) published brand case material on AI assistants and virtual influencers.

3.3 Search strategy and selection

Searches are run in Scopus, Web of Science, Google Scholar and publisher databases using combined keyword groups such as “anthropomorphism”, “human-like” or “social presence”; “artificial intelligence”, or “service robot”; “trust” or “credibility”; and “purchase intention” or “consumer behaviour”. Reference lists of key articles are also screened. Sources are included if they are published in English within roughly the last ten years, address anthropomorphic features of AI in a consumer or marketing context, and report on trust, related attitudes or purchase intention. Purely technical papers, opinion pieces without evidence, duplicates and sources of unclear methodology are excluded. Selection follows a staged, PRISMA-style screening process [8]: identification, removal of duplicates, title and abstract screening, full-text review and final inclusion.

3.4 Data extraction and analysis

For each included source, the following are recorded in an Excel sheet: author and year, context, type of AI, anthropomorphic cues studied, trust construct, outcome variable, theoretical lens, method and main finding. The data are analysed using thematic analysis [6]. A comparative step then contrasts findings across contexts. Sources are weighed by journal quality, clarity of method, recency and relevance, and findings supported by several independent sources receive more weight than single-study results.

3.5 Ethical considerations

Only published or publicly available data are used, so direct ethical risk to participants is low. All sources are cited, and data are not misrepresented.

4 Results

The thematic analysis produced four main themes, reported here in qualitative terms only.

4.1 Human-like cues raise warmth and social presence

Across sources, AI agents that speak naturally, use a name and personality, and respond with empathy are described as more personable and engaging. Consumers report feeling attended to rather than processed, so the interaction feels closer to a service encounter with a person than to use of a tool.

4.2 Trust is the main pathway to purchase intention

Trust emerges as the central mediating mechanism. Consumers who trust an AI agent report lower perceived risk and greater willingness to follow its recommendations, to share information needed for a transaction and to complete a purchase. Anthropomorphism alone is rarely sufficient; its influence on purchase intention is described as largely indirect, operating through trust, satisfaction and perceived usefulness.

4.3 Too much human likeness can backfire

Several sources report that very realistic but imperfect agents provoke discomfort, in line with the uncanny-valley idea [4]. Other negative reactions include feeling deceived when an AI is mistaken for a human, irritation when a human-like agent fails to understand simple requests, and heightened privacy concerns when an agent seems to know too much. Here, human likeness raises expectations that the system cannot meet, and trust falls.

4.4 Transparency and perceived honesty protect trust

Disclosing that the agent is AI, stating its abilities and limits clearly, and handling data openly are repeatedly linked with sustained trust. Consumers appear more forgiving of mistakes when an agent is honest about being a machine, and less forgiving when human likeness feels like disguise.

5 Discussion

5.1 Interpretation of the findings

In answer to RQ1, anthropomorphism tends to build trust by making AI agents seem warmer, more present and more understandable, consistent with the social-response and anthropomorphism theories reviewed above [1, 2]. In answer to RQ2, trust emerges as the key mediating mechanism: human-like design matters commercially mainly to the extent that it makes consumers feel safe and confident enough to act.

A useful reading of the evidence is that anthropomorphism is a tool for trust-building, not a guarantee of it. Human-like cues help when they fit the task and are matched by real capability. When appearance runs ahead of performance, consumers experience a violation of expectations, and trust declines.

5.2 Conceptual framework

The synthesis suggests the following framework: anthropomorphic AI cues lead to perceived warmth, competence and social presence; these shape consumer trust and trust in turn shapes purchase intention. Product type, task complexity, consumer traits, culture and transparency of AI identity act as moderators on these links. The framework is offered as an organising device for future work, not as a tested model.

5.3 Theoretical and managerial implications

Theoretically, the study supports integrating anthropomorphism theory, trust theory and behavioural-intention models into a single explanation of AI-mediated purchasing, and suggests that the relationship is better described as conditional than as “more human-like is always better”. For practitioners, the findings suggest that brands should:

1. match design to context, with warmer personas for experiential purchases and clear, efficient designs for high-risk or functional ones;
2. be transparent about AI identity and data use;
3. monitor trust through feedback and conversation analytics to detect where human-like design causes discomfort.

5.4 Limitations of the study

Reliance on secondary data means that the original studies' measures, samples and definitions differ and cannot be controlled. Published literature may be affected by publication bias. Rapid advances in generative AI may make older findings less representative. Much of the evidence rests on short-term experiments and self-reported intention. Finally, a qualitative synthesis shows patterns and direction but does not measure the size of effects.

5.5 Directions for future research

Future work could test the proposed framework with primary data from surveys and experiments, study long-term relationships with AI agents rather than one-off interactions, compare generative-AI agents with rule-based ones, examine actual purchase behaviour, and explore ethical issues such as manipulation, dependency and vulnerable consumers.

6 Conclusion

This paper synthesised secondary evidence on how anthropomorphism in AI relates to consumer trust and purchase intention. The qualitative analysis shows that human-like signals usually increase warmth, social presence and trust, and that trust is the main route through which anthropomorphism influences purchase intention. These benefits are conditional on well-judged design, honest disclosure, adequate competence and a good fit with product, task and cultural context. Brands that treat anthropomorphism as a calibrated, transparent trust-building strategy, rather than a cosmetic feature, are best placed to turn AI interactions into consumer confidence and purchase intention.

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