



A Review of Virtual Human Interactivity in E-commerce: The Role of Trust and Its Impact on Purchase Intention

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ABSTRACT: With the rapid advancement of artificial intelligence and digital technologies, virtual humans have become increasingly integrated into e-commerce platforms, transforming the way consumers interact with online services. This paper provides a systematic review of virtual human interactivity in e-commerce, with particular focus on the role of trust and its impact on purchase intention. Following the PRISMA framework, the study synthesizes relevant literature to examine key characteristics of virtual human interactivity, including responsiveness, personalization, and anthropomorphism, and analyzes how these features influence consumer experience. The findings indicate that virtual human interactivity enhances both cognitive and affective trust by improving perceived competence, reliability, and emotional connection. Trust, in turn, plays a crucial mediating role in reducing perceived risk and increasing consumers' willingness to purchase. Furthermore, the paper identifies several influencing factors, including platform characteristics, consumer differences, and technological features, as well as key research gaps such as the lack of cross-cultural studies and limited focus on long-term effects. The study concludes by proposing future research directions and offering practical implications for e-commerce platforms aiming to optimize virtual human design and improve consumer engagement.

KEYWORDS: Virtual Human Interactivity; E-commerce; Trust; Purchase Intention; Consumer Behavior; Artificial Intelligence; Systematic Literature Review

I. INTRODUCTION

The rapid development of digital technology has significantly transformed the global business environment, especially in the field of e-commerce. With the widespread adoption of the internet, mobile devices, artificial intelligence, and big data analytics, online shopping has become an essential part of consumers' daily lives. E-commerce platforms are no longer limited to displaying

products and processing transactions; they increasingly focus on creating interactive, personalized, and engaging shopping experiences. In this context, virtual humans have emerged as an innovative tool for improving communication between businesses and consumers.

Virtual humans refer to digitally created agents that simulate human appearance, behavior, or interaction. In e-commerce settings, they may appear in the form of chatbots, virtual customer service representatives, digital influencers, or AI-powered shopping assistants. These virtual agents are designed to provide real-time responses, personalized recommendations, and human-like communication, thereby enhancing user engagement and supporting consumer decision-making. Compared with traditional static online interfaces, virtual humans introduce a more dynamic and interactive shopping environment, which can improve customers' perceptions of convenience, enjoyment, and service quality.

However, the effectiveness of virtual human interactivity in e-commerce depends not only on the technological sophistication of these systems but also on how consumers perceive and accept them. In online shopping environments, consumers often face uncertainty due to the lack of physical contact with products, concerns about information reliability, and risks related to payment security and privacy. As a result, trust becomes a central factor influencing consumers' attitudes and behaviors. Even when virtual humans provide efficient and attractive interaction, consumers may still hesitate to rely on them if they do not perceive them as trustworthy. Therefore, trust plays a critical role in determining whether virtual human interactivity can successfully influence purchase intention.

Purchase intention is widely recognized as an important predictor of actual buying behavior in e-commerce research. It reflects consumers' willingness or likelihood to purchase products or services from an online platform. Previous studies have shown that purchase intention is affected by



multiple factors, including perceived usefulness, perceived ease of use, social presence, enjoyment, and trust. Among these, trust is especially significant because it reduces perceived risk and increases confidence in both the platform and the transaction process. In this sense, trust may serve as a bridge connecting virtual human interactivity and consumers' final purchasing decisions.

Although existing studies have examined virtual agents, online trust, and consumer behavior separately, research integrating these three dimensions remains relatively fragmented. Some studies focus on the technological design of virtual humans, while others emphasize psychological mechanisms such as trust, satisfaction, or emotional attachment. There is still a need for a clearer understanding of how virtual human interactivity contributes to trust formation and how such trust subsequently shapes purchase intention in e-commerce contexts. In addition, differences across platform types, consumer characteristics, and levels of technological sophistication suggest that this relationship may be more complex than a simple direct effect.

Against this background, this paper aims to review and synthesize the existing literature on virtual human interactivity in e-commerce, with particular attention to the role of trust and its impact on purchase intention. Specifically, the paper seeks to clarify the concept and dimensions of virtual human interactivity, examine the mechanisms through which trust is developed in digital shopping environments, and analyze the pathways linking interactivity, trust, and purchase intention. By doing so, this study contributes to the growing body of research on digital consumer behavior and offers useful implications for e-commerce platforms and marketers seeking to improve customer experience and commercial performance through virtual human technologies.

The remainder of this paper is organized as follows. Section II explains the systematic review methodology. Section III presents the theoretical foundations and core concepts related to virtual human interactivity, trust, and purchase intention. Section IV discusses the relationships among these variables. Section V identifies influencing factors and research gaps. Finally, Section VI concludes the paper and proposes directions for future research.

II. METHODOLOGY

2.1 Research Design

This study adopts a systematic literature review approach to synthesize existing research on virtual human interactivity, trust, and purchase intention in e-commerce contexts. To enhance methodological transparency and replicability, the review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework proposed by Page et al. (2021). The PRISMA approach is appropriate for this study because it provides a structured process for identifying, screening, assessing, and including relevant studies in a transparent manner.

2.2 Data Sources and Search Strategy

Relevant studies were identified through major academic databases, including Scopus, Web of Science, and Google Scholar. These databases were selected because they provide broad coverage of peer-reviewed research in marketing, information systems, consumer behavior, artificial intelligence, and human-computer interaction. The search focused on studies published between 2015 and 2025, as this period reflects the rapid development of AI-enabled virtual agents and digital commerce technologies.

The following search terms and Boolean combinations were used: "virtual human interactivity" OR "digital human" OR "virtual agent" OR "chatbot" OR "AI assistant" AND "e-commerce" OR "online shopping" AND "trust" AND "purchase intention" OR "consumer behavior". Additional terms such as "anthropomorphism", "social presence", "personalization", and "responsiveness" were also used to identify studies related to the key dimensions of virtual human interactivity.

2.3 Inclusion and Exclusion Criteria

To ensure the relevance and quality of the selected studies, clear inclusion and exclusion criteria were applied. Studies were included if they were peer-reviewed journal articles, written in English, related to e-commerce or digital commerce, and addressed at least one of the following constructs: virtual humans, virtual agents, chatbots, interactivity, trust, or purchase intention. Studies were excluded if they were conference papers, editorials, book chapters, non-English publications, duplicates, or not directly related to consumer behavior in digital environments.



Inclusion Criteria	Exclusion Criteria
Peer-reviewed journal articles	Conference papers, editorials, and book chapters
Studies published in English	Non-English publications
Studies related to e-commerce or digital commerce	Studies outside consumer or digital commerce contexts
Studies addressing virtual humans, virtual agents, chatbots, trust, or purchase intention	Studies unrelated to the key constructs
Full-text articles available for review	Duplicate or inaccessible records

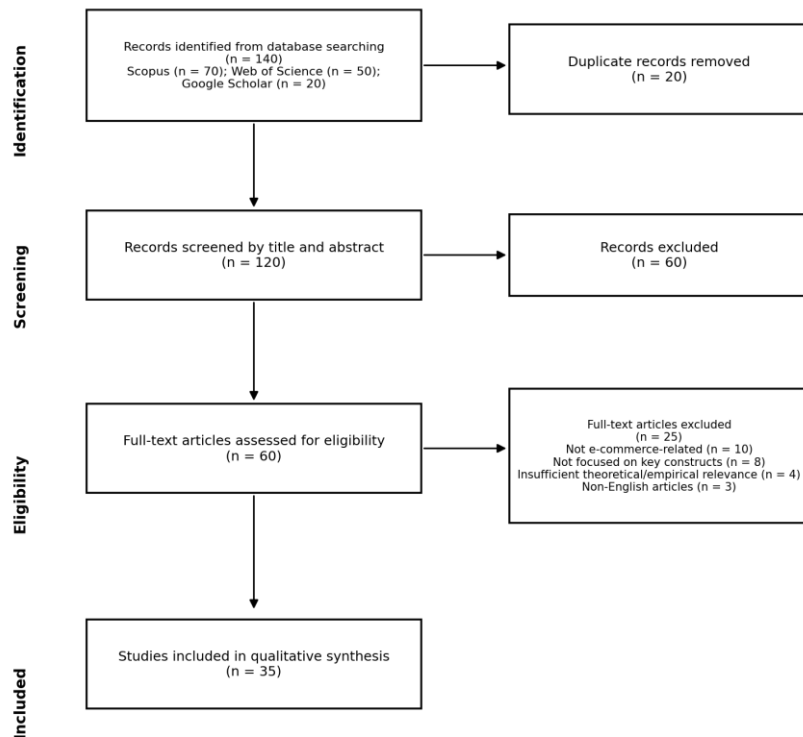
Table 1. Inclusion and exclusion criteria for study selection

2.4 Screening and Selection Process

The study selection process followed four PRISMA stages: identification, screening, eligibility assessment, and inclusion. In the identification stage, 140 records were retrieved from selected databases. After removing duplicate records, 120 articles remained for title and abstract screening. During the screening stage, 60 records were

excluded because they were not directly related to the research topic or did not meet the inclusion criteria. In the eligibility stage, 60 full-text articles were assessed, of which 25 were excluded for reasons such as insufficient relevance to e-commerce, lack of focus on virtual humans or trust, or limited theoretical contribution. Finally, 35 studies were included in the qualitative synthesis.

PRISMA Flow Diagram of Study Selection



Note. Numbers are illustrative and should be adjusted according to the final database search results.

Figure 1. PRISMA flow diagram of study selection



2.5 Data Extraction and Analysis

Data from the selected studies were extracted and analyzed according to several dimensions: research context, theoretical foundation, type of virtual agent, dimensions of interactivity, conceptualization of trust, measurement of purchase intention, research methodology, key findings, and identified limitations. A thematic synthesis approach was used to identify recurring patterns and relationships across studies. The analysis focused particularly on how virtual human interactivity contributes to trust formation and how trust subsequently affects purchase intention.

III. THEORETICAL FOUNDATIONS AND CORE CONCEPTS

Understanding the role of virtual human interactivity in e-commerce requires a clear conceptualization of several key constructs, including virtual human interactivity, trust, and purchase intention. These concepts are rooted in interdisciplinary research spanning information systems, marketing, psychology, and human-computer interaction. This section defines and explains these core concepts and establishes the theoretical foundation for analyzing their relationships.

3.1 Virtual Human Interactivity

Virtual human interactivity refers to the degree and quality of interaction between users and digitally generated human-like agents within an online environment. These virtual humans are designed to simulate human communication through text, voice, or visual embodiment, enabling more natural and engaging interactions compared to traditional static interfaces. In e-commerce, virtual humans commonly appear as chatbots, virtual assistants, digital customer service representatives, or virtual influencers.

The concept of interactivity originates from communication theory and has been widely applied in digital environments. It generally includes three key dimensions: responsiveness, bidirectionality, and controllability. Responsiveness refers to how quickly and accurately the system replies to user inputs. Bidirectionality reflects the extent to which communication flows in both directions, allowing users to actively participate rather than passively receive information. Controllability indicates the user's ability to influence the interaction process.

In the context of virtual humans, interactivity is further enriched by additional features such as personalization and

anthropomorphism. Personalization enables virtual agents to tailor responses and recommendations based on user preferences, browsing history, or behavioral data. Anthropomorphism refers to the extent to which virtual humans exhibit human-like characteristics, including appearance, language style, emotions, and social cues. Higher levels of anthropomorphism can enhance perceived social presence, making users feel as if they are interacting with a real person rather than a machine.

Theoretically, virtual human interactivity can be linked to Social Presence Theory, which suggests that richer communication media increase the sense of human warmth and sociability, thereby enhancing user engagement and behavioral intention. Additionally, the Computers Are Social Actors (CASA) paradigm posits that individuals tend to apply social rules and expectations to interactions with computers, particularly when these systems exhibit human-like characteristics. These theories explain why highly interactive and anthropomorphic virtual agents can significantly influence user perceptions, trust formation, and behavioral outcomes.

3.2 Trust in E-commerce

Trust is a fundamental concept in e-commerce research and plays a critical role in reducing uncertainty in online transactions. It is commonly defined as a consumer's willingness to rely on an online platform, system, or agent based on the expectation that it will perform reliably, securely, and in the consumer's best interest. In the absence of face-to-face interaction and physical product inspection, trust becomes a key determinant of whether consumers feel comfortable engaging in online transactions.

In e-commerce contexts, trust is often conceptualized as a multidimensional construct, including competence, integrity, and benevolence. Competence refers to the ability of the system or agent to perform effectively. Integrity refers to the perception that the system or provider is honest and reliable. Benevolence reflects the belief that the system acts in the user's interest. These dimensions are particularly relevant when consumers interact with virtual humans, as users must assess not only the platform but also the behavior and outputs of the virtual agent.

Several theoretical models provide a foundation for understanding trust in digital environments. For example, the Technology Acceptance Model highlights the roles of perceived usefulness and perceived ease of use, which are often associated with trust formation. Trust transfer theory suggests



that trust in a platform can be transferred to its technological components, such as virtual agents. Additionally, uncertainty reduction theory emphasizes that trust helps individuals cope with uncertainty by providing a sense of predictability and control.

Virtual human interactivity can influence trust through multiple mechanisms. High responsiveness and accurate information increase perceived competence, while consistent and transparent interactions enhance perceptions of integrity. Anthropomorphic features, such as human-like language or facial expressions, can evoke emotional responses and foster a sense of social connection, thereby strengthening perceived benevolence. Consequently, trust is not only a cognitive evaluation but also an affective response shaped by the quality of interaction.

3.3 Purchase Intention

Purchase intention is a central concept in consumer behavior research and refers to the likelihood or willingness of a consumer to purchase a product or service in the future. It is widely used as a proxy for actual purchasing behavior, particularly in studies where direct observation of transactions is not feasible. In e-commerce, purchase intention reflects consumers' readiness to engage in online transactions after evaluating available information and experiences.

From a theoretical perspective, purchase intention is often explained using models such as the Theory of Planned Behavior, which posits that behavioral intention is influenced by attitudes, subjective norms, and perceived behavioral control. In online environments, these factors are shaped by both technological and psychological variables, including perceived usefulness, perceived enjoyment, trust, and perceived risk.

Trust plays a particularly important role in shaping purchase intention. When consumers trust an e-commerce platform or virtual agent, they are more likely to believe that the transaction will be safe and that the product or service will meet their expectations. This reduces perceived risk and increases confidence, thereby strengthening purchase intention. Conversely, a lack of trust can lead to hesitation, information avoidance, or abandonment of the purchase process.

In addition to trust, virtual human interactivity can influence purchase intention through indirect pathways. For instance, engaging and personalized interactions may enhance user satisfaction and emotional attachment, which in turn increase the likelihood of purchase. The integration

of cognitive, affective, and relational factors highlights the complexity of consumer decision-making in e-commerce environments.

IV. RELATIONSHIP AMONG VIRTUAL HUMAN INTERACTIVITY, TRUST, AND PURCHASE INTENTION

The interaction between virtual human interactivity, trust, and purchase intention represents a central theme in contemporary e-commerce research. While each of these constructs has been studied independently, increasing attention has been given to their integrated relationships, particularly the mechanisms through which interactive technologies influence consumer decision-making. This section examines how virtual human interactivity shapes consumer experience, contributes to trust formation, and ultimately affects purchase intention.

4.1 Impact of Virtual Human Interactivity on Consumer Experience

Virtual human interactivity significantly enhances the overall consumer experience in e-commerce environments. Compared to traditional static web interfaces, interactive virtual agents provide real-time communication, personalized assistance, and adaptive responses, which can improve both functional and emotional aspects of the shopping process.

From a functional perspective, high interactivity reduces information search costs by delivering relevant and timely information. Consumers can quickly obtain product details, compare alternatives, and receive tailored recommendations, which facilitates decision-making efficiency. From an experiential perspective, interactive virtual humans create a more engaging and enjoyable shopping environment. Features such as conversational dialogue, visual embodiment, and emotional expressions contribute to a sense of immersion and entertainment.

Moreover, virtual human interactivity enhances perceived social presence, which refers to the feeling of being socially connected with another entity in a mediated environment. When users perceive a virtual agent as socially present, they are more likely to engage in deeper interaction and attribute human-like qualities to the system. This enhanced engagement can strengthen emotional attachment and positively influence attitudes toward the platform.



4.2 Role of Virtual Human Interactivity in Building Trust

One of the most important outcomes of virtual human interactivity is its ability to facilitate trust formation. In online environments characterized by uncertainty and lack of physical interaction, trust is often built through cues embedded in the interaction process. Virtual humans serve as key carriers of such cues.

First, responsiveness and accuracy in communication contribute to perceptions of competence. When virtual agents provide timely, relevant, and correct information, users are more likely to perceive them as reliable and capable. Second, consistency and predictability in interactions enhance perceptions of integrity. If a virtual human behaves in a stable and transparent manner, consumers are more confident in its reliability.

Third, anthropomorphic features play a crucial role in fostering affect-based trust. Human-like characteristics, such as natural language, emotional expressions, facial features, and conversational tone, can evoke social responses and increase perceived warmth and friendliness. This aligns with the notion that individuals tend to treat computers as social actors, especially when they exhibit human-like attributes.

Additionally, personalization strengthens trust by signaling that the system understands and responds to individual needs. Tailored recommendations and customized interactions create a sense of care and attention, which enhances users' confidence in the system. Overall, virtual human interactivity contributes to both cognitive trust based on rational evaluation and affective trust based on emotional connection.

4.3 Effect of Trust on Purchase Intention

Trust plays a pivotal role in translating interactive experiences into actual behavioral

intentions. In e-commerce settings, consumers often face multiple sources of perceived risk, including financial risk, product uncertainty, and privacy concerns. Trust acts as a mechanism for reducing these perceived risks and increasing consumers' willingness to engage in transactions.

When consumers trust a virtual human or the platform it represents, they are more likely to believe that the information provided is accurate, that the transaction process is secure, and that the outcomes will meet their expectations. This confidence reduces hesitation and increases the likelihood of purchase. Conversely, low levels of trust can lead to skepticism, avoidance behavior, or abandonment of the purchase process, regardless of the quality of interaction.

Trust also influences purchase intention indirectly through other psychological variables. For example, higher trust levels are often associated with increased satisfaction, perceived value, and loyalty, all of which contribute to stronger purchase intentions. Therefore, trust not only has a direct effect but also operates as a central mechanism within a broader network of consumer responses.

4.4 Integrated Relationship and Conceptual Pathway

Based on the above discussion, the relationship among virtual human interactivity, trust, and purchase intention can be conceptualized as a structured pathway: virtual human interactivity enhances trust, and trust subsequently strengthens purchase intention. In this framework, virtual human interactivity serves as the initial stimulus that shapes user perceptions and experiences. Through enhanced responsiveness, personalization, and anthropomorphism, interactivity fosters trust in the virtual agent and the platform. Trust, in turn, acts as a mediating variable that transforms these positive perceptions into behavioral intentions.

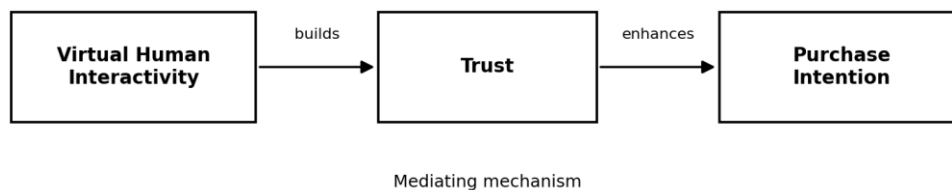


Figure 2. Conceptual pathway linking virtual human interactivity, trust, and purchase intention



It is important to note that this relationship is not purely linear. In many cases, additional mediating and moderating variables may influence the strength and direction of the relationships. For instance, emotional engagement, perceived enjoyment, and user satisfaction may act as complementary mediators, while individual differences and technological characteristics may moderate the effects. Overall, this integrated perspective highlights the critical importance of trust as a bridge between technological interaction and consumer behavior. It suggests that simply improving the technical capabilities of virtual humans is not sufficient; building and maintaining consumer trust is essential for achieving meaningful commercial outcomes in e-commerce environments.

V. INFLUENCING FACTORS AND RESEARCH GAPS

5.1 Platform-Related Factors

Different types of e-commerce platforms create distinct interaction environments, which can significantly affect how virtual human interactivity influences trust and purchase intention. For instance, live-streaming commerce platforms emphasize real-time interaction and entertainment, where virtual humans, such as virtual streamers, can engage users through dynamic communication and immersive experiences. In such contexts, interactivity plays a stronger role in shaping emotional engagement and immediate purchasing decisions.

In contrast, social commerce platforms rely heavily on social interaction, user-generated content, and peer influence. Virtual humans in these environments may function as influencers or brand representatives, where their credibility and perceived authenticity become critical factors in building trust. Meanwhile, traditional e-commerce platforms focus more on efficiency and information processing, where virtual agents primarily serve as customer support tools. In these settings, responsiveness and accuracy may be more important than emotional engagement.

Furthermore, platform design elements such as interface usability, visual presentation, and system reliability also influence user perceptions. A well-designed platform can enhance the effectiveness of virtual human interaction, while a poorly designed interface may undermine trust, regardless of the virtual agent's capabilities. Therefore, platform characteristics act as important contextual variables that shape the overall interaction experience.

5.2 Consumer-Related Factors

Consumer heterogeneity plays a crucial role in determining how individuals perceive and respond to virtual human interactivity. Different users may have varying levels of familiarity, acceptance, and expectations toward digital technologies, which in turn affect their trust and purchase intentions.

One important factor is age. Younger consumers, who are typically more accustomed to digital environments, may be more receptive to interacting with virtual humans and more willing to trust them. In contrast, older consumers may exhibit higher levels of skepticism or require stronger trust cues before engaging in transactions.

Another key factor is technology acceptance, often associated with perceived ease of use and perceived usefulness. Consumers who are more comfortable with technology are more likely to engage with virtual agents and derive value from their functionalities. Similarly, trust propensity, defined as an individual's general tendency to trust others, can influence how quickly and strongly trust is formed in virtual environments.

Additionally, prior online shopping experience, cultural background, and personal preferences may also shape consumer responses. For example, individuals from high-uncertainty-avoidance cultures may place greater emphasis on trust and risk reduction, thereby strengthening the role of trust in the interaction-purchase relationship.

5.3 Technological Factors

The technological characteristics of virtual humans are another critical determinant of their effectiveness. Among these, anthropomorphism is one of the most widely studied factors. Virtual humans with human-like appearances, voices, and behaviors are more likely to evoke social responses and emotional connections, thereby enhancing trust and engagement. However, excessive realism may also lead to the uncanny valley effect, where users feel discomfort or distrust toward overly human-like agents.

Personalization is another key feature that influences user perception. By leveraging data analytics and machine learning, virtual humans can provide customized recommendations and responses tailored to individual users. This not only improves decision-making efficiency but also signals attentiveness and care, which can strengthen trust.

In addition, the intelligence level of virtual agents, including their ability to understand natural language, learn from interactions, and adapt to user



behavior, plays a significant role. More advanced AI systems are better equipped to deliver accurate and context-aware responses, thereby enhancing perceived competence and reliability.

Other technological aspects, such as visual realism, voice quality, and interaction smoothness, also contribute to the overall user experience. Together, these features determine how effectively virtual human interactivity can influence trust and subsequent behavioral outcomes.

5.4 Research Gaps

Despite the growing body of literature on virtual human interactivity in e-commerce, several important gaps remain. First, there is a lack of comparative research examining different types of virtual humans. Most studies focus on a single type of agent, such as chatbots or virtual influencers, without systematically comparing their effectiveness across different contexts. Second, cross-cultural research is limited. Consumer perceptions of trust,

technology, and interaction may vary significantly across cultural settings, yet many studies are conducted within a single country or region. This limits the generalizability of findings.

Third, existing research tends to focus on short-term behavioral intentions, such as immediate purchase intention, while overlooking long-term outcomes such as customer loyalty, trust sustainability, and relationship development. Fourth, there is a lack of integrated theoretical frameworks. While various theories, such as TAM, TPB, and Social Presence Theory, have been applied, they are often used in isolation. A more comprehensive framework that integrates technological, psychological, and contextual factors is needed. Finally, methodological limitations are also evident. Many studies rely on survey-based approaches, which may not fully capture actual consumer behavior. Future research could benefit from experimental designs, longitudinal studies, and real-world data analysis.

Research Gap	Current Limitation	Future Direction
Virtual human types	Limited comparison among chatbots, virtual influencers, and digital humans	Conduct comparative studies across different agent types
Cultural context	Dominance of single-country studies	Examine cross-cultural differences in trust formation
Time horizon	Emphasis on short-term purchase intention	Investigate long-term loyalty and sustained trust
Theory integration	Fragmented use of TAM, TPB, and Social Presence Theory	Develop integrated frameworks combining technology and psychology
Methodology	Over-reliance on self-reported survey data	Use experiments, longitudinal designs, and platform data

Table 2. Summary of research gaps and future research directions

VI. CONCLUSION AND FUTURE DIRECTIONS

This paper has provided a systematic review of virtual human interactivity in e-commerce, with a particular focus on the role of trust and its impact on consumers' purchase intention. By synthesizing existing literature, the study highlights that virtual human interactivity, characterized by responsiveness, personalization, and anthropomorphism, plays a significant role in enhancing consumer experience and shaping behavioral outcomes. More importantly, trust emerges as a central mechanism that mediates the relationship between interactive technologies and purchase intention.

The analysis demonstrates that virtual human interactivity contributes to both cognitive

and affective dimensions of trust. On the one hand, accurate and timely responses enhance perceptions of competence and reliability; on the other hand, human-like characteristics and personalized interactions foster emotional connection and perceived benevolence. These trust-building processes reduce perceived risks associated with online shopping and increase consumers' confidence in engaging with digital platforms. As a result, trust serves as a critical bridge that transforms interactive experiences into actual purchase intentions.

Despite these insights, the study also identifies several limitations in the current body of research. Existing studies often focus on specific types of virtual humans or single-platform contexts, limiting the generalizability of findings. In addition, much of the literature emphasizes short-term



behavioral intentions while neglecting long-term outcomes such as customer loyalty, sustained trust, and relationship development. The lack of unified theoretical frameworks further suggests the need for more integrated approaches that combine technological, psychological, and contextual perspectives.

Based on these observations, several directions for future research are proposed. First, future studies should conduct comparative analyses of different types of virtual humans across various e-commerce settings to better understand their relative effectiveness. Second, cross-cultural research is needed to examine how cultural differences influence trust formation and consumer responses to virtual agents. Third, longitudinal studies should be employed to explore the dynamic evolution of trust and its long-term impact on consumer behavior. Fourth, interdisciplinary approaches integrating insights from psychology, neuroscience, and human-computer interaction could provide deeper understanding of user cognition and emotion in virtual environments. Finally, more robust methodological designs, including experiments and real-world data analysis, are encouraged to enhance the validity and applicability of research findings.

From a practical perspective, the findings of this study offer important implications for e-commerce platforms and businesses. To effectively leverage virtual human technologies, firms should prioritize the design of interactive systems that not only deliver functional efficiency but also foster trust and emotional engagement. Enhancing personalization, improving communication quality, and incorporating appropriate levels of anthropomorphism can significantly strengthen consumer trust and increase purchase intention. By aligning technological innovation with consumer psychological needs, businesses can create more effective and sustainable digital commerce strategies.

In conclusion, as virtual human technologies continue to evolve, their role in e-commerce will become increasingly prominent. Understanding the interplay between interactivity, trust, and consumer behavior is essential for both academic research and industry practice. This study contributes to this understanding and provides a foundation for future exploration in this rapidly developing field.

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