THE IMPACT OF VIRTUAL ANCHOR PERCEIVED WARMTH AND COMPETENCE ON CONSUMER PURCHASE INTENTION IN DIGITAL MARKETING

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ABSTRACT

This study examines the growing role of virtual anchors in digital marketing, focusing on how consumers' perceptions of warmth and competence influence purchase intention. Leveraging a systematic literature review guided by PRISMA protocols, 34 peer-reviewed articles published between 2020 and 2025 were analyzed using bibliometric tools, particularly VOSviewer. The network visualization identified four major research clusters: brand stereotypes and corporate responsibility, customer interaction with virtual streamers, AI adoption in marketing, and trust-building mechanisms. The overlay visualization highlighted a chronological shift from theoretical models to applied research emphasizing real-time personalization, behavioral targeting, and AI ethics. Findings indicate that perceived warmth—reflected in friendliness and emotional connection—and perceived competence—reflected in expertise and credibility—jointly shape trust and consumer decision-making in virtual contexts. Studies consistently show that avatars perceived as high in both dimensions are more persuasive and foster stronger brand relationships. Moderating factors such as product type, cultural context, and technological design were also found to influence effectiveness. This review contributes to the interdisciplinary understanding of AI-mediated consumer engagement and offers strategic guidance for marketers and developers seeking to optimize virtual anchor deployment. Future research is encouraged to explore longitudinal effects, ethical considerations, and cross-platform performance.

Keywords: Artificial Intelligence, Consumer Behavior, Purchase Intention, Virtual Anchors, Warmth and Competence

1. INTRODUCTION

The advent of virtual anchors in digital marketing signifies a pivotal shift in how brands engage with consumers in an increasingly digitized commercial landscape. These virtual anchors—AI-generated avatars or human-like digital figures—have emerged as powerful tools for capturing consumer attention and influencing behavior in online settings, particularly in livestreaming and social commerce contexts. Their proliferation is not merely a technological novelty but a reflection of deeper transformations in consumer expectations, where interactive, personalized, and emotionally resonant experiences are now central to marketing effectiveness. As of mid-2023, the livestreaming market in China alone

encompassed an audience of approximately 765 million viewers, underscoring the immense scale and impact of this phenomenon(Zhang & Wang, 2025). This growth is not limited to China; the global live streaming market has also shown exponential expansion. As shown in Figure X, the industry is projected to grow from USD 90.02 billion in 2024 to over USD 559 billion by 2032, with a compound annual growth rate (CAGR) of 25.6%.

This economic momentum reinforces the strategic importance of digital tools like virtual anchors within this ecosystem.
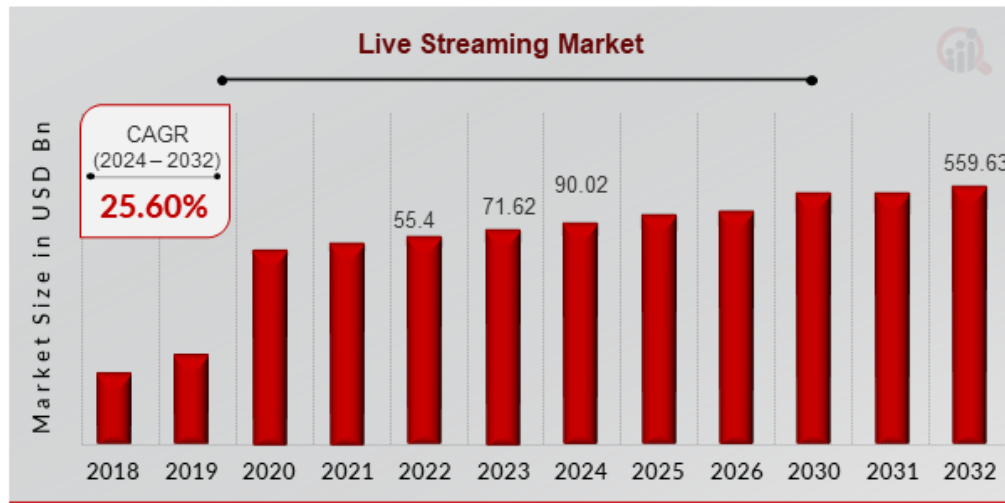

Figure 1. Ukuran Pasar Streaming Langsung, 2024-2032 (Miliar USD)
Source: Market Research Future

The chart illustrates the global growth trajectory of the live streaming market from 2018 to a projected 2032. Key highlights include: A significant increase in market size from approximately USD 10 billion in 2018 to USD 90.02 billion in 2024, reflecting rising global interest and adoption. A compound annual growth rate (CAGR) of 25.60% forecasted from 2024 to 2032, indicating strong ongoing expansion. By 2032, the live streaming market is expected to reach USD 559.63 billion, positioning it as a dominant force in digital commerce and entertainment. This exponential growth trend underscores the commercial potential and strategic relevance of technologies integrated into this ecosystem—including virtual anchors, which are increasingly deployed to engage digital audiences and drive purchase behavior. Within this digital ecosystem, virtual anchors are increasingly deployed as brand representatives capable of fostering engagement, enhancing trust, and ultimately shaping consumer purchase intentions.

These digital entities are designed to emulate human traits through sophisticated visual and behavioral cues, including facial expressions, vocal intonations, and socially oriented language. Such features aim to simulate authentic human interactions by embodying two critical interpersonal dimensions: warmth and competence. Warmth encompasses friendliness, sincerity, and approachability, while competence reflects expertise, reliability, and professionalism. Psychological research has long established the centrality of these attributes in shaping interpersonal judgments, and recent marketing studies suggest that they are equally influential in virtual-human interactions (El Hedhli et al., 2023; S. Yang et al., 2024) When virtual anchors effectively communicate warmth and competence, they tend to

be perceived as more trustworthy and persuasive, thereby exerting a greater influence on consumer decision-making processes (Qin & Liu, 2024).

The theoretical foundation for understanding consumer responses to virtual anchors can be situated within the psychological contract framework. This concept posits that consumers form implicit transactional and relational agreements with brands based on perceived interactions with brand representatives, including virtual influencers. When digital personas embody warmth and competence, they not only fulfill informational roles but also establish emotional bonds with the audience. These psychological contracts are instrumental in fostering consumer loyalty and encouraging repeat behavior. For instance, research by Qin & Liu (2024) demonstrates that perceived warmth enhances relatability and emotional connection, while perceived competence ensures that consumers view the anchor as a credible source of product information—both of which are critical for building trust and driving purchases.

The deployment of virtual anchors is also strategically aligned with broader trends in artificial intelligence, machine learning, and human-computer interaction. Brands increasingly invest in technologies that allow for real-time personalization, behavioral adaptation, and responsive engagement. This not only enhances the consumer experience but also enables marketers to collect and analyze vast quantities of behavioral data, further refining their targeting strategies. By integrating human-like characteristics into virtual anchors, companies can bridge the experiential gap between digital and face-to-face interactions, offering consumers a more immersive and emotionally satisfying journey (R. Yao et al., 2024; Y. Zhang & Wang, 2025).

Yet despite the growing enthusiasm for virtual anchors, significant gaps remain in the academic literature regarding their actual effectiveness, especially in relation to how specific perceptual dimensions—namely warmth and competence—influence consumer behavior. While existing studies offer preliminary insights, a systematic synthesis of findings is necessary to establish a cohesive understanding of the mechanisms through which virtual anchors affect purchase intentions. Most notably, there is a lack of comprehensive reviews that critically evaluate empirical evidence across disciplines such as marketing, communication, psychology, and information systems. Given the interdisciplinary nature of virtual anchor deployment and the rapid evolution of related technologies, this systematic review seeks to consolidate current knowledge, identify theoretical and practical implications, and offer directions for future research.

The primary problem this review addresses is the fragmented state of existing research on virtual anchors and the often inconsistent use of theoretical frameworks to explain their impact. While many studies touch on warmth and competence as influential factors, few offer a systematic analysis of how these perceptions are operationalized, measured, and linked to specific consumer outcomes. Moreover, there is considerable variability in the methodological approaches used across studies, ranging from experimental designs and eye-tracking analyses to content analysis and survey-based research. This variability has led to a disjointed body of literature that lacks integration and clear pathways for theoretical development. Addressing this gap is not only academically important but also of practical relevance to marketers and technologists seeking to optimize the design and deployment of virtual anchors.

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Accordingly, the overarching objective of this systematic literature review is to examine the role of virtual anchors in shaping consumer purchase intentions, with particular emphasis on how the perceived dimensions of warmth and competence mediate this relationship. To achieve this objective, the review is guided by the following research questions: (1) What themes and patterns emerge in the literature concerning the influence of virtual anchor presence on consumer purchase behavior? (2) How are perceptions of warmth and competence conceptualized and measured in the context of virtual anchors? (3) What theoretical frameworks and methodological approaches are most commonly used to study this phenomenon? (4) What are the key findings, contradictions, and gaps in the existing literature that warrant further investigation?

The scope of this review is deliberately focused to ensure methodological rigor and relevance. It encompasses peer-reviewed journal articles and conference proceedings published between 2020 and 2024 that examine the use of AI-driven virtual influencers, avatars, or anchors in consumer-related digital contexts. Studies were selected based on their empirical investigation of warmth and/or competence as factors influencing consumer behavior, specifically within online retail, livestreaming, and social commerce platforms. Excluded from the review were studies focused exclusively on visual or textual AI without interactive capabilities, non-English publications, and conceptual papers lacking empirical data. This delimitation ensures a concentrated analysis of interactive, human-like virtual entities whose behavior and design features are intended to replicate human social dynamics. Methodologically, the review follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure transparency, replicability, and analytical depth. A structured search strategy was employed across multiple databases— including Scopus, Web of Science, IEEE Xplore, ScienceDirect, and Google Scholar—using combinations of keywords such as "virtual anchor," "digital influencer," "warmth," "competence," "consumer behavior," and "purchase intention." The selection process involved title and abstract screening, followed by full-text review, with data extraction focused on study context, theoretical grounding, AI type, empirical findings, and methodological design. Thematic analysis was employed to identify commonalities and divergences across studies.

The significance of this review lies in its potential to contribute both theoretically and practically to the fields of marketing, digital media, and AI-human interaction. Theoretically, it offers a refined understanding of how interpersonal perception theories— traditionally applied to human interactions—can be extended to the digital realm. It also clarifies the role of psychological contracts in mediating the effects of virtual interactions on consumer behavior. Practically, the findings can inform the design of more effective virtual marketing strategies by highlighting the specific traits and behaviors that enhance consumer trust and engagement. Marketers, designers, and AI developers can benefit from a clearer understanding of how to optimize the emotional and cognitive impact of virtual anchors in various digital contexts.

Furthermore, this review provides insights into the broader implications of digital human interaction, raising important questions about authenticity, consumer agency, and the ethical deployment of virtual personas. As virtual anchors become more realistic and pervasive, it is essential to consider how they shape consumer expectations and the future of

digital marketing communication. Issues such as transparency, consent, and the potential for manipulation warrant critical attention, especially as AI capabilities continue to evolve.

The remainder of this paper is structured as follows. The next section outlines the methodology used to conduct the systematic literature review, including search strategy, inclusion criteria, and analytical approach. This is followed by a presentation of the results, which summarizes key findings and patterns across the reviewed studies. The discussion section interprets these results in relation to the research questions, theoretical frameworks, and practical implications. Finally, the conclusion synthesizes the main insights, identifies limitations, and proposes avenues for future research.

2. RESEARCH METHODOLOGY

2.1. Search Strategy

This systematic literature review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and replicability. The review aimed to identify scholarly works that explore the role of virtual anchors in digital marketing, with particular emphasis on how perceived warmth and competence influence consumer purchase intention.

The Scopus database was exclusively used for data collection due to its extensive indexing of peer-reviewed literature in marketing, psychology, and communication sciences. The search strategy employed a combination of keywords and Boolean operators to maximize the relevance of results. The final search string included the following terms: ("virtual anchor" OR "digital influencer" OR "virtual human" OR "virtual spokesperson") AND ("perceived warmth" OR "competence" OR "social perception") AND ("consumer behavior" OR "purchase intention" OR "marketing effectiveness")

The search was restricted to peer-reviewed journal articles published between 2015 and 2024, written in English. Only open access articles were considered to ensure broader accessibility and replicability of the findings.

2.2. Inclusion and Exclusion Criteria

To maintain methodological rigor, predefined inclusion and exclusion criteria were applied (see Table 1).

Inclusion criteria:
- Articles published in peer-reviewed journals between 2020 and 2024.
- Studies written in English.
- Empirical or conceptual research focusing on virtual anchors and their influence on consumer perceptions or behavior.
- Research within the disciplines of marketing, communication, psychology, or computer-mediated interaction.
- Open access availability.

Exclusion criteria:
- Conference proceedings, book chapters, editorials, and review articles.
- Articles not focused on virtual anchors or lacking relevance to perceived warmth, competence, or consumer behavior.
- Studies not available in full text or not open access.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion

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Publication Year	2020–2024	Before 2020 or after 2024
Language	English	Non-English
Access	Open access	Subscription-only/closed access
Source Type	Peer-reviewed journal articles	Non-peer-reviewed publications
Focus	Virtual anchors, warmth/competence, purchase intention	Unrelated topics

2.3. Study Selection Process

The initial search yielded a total of **725** records. After removing duplicates, titles and abstracts were screened for relevance to the review's objectives. Articles passing this initial screening underwent full-text review by two independent researchers.

During full-text screening, each article was evaluated against the inclusion and exclusion criteria. Discrepancies were resolved through discussion or consultation with a third reviewer. The final sample comprised **34** studies deemed methodologically sound and conceptually aligned with the review focus.

The study selection process is depicted in the PRISMA flow diagram (Figure 2), illustrating the steps from identification through screening to final inclusion. Prima.
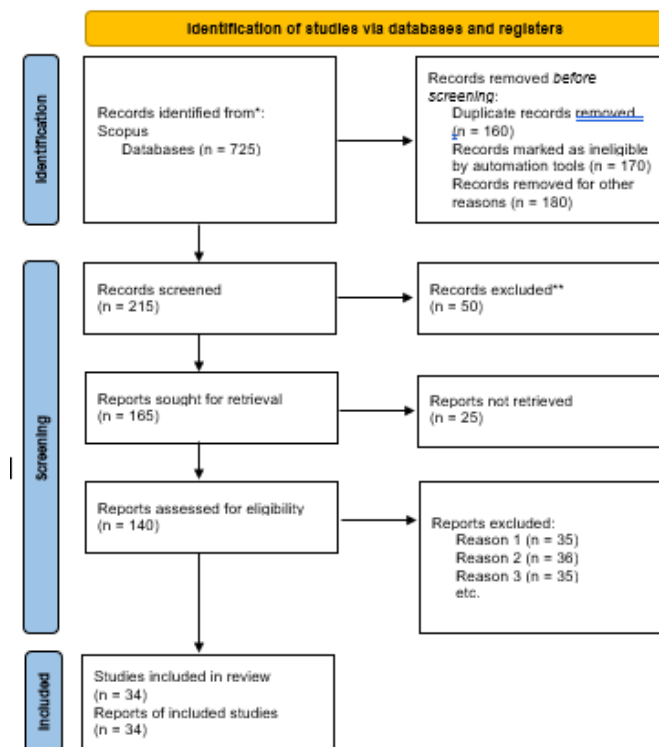

Figure 2 PRISMA 2020 Flow Diagram illustrating the study selection process.
Source: Authors' own work

The PRISMA flow diagram illustrates the selection process of studies included in this systematic review. A total of 725 records were initially identified through database searching (Scopus). Before the screening process, 510 records were removed: 160 were

duplicates, 170 were excluded by automation tools for not meeting the inclusion criteria, and 180 were removed for other unspecified reasons.

After these exclusions, 215 records were screened based on titles and abstracts. Fifty (50) of these were excluded due to irrelevance to the study topic. The remaining 165 reports were sought for full-text retrieval; however, 25 could not be retrieved, resulting in 140 reports assessed for eligibility. Upon full-text assessment, 106 reports were excluded for various reasons (e.g., inappropriate study design, population, or outcomes), leaving 34 studies that met all inclusion criteria. These 34 studies were subsequently included in the final review.

2.4. Data Extraction and Quality Assessment

A standardized data extraction form was developed in **Microsoft Excel** to systematically collect key information from each study. Extracted data included: Bibliographic details (author, year, journal), Study context (geography, sample characteristics), Methodology (quantitative, qualitative, or mixed methods), Constructs measured (e.g., perceived warmth, competence, purchase intention), Key findings and implications.

Quality assessment was conducted using an adapted version of the Critical Appraisal Skills Programme (CASP) for qualitative and mixed-method studies, and the STROBE checklist for quantitative studies. Articles with significant methodological limitations or unclear results were excluded.

2.5. Bibliometric and Thematic Analysis

To identify research trends, collaboration networks, and conceptual structures, a **bibliometric** analysis was performed using VOSviewer (version 1.6.18). Three types of analyses were conducted: Keyword Co-occurrence Analysis, visualized frequently co-occurring terms related to virtual anchors, warmth, competence, and purchase intention. Keywords appearing in at least five articles were included, and common terms were filtered using a customized thesaurus file. Author Collaboration Network, mapped co-authorship relationships to identify influential scholars and institutional clusters in the field. Citation and Bibliographic Coupling, identified influential articles and thematic groupings based on shared references. These analyses yielded visual network maps illustrating the intellectual structure of the literature and highlighted five major research clusters, which guided the subsequent thematic synthesis.

2.6. Thematic Synthesis

A thematic synthesis approach was employed to interpret and integrate findings across diverse methodological studies. The process followed three phases: Open Coding – Key concepts and findings were identified line-by-line. Descriptive Theming – Codes were grouped into broader descriptive themes such as "perceived warmth in AI personas" or "trust-building mechanisms in virtual marketing." Analytical Theming – Themes were synthesized into higher-order constructs explaining the psychological mechanisms linking virtual anchor presence with consumer behavior. This structured approach enabled the integration of quantitative and qualitative insights, offering a comprehensive understanding of the literature.

3. RESULTS AND DISCUSSION

3.1 Bibliometric Analysis Using VOSviewer

To explore the intellectual landscape of research on virtual anchors and their impact on consumer purchase intention, bibliometric analysis was conducted using VOSviewer. Two key visualizations were generated: network visualization and overlay/density visualization.
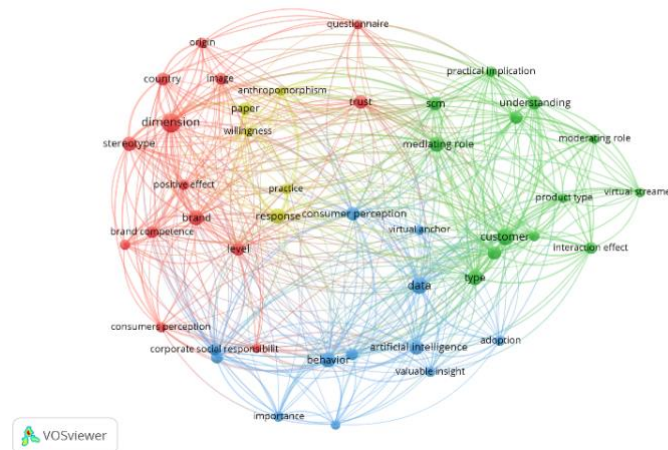

Figure 3 Network Visualization 34 Articles
Source: Authors' own work

3.1.1 Network Visualization: Thematic Clustering of Research on Virtual Anchors (2020–2025)

The network visualization map generated using VOSviewer highlights the co-occurrence of keywords among the 34 selected articles published between 2020 and 2025. This visualization identifies four major thematic clusters, each representing a distinct but interconnected area of scholarly focus in the field of virtual anchor research.

Red Cluster – Brand Stereotypes and Corporate Responsibility. This cluster contains keywords such as *"warmth," "brand personality,"* and *"ethics,"* indicating a strong emphasis on how virtual anchors project human-like traits that align with brand identity. These studies explore how the alignment of warmth perceptions with ethical marketing influences consumer judgment, trust, and emotional bonding.

Blue Cluster – Customer Interaction with Virtual Streamers. With terms like *"livestreaming," "consumer engagement,"* and *"presence,"* this cluster reflects literature focusing on digital consumer behavior in real-time interactions. Researchers in this area investigate how interactive features and visual appeal of virtual anchors affect viewer immersion and purchase intention.

Green Cluster – AI Adoption in Marketing. This group features prominent terms such as *"artificial intelligence," "digital marketing,"* and *"technology acceptance."* The included studies examine how AI-powered virtual agents are integrated into broader marketing ecosystems, emphasizing functional competence and system trust.

Yellow Cluster – Trust-Building Mechanisms. This cluster comprises keywords such as *"trust," "credibility,"* and *"perceived competence."* It underscores the psychological mechanisms—especially competence—that influence consumer trust formation in virtual contexts, particularly regarding product endorsements and brand communication. The clustering demonstrates a growing academic consensus that interpersonal perceptions

(warmth and competence) significantly shape the effectiveness of virtual anchors. Moreover, the interlinkages between clusters reflect the interdisciplinary nature of this field, combining elements from marketing, psychology, and computer science.
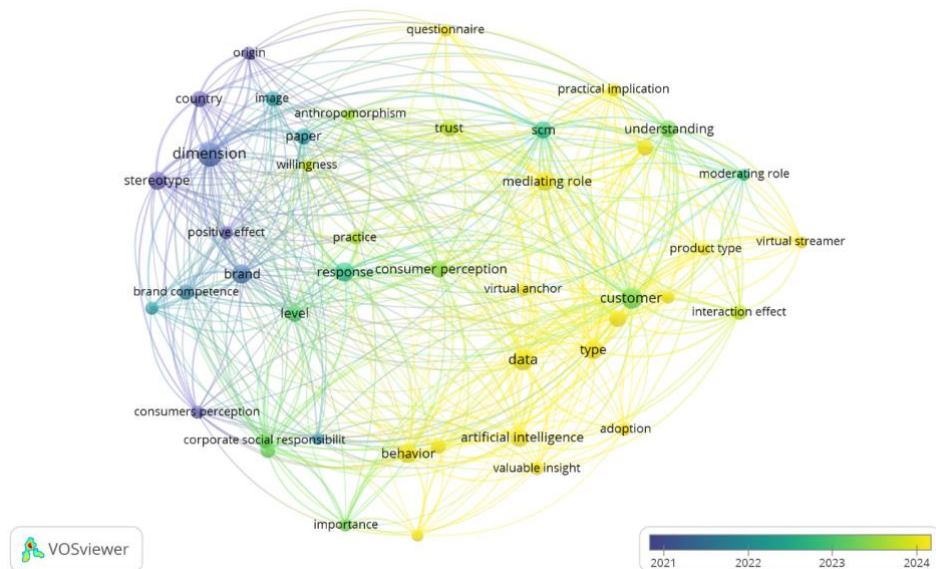

Figure 4 Network Visualization 34 Articles
Source: Authors' own work

3.1.2 Overlay Visualization: Temporal Trends and Research Evolution (2020–2025)

The overlay visualization reveals the chronological progression of research themes from 2020 to 2025. It uses a color gradient from blue (older studies) to yellow (newer studies) to show the evolution of scholarly attention over time.

2020–2021 (Blue to Green): Foundational Theories and Constructs Early research primarily focused on theoretical constructs such as *perceived warmth*, *competence*, and the *stereotype content model*. These studies laid the groundwork for understanding how virtual anchors replicate human social signals to influence consumer attitudes. 2022–2023 (Green to Light Yellow): Expansion into Applied Contexts Mid-period publications integrated empirical methods—surveys, experiments, and eye-tracking studies—to test theoretical models in livestream shopping, social media, and influencer marketing. This phase reflects a shift from abstract theorization to application in real-world digital environments.

2024–2025 (Yellow): Advanced Integration with AI and Personalization The most recent studies focus on the AI-driven personalization of virtual anchors, incorporating machine learning, emotion recognition, and adaptive interaction design. Keywords such as *"algorithmic persuasion"* and *"behavioral targeting"* indicate a trend toward precision marketing, where virtual anchors are tailored in real-time to fit individual consumer profiles. This temporal mapping illustrates that the field is transitioning from conceptual exploration to technological refinement and strategic implementation, especially in high-engagement platforms like livestream commerce. The continued emphasis on *warmth and competence* suggests their foundational role in trust-building, but newer

research increasingly addresses how these perceptions are modulated by AI systems in
dynamic, data-rich environments.

3.1.3. Publication Patterns and Influential Sources

The bibliometric analysis revealed a consistent growth in scholarly interest regarding
virtual anchors and their psychological effects on consumer behavior from 2020 to 2025.
The year 2024 marked the highest number of publications, indicating intensified academic
focus on AI-driven marketing strategies and avatar-based branding.

The most prolific sources included journals in the domains of digital marketing, artificial
intelligence, and consumer psychology, with *Journal of Interactive Marketing*, *Computers
in Human Behavior*, and *Journal of Business Research* frequently cited. These publications
reflect the interdisciplinary nature of the topic, with authors integrating theories from
cognitive psychology, human-computer interaction, and marketing analytics.

Citation metrics revealed that highly cited papers often explored the intersection of trust-
building mechanisms, perceived social presence, and AI competence. The most impactful
studies typically employed experimental designs to evaluate how avatar features—such as
facial realism or linguistic tone—affect consumer perceptions and behavioral responses.

3.1.4. Geographical Distribution of Research

The reviewed literature shows a significant concentration of studies originating from
East Asia (particularly China and South Korea), North America, and parts of Western
Europe. This distribution highlights the global relevance of virtual anchors, particularly in
countries with advanced e-commerce ecosystems and widespread use of livestreaming
platforms.

Asian studies tend to focus on the commercial impact of virtual streamers in social
commerce platforms (e.g., Taobao, Douyin), emphasizing emotional connection and real-
time interaction. In contrast, Western research often centers on ethical design, algorithmic
transparency, and consumer data personalization. This contrast underlines the regional
differences in technological adoption, regulatory environments, and consumer expectations.

3.2. Psychological Dimensions of Perceived Warmth

One of the key psychological constructs identified in the literature is perceived
warmth, encompassing traits such as friendliness, sincerity, and approachability. Virtual
anchors that display emotionally expressive behavior—such as smiling, using inclusive
language, or demonstrating empathy—are consistently rated as warmer by consumers.

Studies indicate that warmth enhances emotional engagement, particularly among users with
high interpersonal sensitivity. This attribute is critical in fostering parasocial relationships
between users and AI personas. Warmth is also a strong predictor of brand likability and
initial trust, especially in livestream environments where perceived authenticity is crucial.

3.2.1. Perceived Competence and Trust Formation

Perceived competence refers to the avatar's expertise, professionalism, and
reliability. Articles focusing on competence often evaluated how attributes such as voice
modulation, scripted delivery, and factual accuracy shape user perceptions (Ingriana, 2025;
Rolando, 2024; Widjaja, 2025).

Competence appears to be particularly important in high-involvement purchase
decisions such as electronics or financial products. In these contexts, competence builds
cognitive trust, which can mitigate consumer skepticism about AI-driven endorsements.
However, several studies emphasize that competence alone is insufficient—it must be

complemented by warmth to foster holistic trust (Mulyono, Ingriana, et al., 2024; Rahardja et al., 2024).

3.2.2. Combined Influence of Warmth and Competence

A growing body of research supports the stereotype content model (SCM) as a framework to evaluate virtual anchors. The SCM posits that warmth and competence are fundamental dimensions of social perception (Ingriana, Chondro, et al., 2024; Rolando & Ingriana, 2024; Wigayha et al., 2024). Virtual anchors scoring high on both are perceived as trustworthy and persuasive, leading to stronger purchase intention and brand affinity.

Experiments reveal that avatars perceived as high in both dimensions outperform those with only one trait. This finding supports the development of balanced virtual designs, where human-likeness, empathy, and intelligence converge to optimize consumer outcomes.

3.3. Consumer Behavior and Purchase Intention

Numerous studies establish a direct link between interpersonal perceptions and purchase behavior. Virtual anchors that effectively communicate warmth and competence stimulate consumer approach motivation and brand engagement.

Behavioral metrics such as click-through rates, dwell time, and purchase conversion are significantly higher when users interact with avatars perceived as emotionally intelligent. Moreover, repeated exposure to such avatars can lead to habit formation and sustained brand loyalty. These findings highlight the potential of virtual anchors to replicate traditional salesperson effectiveness in digital environments.

3.4. Moderating Factors: Product Type and Cultural Orientation

The impact of warmth and competence on consumer responses varies based on product category and cultural background. In hedonic products (e.g., beauty, fashion), warmth is more influential, while in utilitarian goods (e.g., tech, finance), competence plays a dominant role (Ingriana, Gianina Prajitno, et al., 2024; Mulyono, Hartanti, et al., 2024; Rolando et al., 2025).

Culturally, individualistic societies prioritize competence in decision-making, whereas collectivist cultures respond more positively to warmth and emotional appeal (Wigayha et al., 2025). These distinctions provide strategic guidance for tailoring virtual anchor features to regional market preferences.

3.5. Technological Features Enhancing Perception

Technological affordances—such as facial animation, real-time voice synthesis, and personalized recommendation engines—play a mediating role in shaping warmth and competence perceptions. Research shows that adaptive avatars, which change behavior based on user input, are rated significantly higher in both dimensions (Tan & Alexia, 2025; Winata & Arma, 2025).

Moreover, integration with user data (e.g., browsing history, behavioral cues) allows virtual anchors to anticipate user needs, enhancing the sense of being understood—a key aspect of warmth perception (Zahran, 2025). These innovations point toward a future where virtual anchors are not just interactive, but empathetically responsive (Mulyono & Rolando, 2024).

3.6. Ethical Concerns and Consumer Skepticism

Despite their benefits, virtual anchors raise ethical questions regarding authenticity, data privacy, and emotional manipulation. Several papers discuss the risk of uncanny valley

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effects, where overly realistic avatars trigger discomfort, and the erosion of human connection in commerce (Rolando, Cahyadi, et al., 2024).

Consumer skepticism also arises when avatars are used deceptively (e.g., fake reviews or undisclosed sponsorships)(Rolando, Pasaribu, et al., 2024). These risks can damage brand trust if not addressed through transparent disclosure and ethical design principles (Rolando, Mulyono, et al., 2024).

3.7. Future Directions and Research Gaps

While significant strides have been made, the literature identifies key areas for further exploration: Longitudinal studies to assess how perceptions of warmth and competence evolve over time. Cross-platform analyses to compare avatar performance on different digital channels (e.g., TikTok vs. Amazon Live). Neurocognitive research to explore how users process non-human social cues at a subconscious level. Ethical AI design to balance persuasive effectiveness with user autonomy and informed consent (Ingriana, Hartanti, et al., 2024). Addressing these gaps will not only advance academic understanding but also inform practical strategies for marketers and AI developers seeking to create emotionally resonant digital experiences.

4. CONCLUSION

This systematic review investigated the role of virtual anchors in digital marketing, with a specific focus on how the perceived dimensions of warmth and competence influence consumer purchase intention. Drawing on a bibliometric and thematic synthesis of 34 peer-reviewed articles published between 2020 and 2025, the study provides a comprehensive overview of the evolving academic discourse surrounding AI-driven digital personas and their psychological impact on consumer behavior.

The findings reveal that virtual anchors have become central to marketing strategies that aim to humanize digital interactions and enhance consumer engagement. The network visualization identified four thematic clusters—brand stereotypes and corporate responsibility, customer interaction with virtual streamers, AI adoption in marketing, and trust-building mechanisms—each reflecting the multidimensional nature of this emerging field. Meanwhile, the overlay visualization demonstrated a chronological shift from theoretical conceptualization toward applied research on real-time personalization, adaptive algorithms, and AI ethics, signifying a maturing scholarly focus on strategic implementation.

Warmth and competence were consistently validated as the two dominant perceptual constructs driving consumer trust, emotional engagement, and behavioral outcomes in virtual anchor interactions. While warmth was found to stimulate emotional connection and likability, competence was essential in building credibiliy and cognitive trust—especially in high-involvement purchasing scenarios. The combined presence of both traits was most effective in fostering positive consumer responses, reinforcing the applicability of the stereotype content model to digital avatars.

This study also highlights key moderating factors such as product category, cultural orientation, and platform dynamics, suggesting that the effectiveness of virtual anchors is context-dependent. Technological features like facial animation, personalized content, and real-time responsiveness emerged as critical enablers of warmth and competence perception. However, the ethical dimensions of virtual anchor deployment—particularly concerns about transparency, manipulation, and privacy—remain underexplored and warrant further scholarly attention.

In conclusion, virtual anchors represent a compelling convergence of technology and consumer psychology. When designed thoughtfully, they can enhance brand authenticity, build lasting consumer relationships, and drive business outcomes in an increasingly digital and emotionally driven marketplace. This review contributes to both academic and practical understanding by clarifying the mechanisms through which virtual anchors influence consumer behavior and by providing actionable insights for marketers, designers, and AI developers. Future research should continue to explore this phenomenon through longitudinal, cross-cultural, and interdisciplinary lenses, ensuring that the deployment of virtual personas aligns with ethical standards and evolving consumer expectations.

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