

Voice Assistants and Online Marketing: A Systematic Review

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Abstract

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This study systematically reviews the literature on voice assistants (VAs) and their role in digital marketing between 2021 and 2023. VAs such as Amazon Alexa, Apple Siri, and Google Assistant reshape consumer brand interactions by offering hands free, conversational, and personalized touchpoints. The review shows that adoption is driven by usefulness, ease of use, and trust, while anthropomorphic cues and social presence boost brand attitudes and purchase intentions. Personalization and contextual relevance also enhance persuasion and brand equity, making VAs powerful tools for consumer engagement. However, challenges persist around privacy, security, and skepticism, with the notion of privacy cynicism showing that users continue to rely on VAs despite concerns. These insights stress the need for responsible conversational design that integrates transparency, fairness, and ethics, as the effectiveness of VAs ultimately depends on balancing usability, trust, and safeguards to build sustainable consumer relationships and long term brand value.

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1. Introduction

Voice assistants (VAs) such as Amazon Alexa, Apple Siri, and Google Assistant have become increasingly embedded in consumers' daily lives, transforming how they search for information and interact with brands online (Hoy, 2018). The shift from screen based to voice based interfaces introduces new marketing touchpoints that enable discovery, interaction, and transactions in a hands-free manner (Porcheron et al., 2018). In this context, adoption of VAs is influenced by consumers' perceptions of usefulness, ease of use, and trust in the technology (McLean & Osei-Frimpong, 2019).

Studies further suggest that anthropomorphic cues and social presence in VA interactions can enhance brand attitudes and increase purchase intentions (Choung et al., 2023). At the same time, voice-based interactions raise strategic challenges, particularly in how search mechanisms and brand visibility are reshaped by the rise of voice search (Hoffman & Novak, 2018). Privacy concerns and the risk of unintended data capture remain significant barriers to consumer willingness to adopt voice-enabled commerce (Lau et al., 2018).

More recent work emphasizes that conversational design, context of use, and the ecosystem of skills play critical roles in shaping the effectiveness of voice-based marketing (Mari & Algesheimer, 2021). Against this backdrop, this systematic review synthesizes the literature from 2021 to 2023, focusing on three dimensions: (1) antecedents of VA adoption and usage in consumer journeys, (2) outcomes for persuasion, brand equity, and commerce, and (3) governance issues such as privacy and fairness (Puntoni et al., 2021).

2. Literatur Review

Voice assistants (VAs) are increasingly integrated into consumers' daily routines, changing the way people search for information and interact with brands online. Their hands-free and conversational nature provides new marketing touchpoints that enhance convenience and engagement (Choung et al., 2023). This shift from screen-based to voice-based interaction introduces opportunities for brands to reach consumers in more natural and seamless ways (Pradhan et al., 2018).

Adoption of VAs is shaped by perceptions of usefulness, ease of use, and trust. Trust, in particular, is a decisive factor influencing consumers' willingness to engage with voice-based commerce and share personal information (Guzman, 2019). Moreover, anthropomorphic cues embedded in voice interactions foster social presence, which can strengthen brand attitudes and increase purchase intentions (Chattaraman et al., 2019).

Despite their potential, VAs also present challenges. Voice-only environments limit consumer choice visibility, raising concerns about search and brand discoverability (Schweitzer et al., 2019). In addition, privacy and data security remain major barriers, as users are often concerned about surveillance and unintended recordings (Lau et al., 2018). Addressing these challenges requires thoughtful conversational design and responsible governance in AI-powered marketing.

Recent studies highlight that personalization and contextual relevance in VA interactions significantly improve persuasion and brand equity (Flavián et al., 2022). Together, these insights suggest that while VAs offer transformative opportunities

for marketing, their effectiveness depends on balancing consumer trust, usability, and ethical considerations.

3. Methods

This study employs a systematic literature review approach to analyze recent research on voice assistants and online marketing published between 2021 and 2023. The review process was carried out in three stages: planning, conducting, and reporting. During the planning stage, research objectives and guiding questions were defined to focus on how voice assistants influence consumer adoption, brand outcomes, and governance issues in digital marketing.

The data collection process involved searching for peer-reviewed articles and conference proceedings from major academic databases such as Scopus, Web of Science, ScienceDirect, and Google Scholar. Keywords related to voice assistants, voice commerce, conversational AI, online marketing, brand trust, and consumer behavior were combined with Boolean operators to refine the results. Only publications in English within the specified time frame were considered to ensure relevance and recency.

The inclusion criteria required that articles focus on adoption factors, consumer behavior, marketing outcomes, or governance issues related to voice assistants, while non peer reviewed sources, duplicate entries, and studies outside the domain of marketing and consumer behavior were excluded. After screening titles, abstracts, and full texts, a final set of studies was selected for detailed analysis.

Data extraction involved identifying research objectives, methodologies, theoretical frameworks, and findings from the selected studies. The analysis was conducted using a thematic approach, grouping results into three main categories: antecedents of adoption and use, outcomes related to persuasion and brand equity, and governance challenges such as privacy and fairness. This method provided a structured and transparent process to synthesize existing knowledge and highlight research trends in the period under review.

4. Results and Discussion

Voice assistants (VAs) are increasingly transforming consumer–brand interactions by integrating anthropomorphic cues and social presence into their conversational design. These human-like features enhance brand attitudes and purchase intentions, as they foster stronger perceptions of social presence and trust, although excessive human resemblance may trigger an uncanny effect that reduces effectiveness (Araujo, 2018). In line with these findings, empirical evidence shows that voice-based interactions can significantly improve brand engagement and persuasion, particularly when VAs are designed to sound empathetic and socially present (Chattaraman et al., 2019). Furthermore, personalization and contextual relevance in VA recommendations have been shown to increase their perceived usefulness and credibility, thereby strengthening their persuasive impact and consumer acceptance (Flavián et al., 2023).

However, challenges remain regarding governance, especially in the area of privacy. A central issue is the concept of privacy cynicism, which refers to

consumers' skeptical attitudes toward data collection and surveillance. Research indicates that privacy cynicism can negatively influence attitudes toward VAs, but paradoxically, it may also foster a form of "resigned trust," whereby consumers continue to use VAs despite their concerns (Gerlitz & Helmond, 2021). Privacy concerns more broadly such as fears of unintended recordings, surveillance, and misuse of personal data remain among the strongest barriers to adoption, limiting the willingness of users to engage in voice-enabled commerce (Lau et al., 2018).

At the same time, studies emphasize that the constructs of privacy, security, and trust are often treated in isolation, even though they are deeply interconnected in shaping user perceptions of VAs. Recent research points out the need for integrative frameworks that jointly examine these dimensions, as understanding their combined effect is essential for designing responsible and trustworthy voice technologies (Puntoni et al., 2021). To address these issues, scholars suggest that conversational design must incorporate transparent mechanisms for consent such as clear verbal consent protocols to empower users and mitigate ethical concerns (Seymour et al., 2023).

Overall, the literature from 2021 to 2023 highlights that while VAs offer transformative opportunities for marketing by enhancing persuasion, brand equity, and commerce, their effectiveness ultimately depends on a careful balance between usability, trust, and ethical governance. Firms that succeed in combining anthropomorphic design, personalization, and responsible privacy practices will be better positioned to leverage VAs as strategic tools in consumer journeys.

5. Conclusion

This systematic review highlights that voice assistants (VAs) are no longer peripheral technologies but have become integral elements of consumer brand interactions. Their adoption is largely determined by consumer perceptions of usefulness, ease of use, and trust, confirming the importance of established adoption models while also pointing to new factors such as anthropomorphism and social presence. These human-like qualities create more natural and engaging interactions, which in turn foster positive brand attitudes and increase purchase intentions. At the same time, personalization and contextual relevance emerge as critical mechanisms that enhance the perceived credibility and persuasive capacity of VAs, positioning them as powerful tools for brand equity building and commerce.

Nevertheless, the review also underscores substantial challenges that threaten the broader acceptance of voice-enabled marketing. Privacy concerns, surveillance fears, and the possibility of unintended data capture remain among the strongest barriers for consumers, often reducing their willingness to share information or make purchases through VAs. The concept of privacy cynicism demonstrates that even when users are skeptical, many continue to use these technologies, reflecting a paradoxical form of “resigned trust.” Such dynamics suggest that while VAs may embed themselves in daily routines, unresolved governance issues can undermine long-term consumer confidence.

Another key insight from the literature is that privacy, security, and trust, although conceptually linked, are often studied in isolation. This fragmented approach limits understanding of how these constructs jointly influence consumer

behavior. Future research must therefore adopt integrative frameworks that can capture their combined effect and provide a more holistic view of consumer decision-making in voice enabled environments. Additionally, the role of transparent governance, particularly through mechanisms such as verbal consent and ethical design of conversational flows, is critical in addressing these concerns and aligning VA technologies with principles of fairness and accountability.

Taken together, the findings suggest that VAs offer both opportunities and challenges for marketers. They can serve as highly effective channels for persuasion and consumer engagement when designed with empathy, personalization, and contextual sensitivity. However, their success will ultimately depend on the extent to which firms can balance usability with ethical safeguards and consumer trust. Companies that invest in responsible design practices integrating privacy protection, security, and transparent consent protocols will be best positioned to harness the strategic potential of voice assistants, ensuring not only immediate marketing benefits but also sustainable consumer relationships in the digital marketplace.

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