

Alexa, it's not just us! Voice commerce through the lens of service providers and consumers

Journal of Service
Management

105

Gaurav Gupta

NEOMA Business School, Mont-Saint-Aignan, France

Weng Marc Lim

*Sunway Business School, Sunway University, Sunway City, Malaysia;
ASU-Cintana Alliance Global Affiliate Faculty, Arizona State University, Tempe,
Arizona, USA;*

*School of Business, Law and Entrepreneurship, Swinburne University of Technology,
Hawthorn, Australia and*

Global Research Centre, Sungkyunkwan University, Suwon, South Korea

Neha Chaudhuri

Toulouse Business School, Toulouse, France, and

Divya Sharma

Management Development Institute Gurgaon, Gurugram, India

Received 12 January 2024
Revised 20 June 2024
1 October 2024
29 December 2024
18 March 2025
30 May 2025
Accepted 11 June 2025

Abstract

Purpose – Voice commerce is emerging as a promising new form of electronic commerce (e-commerce) where consumers' service encounters are mediated through tools like voice assistants. While prior research has underscored the role of the attributes of these voice assistants in affecting various aspects of consumer behavior, including purchase intention, satisfaction and loyalty, there is limited understanding of how other attributes—such as those relating to the service, the service provider and the consumer—influence this behavior. Therefore, this study seeks to explore these attributes in greater detail through the service perspective.

Design/methodology/approach – Leveraging an inductive approach based on interviews with 15 e-commerce business developers and 18 shoppers, this study shines a light from the service perspective on the range of attributes that influence consumers' purchase intention in voice commerce.

Findings – Key findings reveal that service attributes like service complexity and service consumption phase, along with service provider attributes such as brand familiarity and multichannel integration, emerge as crucial determinants of consumers' purchase intention in voice commerce. Moreover, consumer attributes involving the perception of relative advantage and privacy risk, along with familiarity and susceptibility to social influence and normative pressures, significantly impact their purchase intention in voice commerce.

Originality/value – This study not only enriches understanding of the diversity of attributes driving purchase intention in voice commerce but also offers a conceptual framework that emphasizes the importance of the service perspective in voice commerce.

Keywords Voice agent, Voice commerce, Voice assistant, Service attributes, Service provider attributes, Consumer attributes

Paper type Research article

1. Introduction

Recent advances in artificial intelligence (AI) and natural language processing (NLP) have fueled the emergence of novel channels in electronic commerce (e-commerce). One prominent

© Gaurav Gupta, Weng Marc Lim, Neha Chaudhuri and Divya Sharma. Published in *Journal of Service Management*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at [Link to the terms of the CC BY 4.0 licence](#).



Journal of Service Management
Vol. 37 No. 1, 2026
pp. 105-140
Emerald Publishing Limited
e-ISSN: 1757-5826
p-ISSN: 1757-5818
DOI 10.1108/JOSM-01-2024-0016

channel is conversational commerce, a subset of e-commerce characterized by interactions that occur through natural conversation—either by voice or text (Lim *et al.*, 2022). Within conversational commerce, voice commerce specifically refers to interactions facilitated by voice-based technologies, such as voice assistants like Alexa, Google Assistant, and Siri (Mahr and Huh, 2022). Unlike conventional e-commerce, which predominantly relies on visual interfaces accessed through websites or mobile applications, voice commerce engages consumers through spoken dialogues, which, in turn, create experiences that closely resemble everyday human conversations (Zierau *et al.*, 2023).

A report by Forbes reveals that a staggering 72% of voice commerce users engage with these tools daily for various functional tasks and commercial endeavors (Crail and Bottorf, 2022). Consequently, global e-commerce transactions via voice assistants alone have catapulted from US\$4.6bn in 2021 to US\$19.4bn in 2023 (Chevalier, 2023), thus making voice commerce a promising modality for firms to deliver their products and services. However, a PwC study underscores a noteworthy distinction, suggesting that while users are increasingly comfortable deploying voice assistants for information searches, they exhibit reservations when it comes to actual purchasing (Hayes and Wagner, 2018). Despite this, the rise of voice assistants marks a transformative shift in human–computer interactions, pivoting toward a more organic and impactful mode of conversational communication (Flavián *et al.*, 2023; Guzman, 2019; Hearst, 2011; Nass and Brave, 2005)—an evolution that carries profound implications for e-commerce. Consequently, there is a growing interest among scholars to dissect the details of this modality, especially focusing on the challenges and opportunities inherent to voice commerce (Malodia *et al.*, 2024; Rzepka *et al.*, 2020; Zaharia and Würfel, 2021).

In Maity and Dass' (2014) study, they juxtaposed consumer purchase processes and interactions across e-commerce, mobile commerce (m-commerce), and traditional in-store purchases. However, voice commerce introduces a distinct set of service dynamics, primarily due to the involvement of voice assistants—intelligent software agents capable of engaging in spoken dialogues with users (Kraus, 2019; Kraus *et al.*, 2019). Voice assistants represent a specific type of conversational agent, alongside chatbots, which instead facilitate text-based interactions (Bérubé *et al.*, 2024). Importantly, voice assistants differ fundamentally from the general concept of voice assistance, which broadly refers to any form of support provided through voice communication without necessarily involving intelligent conversational capabilities (Simms, 2019). Contrasting traditional e-commerce, the service encounter in voice commerce comprises the trio of the voice-powered conversational agent integrated with the service delivery platform, the service provider, and the customer (Elshan *et al.*, 2022). The interactions stemming from this newly established service paradigm present unique challenges, particularly those related to symmetrical information exchanges across both AI–AI and human–AI interfaces. Crucially, these challenges influence the fulfillment of customer expectations and, consequently, adoption intentions (Lee *et al.*, 2020).

Recognizing this complexity, Robinson *et al.* (2020) proposed a service encounter framework that accentuates the multi-actor nature of service engagements facilitated by voice assistants. This framework clearly underscores the knowledge gaps in human–AI engagements—termed as “interspecific” within their framework—in online services. To enhance the utility and acceptance of such technology, understanding the implications of these interactions on customers' evaluations and their subsequent intentions—one of the most accessible and reliable proxies for predicting actual behavior—is paramount. Thus, this investigation endeavors to pinpoint attributes affecting the integration and utilization of voice assistants in voice commerce, with a keen focus on attributes affiliated with the services and service providers in voice commerce.

Despite a recent surge in attention toward voice commerce research, existing literature predominantly focuses on the role of voice assistant attributes (e.g. anthropomorphism, interactivity, usability) in influencing consumer behavior (Berriche *et al.*, 2022; Dellaert *et al.*, 2020; McLean *et al.*, 2021; Moriuchi, 2019). However, limited attention has been directed

toward attributes specifically related to the services and their providers. This oversight limits theoretical understanding and leaves important elements influencing consumer behavior underexplored. Therefore, to develop novel theoretical insights and clearly isolate the impact of these overlooked attributes, clear analytical boundaries are deliberately set in this study, explicitly excluding voice assistant attributes from the empirical scope.

Service attributes refer to features directly associated with the service offering itself, such as *service complexity* (i.e. the degree of difficulty involved in executing and delivering the service) and *service consumption phase* (i.e. the specific stage—pre-purchase, during-purchase, or post-purchase—at which consumers interact with the service). Prior research indicates consumer behavior in e-commerce significantly varies based on product and service characteristics, including tangibility or intangibility and the complexity required in the consumer's decision-making process (Lovelock, 1983; Phau and Meng Poon, 2000; Vijayasarathy, 2002). *Service provider attributes*, on the other hand, encompass attributes associated with the firm delivering the service, including *brand familiarity* (i.e. consumer's prior recognition and knowledge of the brand) and *multichannel integration* (i.e. seamless integration of voice commerce with other service delivery channels).

Further evidence that scholarly understanding regarding how service and service provider attributes shape consumer purchase intentions remains notably limited is presented in Table 1. For example, Fernandes and Oliveira (2021) examined user perceptions of interaction quality with voice assistants, whereas Lu et al. (2020) investigated general technology acceptance attributes, yet neither sufficiently addressed the influence of specific service offerings or their providers' attributes on consumer purchase decisions in voice commerce. Such oversight is notable because voice commerce inherently involves consumers, service providers, and voice assistants (i.e. the technological platforms through which service is rendered), each possessing distinct yet interrelated attributes influencing consumer behavior (Lim et al., 2022; Rabassa et al., 2022). This gap is especially critical in voice-based interactions, where the absence of visual and tactile elements significantly alters consumers' perceptions of service complexity, risk evaluation, and trust toward service providers (Rabassa et al., 2022). While prior studies highlight voice assistant attributes such as anthropomorphism and interactivity as vital for initial user engagement, they neglect the critical relationship these attributes share with the provider's brand image or multichannel integration of services. This omission is problematic because reduced visual and tangible cues in voice commerce heighten the importance of brand familiarity and seamless integration for consumer reassurance and satisfaction (Tassiello et al., 2021; van Doorn et al., 2017).

The present study addresses these identified theoretical gaps by offering three distinct yet interconnected theoretical contributions aligned with MacInnis' (2011) *explication* of conceptual contributions. First, this study identifies and delineates novel concepts in voice commerce—namely, *service attributes* (e.g. service complexity and service consumption phase) and *service provider attributes* (e.g. brand familiarity and multichannel integration)—which have been largely overlooked in prior literature. In explicitly defining and situating these concepts within voice commerce, this study enriches existing understanding of service delivery and consumer interaction with the digital platforms that support this delivery. Second, this study provides an integrative conceptual framework that holistically encapsulates these service and service provider attributes along with consumer attributes, in contrast to prior research, which often considered these attributes partially or separately (Malodia et al., 2023; Moriuchi, 2019). This integrative approach advances theoretical understanding by highlighting that voice commerce is inherently a multi-actor phenomenon involving interactions among multiple attribute categories, rather than focusing exclusively on consumer or voice assistant attributes, as seen in prior research (Dellaert et al., 2020; Lu et al., 2020; van Doorn et al., 2017). Third, through elucidating explicit relationships among these attribute categories, this study's conceptual framework provides theoretical clarity and comprehensiveness in explaining how these attributes collectively influence consumer purchase intention in voice commerce. In this way, this study's contribution moves beyond

Table 1. Literature on attributes in conversational (voice) commerce research

Attribute category	Attribute	Current study	Existing studies	Contribution
Consumer	Autonomy-efficiency tradeoff		Dellaert et al. (2020)	
	Cognitive effort (includes attributes like mental capacity)		Berriche et al. (2022) , Dellaert et al. (2020)	
	Interaction frequency		Hernández-Ortega et al. (2022)	
	Interest		Hernández-Ortega et al. (2022)	
	Path dependence of decision process		Dellaert et al. (2020)	
	Perceived relative advantage	☑		Theoretical extension
	Personality traits		Bawack et al. (2021)	
	Pleasure-based satisfaction		Hernández-Ortega et al. (2022)	
	Positive-to-negative emotions ratio		Berriche et al. (2022)	
	Privacy concerns	☑	Bawack et al. (2021) , Berriche et al. (2022)	Theoretical generalizability
	Relational cohesion (includes attributes like perceived power, perception of voice assistant as partner or servant, relationship orientation)		Grewal et al. (2022) , Hernández-Ortega et al. (2022) , Tassiello et al. (2021) , van Doorn et al. (2017)	
	Social influence and normative pressures	☑	Moriuchi (2019)	Theoretical generalizability
	Technology readiness		van Doorn et al. (2017)	
	Transparency		Berriche et al. (2022)	
	Trust (includes attributes like distrust, perceived risk due to bias)		Bawack et al. (2021) , Berriche et al. (2022) , Malodia et al. (2023) , McLean et al., (2021) , Rabassa et al. (2022)	
Product and service	User familiarity (includes attributes like prior experience)	☑	Bawack et al. (2021)	Theoretical generalizability
	Attractiveness		van Doorn et al. (2017)	
	Level of product involvement		Tassiello et al. (2021)	
	Manipulability		van Doorn et al. (2017)	
	Number of options		Dellaert et al. (2020)	
	Receptiveness		van Doorn et al. (2017)	
	Service complexity	☑		Theoretical extension
	Service consumption phase (includes stages of customer journey)	☑	Grewal et al. (2022)	Theoretical generalizability
Service provider	Type of task (includes type of decision task: objective/subjective, transactional/non-transactional)		Dellaert et al. (2020) , Moriuchi (2019)	
	Brand familiarity	☑		Theoretical extension
	Multichannel integration	☑		Theoretical extension
				(continued)

Table 1. Continued

Attribute category	Attribute	Current study	Existing studies	Contribution
Voice assistant (outside scope of study)	Anthropomorphization (includes attributes like human likeness, humanness, personification)		Dellaert <i>et al.</i> (2020), Grewal <i>et al.</i> (2022), Malodia <i>et al.</i> (2023), van Doorn <i>et al.</i> (2017)	
	Benefit-to-cost ratio (includes attributes like hedonic and utilitarian benefits)		Berriche <i>et al.</i> (2022), McLean <i>et al.</i> (2021)	
	Convenience		Malodia <i>et al.</i> (2023)	
	Competence		van Doorn <i>et al.</i> (2017)	
	Intelligence (includes attributes like perceived intelligence)		Grewal <i>et al.</i> (2022), McLean <i>et al.</i> (2021)	
	Localization		Moriuchi (2019)	
	Media richness		Berriche <i>et al.</i> (2022)	
	Perceived control		Berriche <i>et al.</i> (2022)	
	Perceived ease of use		Malodia <i>et al.</i> (2023), McLean <i>et al.</i> (2021), Moriuchi (2019)	
	Perceived usefulness		Berriche <i>et al.</i> (2022), Malodia <i>et al.</i> (2023), McLean <i>et al.</i> (2021), Moriuchi (2019)	
	Personalization		Berriche <i>et al.</i> (2022)	
	Social attractiveness (includes attributes like social identity, social presence)		Malodia <i>et al.</i> (2023), McLean <i>et al.</i> (2021)	
Outcome	Technical maturity		Berriche <i>et al.</i> (2022)	
	Warmth		van Doorn <i>et al.</i> (2017)	
	Purchase intention (as a proxy of actual purchase)	☑	Malodia <i>et al.</i> (2023), Tassiello <i>et al.</i> (2021)	Theoretical generalizability

Note(s): The checkmarks (☑) in the “Current Study” column indicate the attributes explicitly examined in this study. These attributes are central to the study’s analysis and findings. The terms in the “Contribution” column include *theoretical extension*, which refers to the introduction of new attributes or perspectives not previously explored in the literature on conversational (voice) commerce, as well as *theoretical generalizability*, which indicates that this study confirms or replicates findings from previous studies, showing that these attributes are also covered and found to be relevant in this study. With this understanding, the table shows that this study advances the understanding of conversational (voice) commerce by integrating and extending key attributes across consumer, product, service and outcome categories, where it introduces novel attributes such as “perceived relative advantage,” “service complexity,” “brand familiarity” and “multichannel integration,” which were not previously examined (i.e. theoretical extension), while also reaffirming established attributes like “privacy concerns” and “user familiarity” (i.e. theoretical generalizability). This dual approach provides a more comprehensive framework for future research on conversational (voice) commerce

Source(s): Authors’ own compilation

identification and classification of relevant constructs by specifying precise interrelationships, thereby enriching scholarly understanding and setting the stage for future empirical investigations. Understanding these attributes is not merely academic but also essential for firms to optimize their use of voice assistants to enhance consumer engagement and satisfaction, and by extension, improve their competitive positioning and drive sales in an increasingly digital marketplace. Without this knowledge, firms risk misaligning their voice-commerce strategies with consumer preferences and usage patterns, leading to suboptimal service delivery, missed opportunities for engaging consumers effectively, and shortfalls in fully harnessing the value generated by voice commerce.

This study begins by asking the research question “What key service attributes, service provider attributes, and consumer attributes influence purchase intentions in voice commerce?” (RQ₁) and then follows up with the research question “How does the interplay between these attributes influence purchase intentions in voice commerce?” (RQ₂) to deliver both breadth and depth in insights. To comprehensively address these research questions, it is essential to consider the evolving landscape of voice commerce. As voice commerce continues to evolve and dominate e-commerce (Lim *et al.*, 2022), understanding the various attributes influencing consumer behavior becomes paramount (Lim *et al.*, 2023). Despite extensive research focused on its technological attributes, a significant gap remains regarding the attributes of the service and the service provider. This gap is underscored by the *Journal of Service Management*’s call for a special issue on the “rise of voice conversation capabilities in smart service systems.” In recognition of this gap, we conducted in-depth interviews with both service providers and consumers, with the goal of uncovering a comprehensive perspective of the attributes that sway purchase intentions in voice commerce. This approach distinguishes the present study from prior ones, which have typically focused on individual attribute categories in isolation (Lim *et al.*, 2022), resulting in less comprehensive insights.

In addition, while recent studies indicate that consistent utilization of conversational agents can enhance a brand’s image (Hernández-Ortega *et al.*, 2022; Rzepka *et al.*, 2022), the present study is distinctly centered on third-party providers delivering services via voice assistants. This focus is critical because these external providers must ensure that their offerings can seamlessly integrate within platforms they do not control, thereby posing distinct challenges that remain underexplored in the existing literature. Recognizing the scant research dedicated to the attributes of both services and service providers in voice commerce, the present study’s approach aligns with Braun and Clarke’s (2006) and Lim’s (2025) recommendations for an inductive research methodology. Through in-depth interviews with service providers and consumers, this study identified novel attributes relevant to three critical categories: the service, the service provider, and the consumer. These findings reveal the key attributes that shape purchase intentions in voice commerce and spotlight interaction dynamics between these attribute categories. Therefore, this study endeavors to enrich the nascent field of voice commerce by shedding light on these attributes, which mold consumer behavior toward purchasing via voice commerce.

The rest of this article is structured as follows: Subsequent to this introduction, an extensive review of the literature pertaining to voice commerce is pursued, which reveals precedents influencing diverse consumer behavior. Following this literature review, the research methodology is articulated, which encapsulates both data acquisition and its subsequent analysis. A detailed explanation of the findings is then presented. Subsequently, the conceptual framework that has emerged from this exploration is dissected, and its implications for both academia and industry are discussed. The article concludes with a reflection on the limitations inherent to the study while outlining potential avenues for future scholarly endeavors.

2. Literature review

2.1 Voice commerce

Voice commerce represents a two-sided market where voice assistants — such as Amazon’s Alexa, Apple’s Siri, and Google Assistant — mediate interactions between buyers and sellers (Rabassa *et al.*, 2022). A voice assistant is a software-based dialogue system that can be accessed via smartphones or speaker devices (e.g. Amazon’s Echo) and is designed for voice-based interactions with its user (Guzman, 2019; Hoy, 2018; Kraus *et al.*, 2019). The backend technology powering voice assistants relies on AI systems that use NLP in combination with other voice technologies like speech recognition, voice identification, text-to-speech, and speech synthesizers (Galanxhi-Janaqi and Nah, 2004; Kraus *et al.*, 2019). Hence, these artificial agents can interpret commands, engage in appropriate actions, gather information (e.g. checking the weather), execute specific tasks (e.g. activating the air conditioner or coffee maker), and even facilitate product purchases (Rabassa *et al.*, 2022).

Early research in human–computer interaction (HCI) and computer-mediated communication (CMC) provides a foundational understanding essential for the subsequent business applications of voice assistants. Specifically, HCI studies explored the effectiveness of speech- and text-based communication modes, revealing that while text-based interactions offered greater efficiency (Le Bigot *et al.*, 2004, 2007), speech-based modes provided a more natural form of human communication (Novielli *et al.*, 2010), surpassing even visual interfaces involving facial expressions and body language (Kock, 2004). As a result, voice-based interfaces are particularly valuable in contexts that require problem-solving or the exploration of solutions (Krämer *et al.*, 2009), as they uniquely enable hands-free, real-time dialogue through spoken interactions. Unlike graphical or text-based user interfaces that require visual attention and manual interaction, voice-based interfaces allow users to perform tasks spontaneously, especially in situations where reading or typing is impractical (e.g. driving or multitasking). This advantage facilitates iterative, conversational exchanges, which significantly reduce cognitive load and accelerate decision-making during problem-solving tasks. Nonetheless, the inherent reliance on auditory cues exclusively constrains voice interfaces from effectively conveying detailed or comparative information, thus making them less suitable for highly complex or visually intensive tasks. Recognizing these specific strengths and shortcomings enables firms to accurately identify contexts where voice commerce solutions provide maximum value. Aligning voice-based technologies with scenarios in which they naturally excel, while acknowledging circumstances where visual or detailed information is essential, allows firms to enhance consumer engagement, optimize service delivery, and effectively leverage the unique benefits offered by voice commerce (Chattaraman *et al.*, 2019; McLean *et al.*, 2021; Moriuchi, 2019).

Early proponents of multichannel e-commerce have also suggested the potential of voice commerce to reduce call-center operating costs and improve customer service (Galanxhi-Janaqi and Nah, 2004). Much of the early research on voice commerce focused on the effects of text-to-speech technology on consumer satisfaction and trust in customer service (Chang and Jang, 2009; Qiu and Benbasat, 2005). However, the accuracy of speech recognition remained quite low until the recent development of sophisticated algorithms and AI, which have allowed users to engage in natural and complex dialogues with voice assistants, drastically expanding the scope of voice interfaces for commercial applications (Chung *et al.*, 2017; McTear *et al.*, 2016).

Interestingly, the potential of voice commerce is not being leveraged solely by providers of voice assistants (like Amazon or Google) but also by third-party firms that develop software functionalities—called Skills for Amazon Alexa and Actions for Google Assistant—that can be downloaded onto the voice assistants (Bahmani *et al.*, 2022; Sabir *et al.*, 2022). These functionalities enable customers to receive services offered by third-party firms through the voice interface of the voice assistant, making voice commerce a multi-actor context involving the voice assistant, the service provider, and the consumer. Voice functionalities are enabling service providers to partake in novel “service encounters,” where voice assistants augment or even replace the role of service employees (Kim *et al.*, 2018; Larivière *et al.*, 2017). Thus, voice commerce is now defined as a subset of conversational commerce, which is a subset of e-commerce, where voice technologies are used to facilitate, execute, and process business transactions (Kraus *et al.*, 2019).

The subsequent sections offer an in-depth review of attributes tied to various facets related to voice assistant adoption, consumer behavior, as well as service and service providers in the context of voice commerce.

2.2 Voice assistant attributes and adoption

Research has primarily focused on the attributes influencing the use of voice assistants for e-commerce, often leaning on technology acceptance and use models (Davis *et al.*, 1989;

Venkatesh *et al.*, 2003). Their adoption spans various domains, including content marketing (Reisenbichler *et al.*, 2022), interactive advertising (Park *et al.*, 2022), hospitality and tourism (Buhalis and Moldavska, 2022; Cao *et al.*, 2022; Fan *et al.*, 2022; Jiménez-Barreto *et al.*, 2023), logistics and transportation (Hsiao and Chang, 2019), retail shopping (Aw *et al.*, 2022; Kautish *et al.*, 2023), and service engagements (Malodia *et al.*, 2023). Noteworthy, the conversational interactions users have with voice assistants significantly enhance customer experience and wellbeing (de Oliveira *et al.*, 2023; Kang and Shao, 2023) while current studies centered on online shopping have explored the impact of using voice assistants on facets of consumer behavior, such as brand engagement, patronage, purchase intention, satisfaction, and loyalty (Berriche *et al.*, 2022; Chattaraman *et al.*, 2019; King *et al.*, 2022; McLean *et al.*, 2021). These studies underscore that due to the conversational nature of interactions with these agents, users find them intuitive and valuable for brand engagement and online shopping tasks (Chattaraman *et al.*, 2019; McLean *et al.*, 2021; Moriuchi, 2019), wherein their perceived usefulness encourages customer engagement, subsequently amplifying customer loyalty (McLean *et al.*, 2021; Moriuchi, 2019).

Relying solely on auditory and verbal interactions with voice assistants, however, may impose cognitive strain on users, demanding more effort to comprehend and interpret the agent's feedback (Berriche *et al.*, 2022). Yet, the recent technological evolution has ushered in voice assistants integrated with screens, allowing users to also utilize their touch and visual senses, thereby easing the overall cognitive load (Balakrishnan *et al.*, 2024). Notable examples encompass devices like Amazon's Echo Show and Google's Nest Hub. Regardless of screen integrations, these agents typically adopt human names (e.g. Alexa, Siri) and communicate using human-like voices. Such anthropomorphic traits offer both functional and pleasure-driven benefits to users—key drivers for voice commerce adoption (Aw *et al.*, 2022; Malodia *et al.*, 2024; Rzepka *et al.*, 2020). Beyond enhancing adoption and effectiveness, anthropomorphism fosters a sense of social presence in users, which makes them feel as if they are interacting with a human-like entity (Fernandes and Oliveira, 2021; Guzman, 2019; Lee, 2004; Thellman *et al.*, 2016; van Doorn *et al.*, 2017). This perception frames voice assistants as helpful, proficient, and intelligent, thus increasing their overall appeal (McLean *et al.*, 2021; van Doorn *et al.*, 2017). Moreover, services provided by such anthropomorphic agents are perceived as more responsive, appealing, and personalized to individual needs (van Doorn *et al.*, 2017).

The quality of interaction with voice assistants is further heightened when they exhibit socially acceptable behaviors and emotions (Fernandes and Oliveira, 2021). A dialogue style that is more informal and relationship-driven fosters deeper trust and customer loyalty compared to a more rigid, task-focused communication style (Chattaraman *et al.*, 2019). The agent's interactivity is pivotal for voice commerce as it diminishes perceived risks and elevates the social presence, which, in turn, influences the customer's intent to utilize these agents for online shopping (Lee *et al.*, 2022).

It is worth noting that extant literature has extensively investigated the technological attributes of voice assistants, particularly anthropomorphism, interactivity, and usability, highlighting how these attributes influence consumer engagement and satisfaction (Berriche *et al.*, 2022; McLean *et al.*, 2021; Moriuchi, 2019). Although these technological attributes provide foundational insights into voice commerce, the present study intentionally shifts the analytical lens toward attributes less examined yet equally critical—the attributes of the services themselves and those of service providers. This strategic shift is justified by the unique attributes of voice commerce as a multi-actor service encounter, wherein the nature and complexity of services, the providers' brand familiarity, and their capability for cross-channel integration critically determine consumer willingness to transact via voice. Through explicitly emphasizing these underexplored attributes, this study complements existing research by extending theoretical discourse beyond technological acceptance models and into the larger, multi-actor domain of voice-based service delivery.

2.3 Consumer attributes and adoption of voice commerce

Engaging with voice assistants, users might encounter psychological obstacles rooted in their values, needs, past experiences, and functional barriers relating to their perceptions about the effort and ease associated with using these agents (Berriche *et al.*, 2022). Recent research, in light of these barriers (Beeler *et al.*, 2022), has segmented conversational agent users into four distinct groups:

- (1) *Active resistant users* who consider the conversational agent as misaligned with their needs and, despite finding it easy to use, opt not to engage with it.
- (2) *Passive resistant users* who perceive the conversational agent as mismatched with their needs and difficult to operate.
- (3) *Hedonistic adopters* who recognize the conversational agent's alignment with their needs but deem it complicated, hence they utilize it for elementary tasks.
- (4) *Utilitarian adopters* who recognize the conversational agent both aligned with their needs and user-friendly, extending their usage to regular purchasing.

When interacting with firms, consumers might either expect firms to genuinely prioritize their well-being or might lean toward a more transaction-based interaction (Clark and Mils, 1993). Those with a communal orientation would likely expect consideration and warmth from a voice assistant. This means that an agent's social presence enhances its perceived warmth as well as the attractiveness, adaptability, and receptivity of the services provided (van Doorn *et al.*, 2017). In contrast, exchange-oriented consumers would anticipate the agent to exhibit competence and expertise. This suggests that an agent's social presence amplifies its perceived proficiency. In addition, consumers well-versed with technology view voice assistants as more adept and helpful, with services perceived as more enticing and personalized (Kendall *et al.*, 2020; van Doorn *et al.*, 2017).

Relational aspects, such as trust and rapport between the user and the agent, are deemed pivotal for the agent's adoption (Fernandes and Oliveira, 2021; Hasan *et al.*, 2021). Specifically, within voice commerce, consumer trust in the agent can influence choices, often leading them to opt for default product suggestions and shaping their purchase satisfaction (Mari and Algesheimer, 2021). Moreover, external societal influences, or the conviction that acquaintances and peers would commend their usage of voice assistants, can enhance user engagement, which, in turn, strengthens brand loyalty (Moriuchi, 2019).

Concerning risks in voice commerce, research has identified potential pitfalls like bias, privacy, and security (Rzepka *et al.*, 2020), alongside the possibility of overreliance or compulsive behavior stemming from agent use (Ramadan, 2021). There is a perception that voice assistants could hinder product comparison by favoring their parent brand or affiliate brands, resulting in a potentially skewed product recommendation (Rabassa *et al.*, 2022). Such biases could lead consumers to sense unfairness, especially if their preferences diverge significantly from the agent's suggestions (Dash *et al.*, 2022). The underlying technology, which often involves transmitting voice commands to cloud servers, raises privacy and security concerns (Bolton *et al.*, 2021; Renz *et al.*, 2022). Attributes like trust and privacy concerns have been observed to influence users' overall voice commerce experiences, often mediating the effects of their inherent traits (Bawack *et al.*, 2021; Hasan *et al.*, 2021).

2.4 Service and service provider attributes in voice commerce

When utilizing voice assistants, consumers are increasingly prone to being swayed by sellers and their offerings. This vulnerability arises due to the rich personal data and purchase behavior logged by sellers when transactions are routed through these voice assistants (Dellaert *et al.*, 2020). Consequently, it is crucial to scrutinize the characteristics of sellers and their offerings in relation to consumer behavior in voice commerce. Notably, this dimension

remains under-researched with a striking absence of focus on the attributes of the seller or service provider and service offerings in the context of voice commerce.

Consumer behavior in e-commerce varies significantly based on product and service characteristics, particularly the tangibility or intangibility of the offering and the level of complexity or involvement required in the consumer's decision-making process (Lovelock, 1983; Phau and Meng Poon, 2000; Vijayasathy, 2002). Tangible products, defined by physical attributes, often necessitate visual inspection or tactile assessment—making voice-based interfaces less effective when consumers must closely evaluate features (e.g. color, style, texture), as is typically the case with clothing or electronics. In contrast, intangible or routine services (e.g. subscriptions, repeat orders) are better suited to voice commerce because they demand fewer visual confirmations and lower cognitive effort. While existing research has begun exploring how these differences shape consumer behavior (Sharma *et al.*, 2024), substantial gaps remain. Early evidence suggests that consumers gravitate toward voice assistants for low-involvement, habitual purchases—such as household consumables—due to the convenience and immediacy of spoken commands (Tassiello *et al.*, 2021), whereas non-transactional tasks (e.g. basic information searches) tend to be driven by contextual needs and social norms (Malodia *et al.*, 2023; Moriuchi, 2019). High-involvement or visually complex products (e.g. electronics, luxury items), in contrast, frequently require detailed comparisons and visual inspections, making purely auditory interactions insufficient (Dellaert *et al.*, 2020). Similarly, complex or high-stakes services—such as financial consulting or personalized healthcare—often discourage consumers from completing transactions solely through voice, instead preferring channels offering more comprehensive information and personalization (Malodia *et al.*, 2023).

In terms of outcomes resulting from service delivery through voice assistants, previous studies demonstrate that platforms—whether apps, stores, or websites—featuring these agents are perceived as more engaging, dynamic, and user-friendly, which strengthens customer loyalty (Moriuchi, 2019; van Doorn *et al.*, 2010). Although service offerings facilitated by these providers may appear more appealing and customizable, relatively few investigations focus on whether these favorable perceptions translate into purchases (Berriche *et al.*, 2022; Malodia *et al.*, 2023; Tassiello *et al.*, 2021). Moreover, while a handful of studies explore how voice assistant attributes and consumer attributes interact (Malodia *et al.*, 2023; Moriuchi, 2019), the multi-actor nature of these service encounters, encompassing consumers, service providers, and voice assistants, remains underexplored. Some researchers have called for deeper inquiries into these interaction effects (Grewal *et al.*, 2022; Tassiello *et al.*, 2021; van Doorn *et al.*, 2017), which suggests a gap in understanding how service-side attributes (e.g. service complexity, service consumption phase, brand familiarity, multichannel integration) intersect with consumer attributes to drive purchases in voice commerce.

Our literature review highlights that research frequently proposes certain offering- and seller-related characteristics as strategic recommendations, yet seldom clarifies *why* and *how* these attributes influence decision-making in a voice-driven context. Our literature review highlights a twofold gap: (1) insufficient examination of how service-related attributes interact with consumer attributes to shape behavior in voice commerce, and (2) limited attention to purchase intention as a proxy of actual purchase as a distinct outcome in these settings. Table 1 reveals a disproportionate focus on consumer traits and voice assistant (technological) attributes, whereas service- and service provider-specific attributes—likely pivotal in determining perceived value and viability—have remained comparatively neglected. Although one might assume that a lack of research indicates low importance, we argue that the opposite is true here: the unique interplay of service providers' brand familiarity, multichannel integration, service complexity, and service consumption phase in auditory-only transactions demands closer scholarly scrutiny, especially given the potential for misalignment when such attributes are overlooked.

Addressing the aforementioned gap holds significant theoretical and managerial relevance. Theoretically, concentrating solely on consumer or voice assistant attributes obscures the multi-actor ecosystem inherent in voice commerce, hindering a full understanding of purchase

drivers. Through examination of service and service provider attributes, existing frameworks can be refined to encompass the understanding of how these attributes converge to influence purchase intentions among consumers. Managerially, ignoring these underexplored attributes can undermine strategic decision-making, particularly for firms offering complex or intangible services. Considering that voice commerce often functions as a dual-sided market, in which service providers list their offerings for potential buyers through AI-driven channels (Rabassa *et al.*, 2022), a deeper grasp of service and service provider attributes can guide critical design choices—ranging from brand positioning to platform integration. Hence, this study explicitly addresses these shortcomings by focusing on the interplay of service and service provider attributes in shaping purchase decisions (Figure 1), thereby extending prior research beyond consumer or voice assistant attributes alone.

3. Methodology

3.1 Approach

Extant research on voice commerce has predominantly employed conceptual, empirical, or experimental approaches to inform the development of voice-based systems (e.g. Dellaert *et al.*, 2020; Galanxhi-Janaqi and Nah, 2004; Le Bigot *et al.*, 2004; Novielli *et al.*, 2010; van Doorn *et al.*, 2017), many of which sought to establish or validate theoretical models (e.g. Baier *et al.*, 2018; Berriche *et al.*, 2022; Hernández-Ortega *et al.*, 2022; McLean *et al.*, 2021). Given that our study aims to explore the interplay among service attributes, service provider attributes, and consumer attributes within voice commerce—a phenomenon that remains underexplored—we chose to adopt an inductive approach using grounded theory (Charmaz, 2006; Gilbert and Stoneman, 2015; Glaser and Strauss, 2017; Urquhart *et al.*, 2010). This approach enables a deep exploration of the contextual and socially constructed dimensions inherent in interactions between consumers and service providers who leverage voice

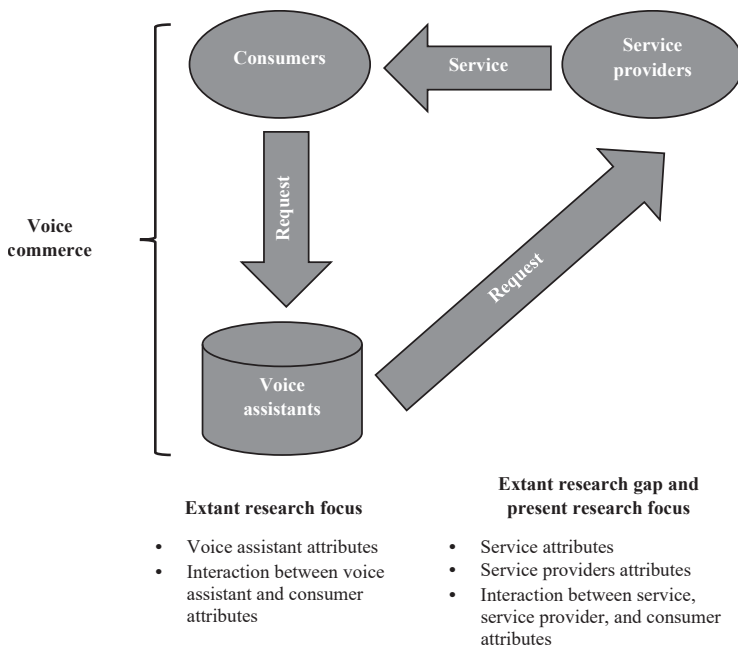


Figure 1. State of voice commerce research. Source: Authors' own illustration

assistants in e-commerce. Such an approach is especially suited to emerging fields such as voice commerce, where traditional quantitative (e.g. confirmatory, experimental) methods might overlook the dynamics of exchanges and interactions (Lim, 2025). Although technology acceptance has a well-established history in e-commerce (Chatterjee *et al.*, 2002; Molesworth and Suortti, 2002) and information systems (Davis *et al.*, 1989; Venkatesh *et al.*, 2003) research, the field of voice commerce remains nascent and rapidly evolving (Lim *et al.*, 2022), wherein its profound disruption of purchase decision-making and the limited number of exploratory studies necessitate an approach that can capture these complexities, taking into account voices from the ground. Our goal is, therefore, to construct a conceptual model that derives insights from a comprehensive depiction of discerned attributes and their interrelations, consistent with grounded theory (Wiesche *et al.*, 2017) [1].

A targeted analytical scope was adopted, focusing exclusively on attributes of services, service providers, and consumers, while deliberately omitting voice assistant attributes from the analysis. This decision is justified by the extensive existing literature already providing rich insights into voice assistant attributes (Table 1) and by the critical need to illuminate the comparatively underexplored attributes associated with other actors involved in voice commerce. Although previous studies have examined consumer attributes, revisiting them here is necessary because their significance may shift or intensify in interactions uniquely mediated by service and service provider attributes within voice commerce. Concentrating on these neglected yet essential dimensions thus enables the identification of novel insights regarding the dynamics that distinctly shape consumer perceptions and purchase intentions within voice commerce. This targeted approach not only offers a valuable theoretical extension to prior research but also provides practical guidance for optimizing service design and platform integration strategies in this emerging field.

3.2 Context

Our research is anchored in the Mexican market, a setting where leveraging computers and smartphones for e-commerce transactions has become both prevalent and normalized. In this ecosystem, prominent online retail giants like Amazon are evident, complemented by a myriad of smaller e-commerce entities. Although the marketplace is competitive, owing to its vast potential, vying solely on the basis of price has become untenable, especially in the face of the large players' streamlined operations. Consequently, the only viable strategy left for new entrants is to distinguish their offerings, or in others, to engage in product differentiation.

Voice commerce emerges as a potential solution to offer a purchase experience that mirrors verbally requesting a family member at home to procure an item from a nearby store. Yet, the process of making a purchase in voice commerce diverges considerably from conventional e-commerce, primarily due to the lack of visual feedback. This requires substantive re-education, moving away from the now-established e-commerce transaction blueprint. Past studies have repeatedly evidenced that younger demographics exhibit a heightened tendency to embrace novel technologies (Lim *et al.*, 2023), particularly when considering low-stakes product categories (Martínez-Domínguez and Mora-Rivera, 2020). Consequently, our study centers predominantly on this younger cohort of online shoppers, individuals who seamlessly integrate smart devices into their daily routines.

Our study concentrates exclusively on voice assistants that have achieved widespread smartphone integration. Our focus thus converges on agents such as Amazon's Alexa, Apple's Siri, and Google Assistant. While the breadth and depth of voice commerce functionalities varied among these agents, each presents basic voice commerce capabilities for their user base, spanning connected, smart devices.

3.3 Data collection

Our study is situated in Mexico, a developing digital economy with a rapidly growing internet and e-commerce market. The choice of the Mexican market is underpinned by attributes such

as market growth, technological adoption, and cultural aspects that make it an ideal setting for this study. This market has witnessed significant growth and transformation in e-commerce, driven by both private and public endeavors, mirroring the development of digital economies observed in other early adopters such as the USA (Palacios, 2003). In addition, cultural attributes play a crucial role in e-commerce adoption, and Mexico offers a representative example of a developing economy with a diverse population and a blend of traditional and modern values. This diversity allows us to explore the interplay between cultural attributes and new technology adoption. The Mexican market's familiarity with e-commerce (Datta, 2011; Larios-Hernandez, 2024) sets a precedent for addressing voice commerce-specific challenges by leveraging existing digital infrastructure and consumer behaviors, making it a suitable setting for such studies.

For data collection, we employed a multifaceted methodology to encapsulate the perspectives of various stakeholders within voice commerce. Initially, we engaged in in-depth interviews with 15 business developers affiliated with e-commerce platforms in Mexico. This approach sought to explore their motivations steering the design and establishment of their voice commerce ventures. Unlike platform designers or IT managers, e-commerce platform business developers provide a holistic view, encompassing both strategic and operational aspects across diverse channels of their organizations. We explored their expectations concerning customer usage of their platforms and their strategy pertaining to the conception, development, launch, and expansion of this innovative business venture. Our preference for business developers emanated from their proximate interactions with customers and a comprehensive grasp of challenges customers encounter in routine e-commerce activities. While none of our participants' firms perceived voice commerce as a direct e-commerce substitute, insights gleaned from e-commerce challenges proved invaluable for voice commerce design and development.

Next, we conducted in-depth interviews with 18 voice commerce users in Mexico, encompassing a spectrum of online shopping experiences from elementary reservation inquiries to tangible product acquisitions. These dialogues enriched our understanding of user motivations prompting transactions in specific scenarios and impediments in others. Given the innately personal and pioneering nature of chat and voice-driven commerce, innovative data gathering techniques were mandated, enabling users to candidly discuss experiences with their peers in a naturalistic setting.

To deepen our understanding of the adoption trajectories and barriers encountered by regular voice commerce users, we conducted six detailed triads by re-engaging previously interviewed users. In this context, triads refer explicitly to small, three-person focus groups—an approach well-established in qualitative disciplines such as sociolinguistics (Schiffrin, 1984) and nursing (Kendall *et al.*, 2009). Triads promote dynamic yet intimate discussions, which allow participants to openly articulate, validate, or challenge one another's experiences and viewpoints. This peer interaction facilitates richer, more authentic insights regarding shared attitudes and collective behaviors compared to individual interviews or larger focus groups. In particular, triads proved especially advantageous for examining voice commerce, as their intimate setting encouraged participants to comfortably share personal experiences, express reservations, and mutually validate perspectives about interactions with voice assistants—nuances that might otherwise remain undisclosed in alternative methodological formats.

The interviews were guided by an interview protocol that ensured consistency while allowing flexibility to explore emerging themes. The main topics covered in the interviews included participants' experience with voice assistants and voice commerce, perceived benefits and challenges, attributes influencing adoption and use, strategies for designing and implementing effective solutions (for business developers), and future expectations and concerns. Appendix Table A1 presents background information of the interview participants, including their roles, industries, experience levels, and interview durations. The interviews with business developers lasted between 60 and 120 min (average: 90 min) while user

interviews ranged from 45 to 80 min (average: 70 min). The data collection process spanned four months. [Tables 2 and 3](#) below provide a more granular overview of our sample and data collection strategy.

3.4 Data analysis

The collected written materials and interview transcripts underwent rigorous evaluation. Following transcription, qualitative data were analyzed using a grounded theory-based coding procedure consistent with established methodological practices in qualitative research ([Corbin and Strauss, 2008](#); [Gioia et al., 2013](#); [Lim, 2025](#); [Saldaña, 2015](#)). We employed open coding to systematically analyze each data segment for its inherent meaning and assigning initial conceptual labels reflecting participants’ narratives ([Charmaz, 2006](#); [Corbin and Strauss, 2008](#); [Lim, 2025](#); [Saldaña, 2015](#)). Throughout this analytical phase, we consistently compared individually coded segments across different transcripts and triads—a practice known as constant comparative analysis—to refine and verify emerging concepts ([Lim, 2025](#)). This iterative coding process was facilitated using the NVivo v.12 software. Subsequently, initial codes that shared conceptual similarities were grouped under higher-order conceptual categories—referred to as thematic coding—to identify broader, meaningful patterns ([Gioia et al., 2013](#); [Miles and Huberman, 1994](#)). Any discrepancies in code interpretation among the research team were addressed through collaborative discussions, thus ensuring alignment and conceptual clarity. Our comprehensive inductive coding strategy aligns with the established guidelines by [Corbin and Strauss \(2008\)](#). A detailed breakdown of our coding classifications is provided in [Appendix Table A2](#).

4. Results

Our analysis of the interview data revealed several key attributes and themes that shape the adoption and success of voice commerce. While attributes, such as perceived ease of use and perceived usefulness, have been previously identified in the literature on conversational agents (e.g. [Rzepka et al., 2020](#); [Zierau et al., 2023](#)), our study provides new insights into their specific manifestations and implications within the context of voice commerce. In addition, we identify novel attributes and themes that emerge from the unique perspectives of business developers and users, highlighting the importance of considering multiple stakeholder views in understanding voice commerce. Our findings suggest that the adoption of voice commerce for procuring services is shaped by three fundamental elements: service attributes, service provider attributes, and consumer attributes. We dive into each in detail below.

4.1 Service attributes

4.1.1 Service complexity. Service complexity refers to the difficulty and variability associated with delivering a service, which can significantly influence a consumer’s choice of interaction channel and intention to purchase. This complexity encompasses not only the type of service but also how the service is delivered. For example, depending on the tangibility of the service,

Table 2. Sample description

Technique	Sample	Description
Interviews	15	Mexican business developers from e-commerce service providers
	18	Mexican voice assistant users (both men and women) between 25 and 30 years of age who have extensive online shopping experience and have access to and prior experience of using voice assistants like voice assistants as a purchasing channel
Triads	6	Mexican voice assistant users having extensive voice commerce shopping experience

Source(s): Authors’ own compilation and explanation

Table 3. Data collection

Technique	Description	Execution
Triads	The triad method, as a data collection technique, stands distinct in its approach by harnessing the synergies of small participant groups, typically consisting of three individuals. These individuals, sharing common interests or perspectives, provide a focused lens on the subject at hand. Guided by an adept moderator, this triad navigates a series of topics through fluid and organic discussions. This open-ended conversation format affords a depth and nuance that is often challenging to capture through traditional survey methods One of the standout attributes of the triad approach is its ability to mine rich, qualitative insights. As participants articulate their views, share experiences or respond to others, the subtleties of their perspectives emerge, thereby providing a textured understanding often missed in quantitative research. The triad's intimate setting fosters an environment of trust, which encourages participants to discuss topics more deeply, which, in turn, reveals layers of sentiment, belief and perception Furthermore, the dynamic of a triad—the interplay between its three participants—can lead to emergent insights. As participants resonate with, build upon or even counter the views of their peers, new dimensions of a topic can surface. This interaction often uncovers nuances that might remain hidden in individual interviews Moreover, triads offer researchers a unique vantage point to understand consumer perspectives. In the evolving landscape of market research, where capturing the authentic voice of the consumer is paramount, triads act as a conduit. They bridge the often-gaping chasm between consumers and firms, illuminating the former's desires, needs, pain points and aspirations	Participants were probed about their past experiences with voice assistants and e-commerce, which, in turn, shed light on potential incentives and hurdles tied to adopting this emerging technology. Each interview session, conducted face-to-face, spanned just over two hours, guided by a semi-structured format. Subsequent to digital recording, these interactions were comprehensively transcribed. Interviewees were afforded the opportunity to review these transcripts, all of which received their endorsement
In-depth interviews	Posing questions about personal experiences, community interactions or specific systems is a fundamental data collection technique. This approach seeks to harvest rich, qualitative insights about a particular topic. Such an inquiry captures the in-depth dynamics and nuances often overlooked by quantitative methods. Anchoring research in lived experiences and personal narratives enables this method to not only offer depth but also foster a holistic understanding of the issue at hand	We conducted a semi-structured interview to glean insights from professionals in the e-commerce services sector. With the participants' consent, the interview was recorded and subsequently transcribed for in-depth analysis

Source(s): Authors' own elaboration

a consumer's preference for one channel over another might shift. Both business developers and users acknowledged that certain types of products and services, such as those that are highly visual or require extensive comparison, may be less suited to voice commerce. As one business developer explained, "We have to be strategic about which products we push through conversational channels. Some things [services] just don't translate well to voice or text-based interactions" (BD9, Transportation industry). Users also expressed hesitation about making high-stakes purchases, such as expensive electronics or financial products, through voice assistants, with one noting, "For big-ticket items, I still prefer to do my own research and talk to a human before making a decision" (U11, Regular user). The decision-making process to request, execute, and obtain services is tied to the service type. An interviewee illustrated this by saying, "For a restaurant reservation and you know what you're going to order [I might just say] make my usual reservation and order my usual plate" (U2, Novice user). Yet, for high-involvement product categories, the decision is not as straightforward. Another interviewee mentioned, "If it's a plane ticket, a lot of things can go wrong" (U6, Regular user).

We observed that for services impacting an individual's personal appearance or well-being, like haircuts, travel, dining or medical attention, users would typically order via voice commerce if they had past experience with the service provider. Without this familiarity, users leaned more toward just researching with a voice assistant. However, for generic services not tied to an individual's personal image or body, the feedback was more favorable toward voice commerce. One participant remarked, "For something like Netflix, there's little room for error. Whether it's three screens or five, there's not much else to it" (U11, Regular user), while another stated "I'd use it for Coursera, but for a physical university, I'd research online, consider my options, then maybe make a call or visit the campus in person" (U9, Experienced user).

Service complexity, therefore, plays a crucial role in determining the suitability of voice commerce for different types of services. Firms, therefore, need to carefully consider the nature of the service when designing and implementing voice commerce solutions to ensure they meet consumer needs and preferences effectively.

4.1.2 Service consumption phase. Each phase of service consumption—from pre-purchase decisions, the actual service encounter, to post-encounter activities—can unfold across varied channels. During the pre-purchase phase, while there is an assumption that users might favor initiating service searches using a voice assistant, our findings indicate hesitation in using voice search for unfamiliar or complex services, as previously revealed. This reluctance stems from voice recognition hurdles such as tone, pace, accents, and so forth. Even for pre-purchase actions like setting up an account, users pointed out potential complexities in the process. Nevertheless, they felt at ease ordering frequently used services (e.g. hailing a cab) via a voice assistant. One participant articulated, "For routine payments or straightforward transactions, I'm fine with just using my voice. I prefer to avoid complications or scenarios where I'd need visual confirmation" (U11, Regular user). These findings align with [Lemon and Verhoef's \(2016\)](#) customer journey framework, which conceptualizes the customer journey as a series of interconnected phases—pre-purchase, purchase, and post-purchase—each involving distinct consumer behaviors and touchpoints. The pre-purchase phase is particularly influenced by information search and evaluation, where voice assistants may serve as facilitators, yet are limited by their inability to convey detailed visual information, impacting trust and consumer confidence. This theoretical perspective underscores why consumers may prefer traditional channels for complicated searches but find voice assistants adequate for routine inquiries.

However, for the same phase, a business developer noted: "Voice assistants can play a crucial role in guiding customers through their initial research and decision-making process. While they might not make the final purchase through voice, these interactions can significantly influence their choices" (BD7, Retail industry). This is consistent with [Howard and Sheth's \(1969\)](#) theory of buyer behavior, which outlines that consumer decision-making processes are shaped by external stimuli, including marketing information and social

influences. Voice assistants, despite being novel, act as a source of such stimuli, guiding consumer perceptions and preferences during the early stages of the decision-making process.

Barring a few exceptions, such as music subscriptions, the actual consumption of most services does not typically occur through a voice assistant. For the consumption phase, many users migrate to channels they deem more fitting. That said, they are often open to gathering more information or service reviews from the agent. This sentiment is encapsulated in one respondent's remark about "leveraging voice only where it feels appropriate" (U9, Experienced user) during the service experience. [Lemon and Verhoef's \(2016\)](#) customer journey framework supports this view, suggesting that the effectiveness of service interactions depends on aligning the right channels with the consumer's preferred touchpoints during the consumption phase.

In the post-service engagement phase, users expressed mixed feelings about using voice assistants. While a few users saw potential for quick feedback and issue resolution, others preferred traditional channels for more complicated follow-ups. One user noted, "For simple things like confirming my order arrived, I'd be happy to use a voice assistant. But if I had a complaint or needed to return something, I'd probably want to speak to a real person or use the app" (U7, Experienced user). A business developer echoed this sentiment, stating, "We see voice as a complementary channel for post-purchase support. It's great for quick checks and simple queries, but we still need to offer other options for more complex customer service issues" (BD3, Retail industry). These insights suggest that while voice commerce has potential in the post-service phase, its application may be limited to simpler interactions.

Clearly, the suitability of voice assistants varies across the different phases of service consumption. While users show hesitation in using voice for complex pre-purchase decisions, they are comfortable with routine tasks and post-service engagements. Although pre-purchase and post-purchase phases may not involve direct transactions, they are crucial components of the voice commerce ecosystem. These phases significantly influence consumer decision-making and overall satisfaction, impacting, in turn, future purchase behavior. For instance, pre-purchase interactions can shape consumer expectations and preferences while post-purchase engagement can affect brand loyalty and repeat purchases. This highlights the need for firms to strategically adopt and integrate voice commerce where it offers the most convenience and least friction for users, thereby ensuring a seamless and satisfying experience across all phases of service consumption.

4.2 Service provider attributes

Different voice assistants rely on varying backend service providers to facilitate commerce. For instance, while Amazon's Alexa primarily uses its proprietary distribution platform, Google Assistant, Apple's Siri, and others often rely on third-party service providers to handle tasks like hotel reservations (e.g. via [Booking.com](#)) or taxi bookings (e.g. through Uber). Interestingly, the distinction between in-house or third-party service provisioning was not a major attribute for consumers. Rather, their inclination to utilize a voice commerce platform was predominantly influenced by their familiarity with and trust in the service provider. Within this context, we spotlighted two critical attributes impacting their purchase intentions.

4.2.1 Brand familiarity. Brand familiarity encompasses the prior understanding and recognition a customer holds about a particular brand, product, or service. Hence, it is not exclusively about knowledge. Other elements contribute to this sense of familiarity, including the brand's visibility or recognizability. Noteworthy, brand familiarity can be distilled down to three core elements: awareness, past experiences, and influence.

Our data suggested a compelling link between users' familiarity with a brand and their propensity to engage with it via voice commerce. Users were markedly more inclined to transact with brands they had previously encountered on different channels. Their past experiences, thus, played a pivotal role in their decision-making process. Illustrating this, one participant shared, "If it isn't an established platform, I'd be hesitant. I would only be at ease

accessing services online from a recognized brand or platform” (U6, Regular user) while another remarked “I’d refrain from making a purchase or placing an order on any website, app, or platform unfamiliar to me” (U2, Novice user).

Furthermore, even without being a direct consumer of a particular brand, mere recognition could tilt the scales in its favor. This was particularly evident with luxury brands, where users inherently expected consistency in quality and experience across various sales platforms. As an interviewee articulated, “Brand reputation is crucial. Trust is pivotal. If you’re acquainted with and have confidence in a brand, you’re more inclined towards it, even if you haven’t directly transacted with it” (U14, Regular user).

From the business perspective, the essence of brand familiarity was not lost. Professionals were acutely aware of the hurdles voice commerce presented, especially when it came to forging a strong brand image. This was due to the inherent constraints of a non-visual medium. They expressed, “In our rollout phase, we’ve introduced only a limited selection of services on the voice commerce platform, in contrast to our expansive online offerings. The absence of a visual medium poses challenges for branding. Having a distinct brand imprint in potential customers’ minds can significantly lower the entry barriers for them” (BD4, Hotel industry).

These findings suggest that brand familiarity significantly influences consumers’ purchase intention in voice commerce. Users are more likely to transact with brands they recognize and trust, thereby highlighting the importance of strong brand presence across various channels. For firms overcoming the non-visual nature of voice commerce to establish a recognizable and trusted brand image is crucial for lowering entry barriers and enhancing user adoption.

4.2.2 Multichannel integration. Given that a service can be availed through an array of channels, such as voice assistants, mobile applications, or websites, the choice often hinges on a channel’s perceived benefits over its alternatives. Users typically weigh the merits of each channel before settling on one. One business developer elucidated the expectations from voice commerce, “Users anticipate that service providers will streamline and enhance the purchasing experience [via voice assistants]. It should not only be efficient and expedient but also have an edge over other mediums, positioning it as the primary choice. The seamless voice-based search and findability of services are [also] vital. This necessitates companies to optimize their web assets to ensure effortless recognition and access [by the voice assistant]” (BD5, E-commerce industry).

Many users articulated that voice assistants lacked the intuitiveness seen in apps or websites. As a result, they would prefer using voice assistants for certain stages of the purchase journey while deferring to conventional channels like websites for others. For service providers, this underscores the importance of adopting a cohesive multichannel strategy, especially in the interim. This sentiment resonates with the feedback from our interviewees:

[A voice commerce platform should] mirror each facet of the reservation process, akin to navigating through an app, website, or even engaging with a human assistant. It should feel organic and familiar (U9, Experienced user).

For purely online services, why would I deviate? The approach ought to be hybrid. I’d leverage it as an adjunct, complementing my main channel (U11, Regular user).

The necessity for seamless integration across multiple channels is paramount to providing a unified customer experience. Users expect consistency and continuity when transitioning between different platforms, such as starting a transaction on a voice assistant and completing it on a website. Service providers must ensure that their systems are interconnected and that user data flows smoothly across channels to facilitate this seamless experience.

4.3 Consumer attributes

4.3.1 Perceived relative advantage. Perceived relative advantage is defined as the extent to which an innovation is viewed as better than the product it supersedes, and it plays a pivotal role in the adoption rate of a new product (Rogers, 2003). This perspective hinges on

consumers' perceptions, which might not always align with the actual attributes of the product or service in question. This lens allows firms to gauge if consumers would truly prefer their offering over a competitor's. In the context of the current study, perceived relative advantage refers to the extent to which users view voice assistants as superior to traditional e-commerce channels regarding its ease of use, convenience, and efficiency. Our findings underscore a positive sentiment toward voice assistants. The predominant advantages spotlighted by users were the ease and speed of accomplishing specific tasks requiring minimal cognitive effort. Users further emphasized convenience and potential utility, contingent on the service context. Whereas, the business developers we interviewed illuminated the unique convenience offered by voice commerce, asserting: "This platform isn't poised to supplant e-commerce. In certain contexts, like routine FMCG acquisitions, it might progressively appear more advantageous compared to traditional channels . . . a sentiment reminiscent of what Amazon Dash tried to achieve" (BD1, E-commerce industry).

Although perceived relative advantage as a general construct is well established, our findings provide novel depth by highlighting specific dimensions uniquely relevant to voice-based interactions. Users emphasized that voice assistants significantly reduce cognitive and physical effort compared to traditional text-based searches or visual navigation, primarily because voice interactions eliminate manual input, visual attention, and complex screen interactions. These distinct advantages manifest particularly strongly in scenarios demanding multitasking or hands-free capabilities, such as driving or cooking, or among user groups with physical limitations—such as older adults or individuals with disabilities. For example, one user explicitly mentioned, "Given the challenges I face with typing, voice-based interactions remove barriers, [which allow me to experience] effortless online transactions" (U11, Regular user). These context-specific insights demonstrate that perceived relative advantage in voice commerce encompasses reduced cognitive load, enhanced physical convenience, and improved accessibility—dimensions largely overlooked in prior e-commerce literature that predominantly focuses on visual or tactile interfaces.

When taken collectively, these findings suggest that perceived relative advantage significantly influences consumers' intention to make a purchase through voice commerce. Therefore, understanding and leveraging these perceived advantages can enable firms to better position their voice commerce offerings to meet consumer needs and preferences, thus enhancing the likelihood of widespread adoption.

4.3.2 Perceived privacy risk. Perceived privacy risk encapsulates consumers' apprehensions about potential unpredictability and unfavorable outcomes tied to a purchase decision. This risk, while perceived, may not always be grounded in reality but is indeed present in the consumer's mind (Pathak and Pathak, 2017). Financial, performance, and service risks emerged as predominant concerns users grapple with, not only in traditional e-commerce but also in voice commerce. Touching upon financial risks, apprehensions stemmed from potential monetary losses due to transaction verification lapses and open access to voice assistants within homes. One individual voiced, "I hesitate to fully trust my conversational agent with transaction finalization. What if, for instance, my son unintentionally interrupts when I'm confirming a payment?" (U5, Experienced user). Another expressed concerns about privacy and security, "The thought of private conversations being exposed and potentially leading to blackmail or misuse is downright unsettling" (U11, Regular user).

Both business developers and users emphasized the need for voice assistants to provide accurate, reliable, and transparent information to build trust and encourage users to engage in commercial transactions. As one business developer noted, "Trust is the foundation of any successful voice commerce strategy. If users don't trust the agent, they won't trust the recommendations or the transactions" (BD1, E-commerce industry). Users echoed this sentiment, with one stating, "I need to know that the agent has my best interests in mind and isn't just trying to push products or services on me" (U3, Novice user).

Our analysis further reveals a notable tension concerning privacy issues between consumers and service providers in voice commerce. On one hand, consumers express

significant concern regarding the potential misuse or unintended capture of sensitive information due to continuous, unrestricted access of voice assistants within their homes. One user explicitly described these apprehensions, “My biggest worry is accidentally sharing private details—conversations in the background, sensitive financial data, or personal health issues. With voice assistants constantly listening, I fear unintended consequences and misuse of my data” (U8, Regular user). This perspective underscores a prevalent fear among users related to inadvertent exposure of highly sensitive personal information due to the constant auditory monitoring embedded in voice assistant technologies.

In contrast, business developers emphasize the commercial value of voice-based data collection, framing it as essential for providing personalized services, enhancing customer experiences, and improving convenience and efficiency. A business developer clearly articulated this perspective, “To remain competitive, we must rely on detailed consumer insights captured by voice assistants. Personalized services significantly boost engagement and conversions, and data analytics are essential to achieve this level of personalization” (BD2, Retail industry). This viewpoint emphasizes how privacy trade-offs directly link to business performance outcomes.

Juxtaposing these divergent views illuminates a critical tension inherent to voice commerce, that is, while convenience and personalization may drive consumer adoption, these same factors amplify consumer concerns regarding privacy risks. Consumers simultaneously value tailored interactions and express reservations about sharing extensive personal information through voice platforms, thus highlighting a critical managerial challenge: firms must balance personalization with privacy protections to foster consumer trust and sustained engagement. As succinctly expressed by another user, “I like the idea of personalized recommendations, but I’m not sure I want the agent to know everything about me” (U1, Novice user).

These findings show that perceived privacy risk significantly impacts user trust and engagement in voice commerce, thus affecting their intention to make purchases through voice assistants. Addressing these risks through robust privacy measures and transparent communication about data usage can help mitigate consumer concerns. Balancing personalization with privacy will be crucial for fostering the widespread adoption of voice commerce.

4.3.3 User familiarity. User familiarity refers to the degree of ease and comfort users experience when interacting with technology, shaped by their prior experiences and the intuitive quality of the interface. This familiarity is particularly critical in voice commerce, as users must depend primarily on auditory interactions rather than visual or textual cues. Greater familiarity, achieved through ease of learning, intuitive design, and habitual use, significantly reduces cognitive effort because users can rely on previously established mental models to interact more efficiently with unfamiliar interfaces (Agarwal and Karahanna, 2000). In this regard, familiarity enables users to experience more confident and seamless interactions that reap the benefits of voice-based environments. As an experienced user noted, “Once familiarized, it certainly streamlines the process, saving time and proving its efficiency” (U9, Experienced user). Similarly, another user observed, “After successfully navigating it a few times, my trust would be stronger. It’s like cultivating trust with an algorithm” (U11, Regular user).

Business developers similarly recognize that user familiarity is crucial for widespread adoption of voice commerce. According to one developer, “Drawing on our e-commerce acumen, we know that for customers to even try a new platform, it must promise an experience as smooth as other established retail avenues, so we try to keep our design simple and fluid” (BD9, Transportation industry). This highlights the importance of intuitive design and user-friendly interfaces that facilitate quick learning and habitual engagement.

Our findings underscore how the distinctive cognitive demands of voice-based interactions place user familiarity at the forefront of adoption. Unlike traditional e-commerce, which relies on visual cues and clear navigational markers, voice commerce requires users to process and

interpret auditory information in real time. This shift heightens the need for familiarity—defined as repeated, comfortable interaction patterns—because it lowers the cognitive burden associated with voice interactions. For instance, one regular user explained, “After successfully navigating it a few times, my trust becomes stronger—much like building trust with a reliable friend. If I can confidently predict how the assistant will respond, it significantly reduces uncertainty and makes me willing to use voice commerce more frequently” (U11, Regular user).

Similarly, business developers recognized that replicating familiar interaction cues reduces initial user hesitance. As one developer stated, “We consciously replicate familiar interaction patterns from our other digital channels, [allowing] a frictionless transition to voice. The absence of visual navigation demands intuitive, familiar auditory interactions, such as confirmation chimes, to prevent user frustration and cognitive fatigue” (BD9, Transportation industry).

Consequently, user familiarity stands out as a critical factor influencing purchase intentions in voice commerce. Unlike visually oriented platforms, voice commerce calls for carefully designed, cognitively effortless auditory interactions that capitalize on users’ established mental models. Strategically leveraging these familiarity dimensions can, therefore, meaningfully enhance adoption and sustained usage.

4.3.4 Social influence and normative pressures. Social influence and normative pressures refer to the impact that societal expectations and the behaviors of significant others have on an individual’s decision to adopt or reject a technology. This hinges on how perceptions of social acceptability and the actions of family, friends, and influencers shape user behavior (LaMorte, 2019).

Individuals are more inclined to engage with a product or service when they observe its widespread adoption within their social circle. This social validation reinforces the behavior, making users gravitate toward brands or services that resonate with their peers. As voice commerce becomes increasingly prevalent, it is poised to transition from a niche offering to an integral part of daily routines.

An interviewed business developer elucidated this trajectory, stating: “At the onset, we anticipate a mix of skepticism and indifference from potential users. While novelty might spark curiosity, it’s insufficient for genuine engagement. The true challenge lies in refining the platform until it garners widespread acceptance, propelling it into the mainstream. However, the timeline for this evolution remains speculative at best” (BD5, E-commerce industry).

This insight highlights the critical role of social influence in consumers’ adoption and, in turn, purchase intention through voice commerce. Observing family, friends, and influencers using voice commerce platforms can significantly impact an individual’s decision to adopt and use these technologies. Peer recommendations and endorsements from trusted sources often serve as powerful motivators, reducing perceived risks and enhancing the perceived benefits of adoption. Moreover, normative pressures, or the perceived societal expectations to conform to certain behaviors, also play a significant role. Individuals may feel compelled to use voice commerce if they believe it is becoming a societal norm or if there is a perception that not using such technology would be seen as outdated or non-conformist. This pressure can drive the usage of voice assistants to make purchases even among those who might initially be hesitant or indifferent.

4.4 Interplay among attributes

The findings indicate that attributes exert not only independent influences but also combine to form interactions among service, service provider, and consumer attributes, thereby revealing unique aspects of voice commerce. Constraints inherent to voice-based interactions—particularly the absence of visual feedback—intensify the relationship between service complexity (a service attribute) and brand familiarity (a service provider attribute). One user

explained, “For straightforward inquiries, such as checking product availability, I trust any assistant. However, when the decision involves considerable uncertainty, like booking travel, my confidence heavily depends on whether the voice assistant uses a familiar and reputable brand” (U12, Regular user). Another user added, “When Alexa connects me to well-known services like Domino’s Pizza, I trust the process entirely. When directed to smaller restaurants, the absence of visuals makes me skeptical . . . I always verify through the app or website afterward” (U4, Experienced user).

While the previously outlined attributes strongly influence consumers’ intent to use voice assistants for purchases, the intensity of such intentions varies according to the service scenario, the type of provider, and individual consumer characteristics. Several users specifically illustrated the interaction between the service consumption phase (a service attribute) and brand familiarity (a service provider attribute):

If I’m just scouting for available flights, speed is paramount. It doesn’t matter if the search is driven by Kayak, Expedia, or an unfamiliar platform. My next step is diving into the websites anyway (U14, Regular user).

With Google Assistant reserving a table for dinner, I’m confident. But if Alexa proposes a similar service using third-party integrations, doubt creeps in. I’d rather finalize the booking via the dedicated app (U1, Novice user).

Additional tensions emerge at the intersection of consumer attributes, notably perceived privacy risks, and service provider attributes, such as multichannel integration. Business developers reported that seamless integration across channels often strengthens consumer trust, since visual confirmations in mobile apps or websites address gaps in auditory interactions. A developer in the retail industry commented, “Consumers might initiate a voice transaction, but for critical steps like payment confirmation or detailed customization, they often prefer the reassurance of visual cues provided on our app. Thus, integrating channels enhances trust and addresses privacy concerns” (BD8, Retail industry). However, users expressed growing anxiety about privacy, since voice assistants often listen continuously, gathering information even when not actively engaged. One novice user observed, “I appreciate the convenience of seamless integration, but I worry about how much personal information is collected across these connected platforms. The convenience becomes unsettling when you realize your voice data moves freely between platforms without explicit confirmation” (U3, Novice user).

Interactions involving service complexity, brand familiarity, and perceived relative advantage further highlight the interdependent nature of these attributes. Participants reported a higher perceived advantage for voice interactions when services were routine and the provider was already familiar. A regular user explained, “I would comfortably reorder groceries from familiar brands through voice, but for an unfamiliar clothing brand, I would not trust a voice assistant without visually inspecting the product first” (U10, Regular user). Another participant noted, “When I’m pressed for time heading to work, I often hail an Uber using Assistant. No need to fumble with my phone, just a voice command does the trick” (U9, Experienced user). Familiarity with the provider can, therefore, mitigate constraints imposed by the auditory-only format, which, in turn, reinforce purchase intentions even for more complex or tangible offerings.

These examples illustrate tensions and complementarities that characterize voice commerce interactions. The heightened consumer sensitivity to privacy, the compensatory role of brand familiarity, and the occasionally conflicting nature of multichannel integration show how these attributes collectively shape consumer behavior in voice commerce. This critical, integrated perspective enables firms to better navigate consumer demands for seamless, personalized experiences while addressing significant concerns around privacy and trust, thereby strengthening adoption and sustained engagement, including purchases, in voice commerce.

5. Discussion

This study's inductive analysis moves beyond voice assistant characteristics and identifies three critical attribute categories—i.e. service attributes, service provider attributes, and consumer attributes—that exert noteworthy influences on consumers' purchase intentions in voice commerce. The findings derived from this analysis enrich understanding by unpacking the ways in which these previously overlooked attributes collectively shape consumer behavior in voice commerce. While prior studies predominantly focused on isolated attributes, particularly the technological attributes of voice assistants (Fernandes and Oliveira, 2021; Moriuchi, 2019), the present study shifts theoretical attention toward understanding voice commerce as a context involving multifaceted interactions. For example, the findings demonstrate how brand familiarity compensates for service complexity and how multichannel integration can effectively mitigate consumer privacy concerns. These interconnected relationships highlight attribute-level dependencies critical for explaining consumer decision-making within e-commerce environments involving voice assistants. Figure 2 visually represents this integrated conceptual framework derived from our analysis.

Focusing on service and service provider attributes, our findings introduce novel insights by extending the established concept of fit from platform technology to service-specific contexts. Specifically, this study advances prior discussions on how product characteristics influence e-commerce adoption (Phau and Meng Poon, 2000; Vijayasathy, 2002) by emphasizing the unique challenges and opportunities inherent in voice-based sales channels. Rather than restating established fit constructs, we highlight their increased relevance and distinct aspects arising explicitly from auditory-only interactions. For example, the analysis demonstrates that user familiarity significantly reduces cognitive barriers stemming from the absence of visual cues, which, in turn, enhances consumer comfort and trust when engaging through voice-driven platforms. Consequently, firms should strategically develop voice interfaces specifically tailored to products or services inherently compatible with auditory interactions, such as routine grocery reordering or streaming subscriptions, while maintaining traditional e-commerce channels for offerings perceived as higher-risk, visually dependent, or involving high-stakes decisions, such as expensive travel bookings or complex health-related appointments.

Further, this study illuminates tensions arising from differing priorities of business developers and users in voice commerce. Business developers commonly prioritize personalization, perceiving detailed user data as essential for enhancing consumer engagement and securing competitive advantage through tailored experiences that drive sales and loyalty. Conversely, users express pronounced reservations regarding extensive personalization due to inherent privacy risks in voice interactions, such as continuous data capture and unintended sharing of private conversations within the home. Prior studies frequently portray attributes such as anthropomorphism and usability as unequivocally beneficial for enhancing consumer engagement (Fernandes and Oliveira, 2021; Moriuchi,

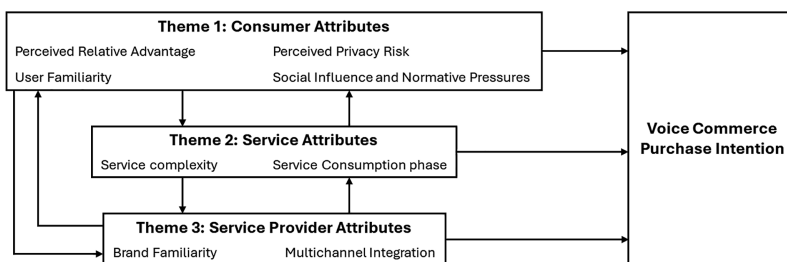


Figure 2. Thematic findings. Notes: Technological attributes such as voice assistant attributes beyond the scope of this study. Source: Authors' own illustration

2019). However, the present findings reveal that these attributes simultaneously intensify consumer privacy concerns—for instance, users expressed unease about voice assistants inadvertently capturing sensitive background discussions, financial information, or personal health data—which creates a strategic dilemma for service providers. Adopting a balanced approach becomes essential because providers must carefully navigate between offering personalized interactions (e.g. tailored product suggestions or transaction convenience) and safeguarding user privacy (e.g. clear opt-in mechanisms, explicit consent for data sharing, transparent communication regarding data usage). Implementing such integrative strategies is critical to driving sustained engagement and establishing user trust in voice-based services.

Finally, this study underscores the importance of adopting a holistic perspective that conceptualizes voice commerce as a dynamic, multisided platform ecosystem rather than viewing it simply as another channel of e-commerce. Such an ecosystem view explicitly accounts for the continuous evolution of consumer behaviors, technological advancements, and strategic interactions among various actors involved in voice commerce. For instance, service attributes like complexity and consumption phases influence consumer behaviors uniquely within auditory-only interactions, where the absence of visual confirmation heightens consumer reliance on trust signals such as brand familiarity and multichannel integration. Similarly, consumer concerns related to privacy escalate within voice-based contexts due to always-on auditory monitoring, thus intensifying tensions between the personalization sought by providers and data security demanded by users. These dynamics highlight the value of integrating insights from various perspectives to better understand how rapidly evolving voice technologies and shifting user expectations collectively shape service delivery strategies. An integrated lens, therefore, helps clarify the interdependencies among consumers, service providers, and services within voice commerce while pointing to strategic challenges that firms must address in catering to stakeholder demands.

5.1 Theoretical contributions

This study provides several theoretical contributions that enrich our understanding of voice commerce and set the stage for future research in this emerging area of e-commerce. Two key overarching insights emerge from the findings: *first*, a holistic and multifaceted approach is essential to fully capture how different attributes collectively influence purchase intentions within voice commerce (RQ₁), and *second*, recognizing the interactions among these attributes is crucial, as their collective impact shapes the adoption and usage patterns of voice-based platforms in e-commerce (RQ₂). These insights advance existing literature in several noteworthy ways.

To begin, this study accentuates the importance of service and service provider attributes, alongside the established consumer and voice assistant attributes, in shaping voice commerce adoption. Voice commerce introduces unique service complexities due to its reliance on auditory communication, which removes the visual and tactile cues readily available in traditional e-commerce. This absence of visual confirmation significantly reshapes the trust dynamics and decision-making processes of consumers, making the strategic design of service attributes—such as clarity during the pre-purchase phase or reliability in post-purchase support—essential for shaping consumer purchase intentions. Consequently, assumptions prevalent in traditional e-commerce settings, which typically depend on visual navigation elements (Kumar *et al.*, 2021), may inadequately explain user behavior in voice-based interactions, thereby reinforcing the need to expand theoretical frameworks to explicitly incorporate service and service provider attributes alongside consumer and technological (voice assistant) attributes.

Building on this expanded theoretical perspective, this study draws on Lovelock's (1983) service classification theory, which distinguishes services according to their target (individuals or physical goods) and their tangible or intangible nature. Recent work applying this classification has positioned service robots, including voice assistants, primarily as facilitators

of intangible services (Wirtz *et al.*, 2018). The present findings reveal that consumers exhibit considerable caution in using voice commerce for services directly linked to personal appearance, well-being, or those perceived as high-stakes (e.g. medical appointments, haircuts, expensive travel bookings), unless they have established familiarity or trust with the provider. Conversely, consumers displayed greater willingness to use voice assistants for intangible services characterized by lower perceived risk, such as online learning and streaming subscriptions, and tangible services unrelated to personal well-being, such as routine household purchases. This preference distinction suggests that current technological capabilities of voice assistants are not equally suited across all service types or phases of consumption, thus highlighting the necessity to carefully reconsider service dimensions such as complexity, tangibility, and personal involvement when designing voice-based service interactions.

Connecting the implications of service characteristics to consumer attributes, this study enhances theoretical understanding of voice commerce by offering context-specific insights into how consumer attributes influence their purchase intentions via voice-based interactions. While perceived risks and subjective norms have previously been identified as influential in shaping decisions to purchase services through voice assistants (Bawack *et al.*, 2021; Mariani *et al.*, 2023; Moriuchi, 2019; Rabassa *et al.*, 2022), the present study expands this understanding by emphasizing perceived relative advantage and user familiarity as essential determinants of purchase intention. Specifically, this study reveals that perceived relative advantage in voice commerce involves distinct dimensions such as reduced cognitive load, hands-free convenience, immediate interactions, and enhanced comfort, diverging notably from traditional conceptions of general “usefulness.” Interestingly, ease of use did not emerge as a prominent factor within perceived relative advantage, likely because some users encountered challenges with voice recognition (Palma *et al.*, 2020). Instead, user familiarity emerged as a key driver of consumer behavior, distinctly significant due to the reliance on auditory rather than visual or tactile cues, thus extending beyond the generalized technological experience commonly highlighted in conventional adoption theories.

Developing this integrated consumer perspective further, this study enriches understanding by examining how these consumer attributes collectively interact with service and service provider attributes. This combined perspective emphasizes the necessity of viewing voice commerce encounters as multifaceted interactions (Rabassa *et al.*, 2022; Robinson *et al.*, 2020). Rather than concentrating narrowly on voice assistant adoption alone, the analysis redirects scholarly attention to the interconnected relationship between consumers, services, and service providers. Such an integrated focus addresses a gap in extant literature, which has tended to overlook how these distinct attribute categories influence each other. Through highlighting these relational dynamics, this study provides a more comprehensive understanding of the factors uniquely shaping consumer intentions and behaviors within voice commerce.

Expanding upon this comprehensive attribute analysis, this study contributes to the service innovation literature by positioning voice commerce as an emerging form of service delivery that challenges traditional assumptions around service design and management (Elshan *et al.*, 2022; Kraus, 2019; Kraus *et al.*, 2019). Central to this contribution is the heightened role of user familiarity and social norms, both of which are especially prominent when users interact with AI-based agents instead of conventional digital channels (Lim *et al.*, 2022). Specifically, consumers’ comfort level with voice interfaces and societal acceptance of interactions with non-human entities become critical determinants of their adoption decisions. This finding diverges significantly from conventional e-commerce research, where familiarity and social acceptance are typically overlooked (Kumar *et al.*, 2021). Consequently, the present results urge researchers to closely examine how prior user experiences with voice technologies and societal perceptions of AI distinctly shape purchasing behavior in voice contexts—factors that often remain underexplored in e-commerce (Luo *et al.*, 2024).

Further extending this argument, this study highlights the dynamic nature of voice commerce as a continually evolving sociotechnical phenomenon (Elshan *et al.*, 2022; Rabassa *et al.*, 2022). Unlike conventional e-commerce channels, voice commerce experiences rapid technological improvements in voice assistant capabilities, ongoing shifts in consumer expectations and behaviors, and continuous adaptations by service providers. These developments create unique tensions and synergies among consumer attributes (such as perceived privacy risk and relative advantage), service provider attributes (notably brand familiarity and multichannel integration), and service attributes (including complexity). Consequently, voice commerce requires service providers to constantly adjust their strategies to accommodate evolving technological advancements and shifting consumer demands, highlighting a uniquely dynamic context for consumer interactions and strategic decision-making. This explicit recognition of the dynamic interplay among attributes distinguishes voice commerce from static, traditional e-commerce models (Kumar *et al.*, 2021), thereby offering scholars and practitioners deeper insights into navigating rapidly changing consumer behaviors and platform strategies.

5.2 Practical implications

The findings offer several practical implications for strategically managing voice commerce through a clear understanding of consumer attributes, service provider attributes, and service attributes.

Firstly, the relationship between brand familiarity (service provider attribute) and service complexity (service attribute) emerges as particularly significant. Given the absence of visual and tactile cues in voice commerce, consumer uncertainty increases, especially when transactions involve complex or high-risk services. Firms can effectively reduce this uncertainty through strategies that initially introduce familiar brands for lower-risk services. Instead of transferring strategies directly from visual e-commerce, firms should design voice-specific experiences, gradually building consumer trust and habitual usage. For example, firms might initially offer voice-based interactions to reorder familiar, low-risk products before gradually extending to more complex services.

Secondly, the tension between perceived privacy risk (consumer attribute) and multichannel integration (service provider attribute) requires careful managerial consideration. Voice commerce inherently raises consumer privacy concerns due to continuous auditory monitoring and data collection. Firms can address these concerns by implementing integrated multichannel strategies, providing consumers with immediate visual confirmations through supplementary channels such as mobile applications or websites. For instance, immediately following a voice transaction, a visual summary or confirmation sent via an associated mobile app can significantly reduce perceived privacy risks and improve consumer trust.

Thirdly, perceived relative advantage and user familiarity emerge as critical consumer attributes relevant to voice commerce. Firms can enhance perceived relative advantage by clearly communicating the distinctive benefits of voice assistants, such as convenience, hands-free multitasking capabilities, immediacy, and reduced cognitive effort. For instance, clearly positioning voice commerce in contexts where consumers typically face constraints—such as commuting, exercising, or managing household tasks—can accentuate these advantages. Moreover, user familiarity becomes especially critical in voice commerce due to its reliance on auditory cues without visual support. Firms should, therefore, structure initial user interactions around familiar patterns from established e-commerce channels, thereby enabling consumers to quickly acclimate and build habitual engagement.

Finally, firms must carefully evaluate which products and services are best suited to voice commerce. While powerful, voice commerce alone may not optimally support all service categories. Firms should strategically consider factors such as service complexity, perceived risk, and consumer involvement when determining voice commerce suitability. Routine

transactions—such as ordering groceries, managing appointments, or simple account inquiries—lend themselves particularly well to voice interfaces. However, complex or high-risk transactions typically require support from traditional, visually oriented channels. Adopting an integrated multichannel strategy, in which voice commerce seamlessly interacts with conventional channels, ensures consistent, compelling, and reassuring customer experiences.

6. Conclusion

This article explores and examines the key attributes driving consumers' purchase intentions in voice commerce. The findings demonstrate that consumer, service, and service provider attributes collectively shape consumer decisions, challenging perspectives that treat these elements as independent, since considering these attributes in isolation may lead to incomplete insights and ineffective management practices. As voice technology becomes increasingly widespread, firms face growing risks of unmet consumer expectations and inefficient resource allocation when these integrated attributes are not managed collectively. Consequently, this article advocates an integrative approach, emphasizing attribute interdependencies to better capture the complexity and evolving consumer expectations associated with voice commerce.

Although this study provides valuable insights into voice commerce, several limitations must be acknowledged. The inductive nature of the study approach, for instance, necessitates caution since the findings, while novel, are preliminary and require additional validation through subsequent research. Future studies can refine and empirically validate these foundational insights using complementary methodologies such as survey (correlation) and experimental (causal) research designs. In addition, the geographical specificity of this study, which focused exclusively on business developers and consumers in Mexico, adds depth to the analysis but also limits generalizability. To address this limitation, future research should replicate and extend this investigation across varied global contexts, which, in turn, can contribute to the generalizability or extension of insights herein this study.

About the authors



Gaurav Gupta is Associate Professor of Entrepreneurship and Information Systems at NEOMA Business School, France. He holds a PhD from IIM Calcutta, India. His research interests include technology entrepreneurship, IS use, strategic IS, and business model transformation. His work has been featured in journals like *Annals of Operations Research*, *Australasian Journal of Information Systems*, *Decision Support Systems*, *Electronic Markets*, *Information and Management*, and *Technological Forecasting and Social Change*, among others. He has won various awards for case writing like *CEEMAN-Emerald Case Writing Award* and *EFMD Case Writing Award*.



Weng Marc Lim is a Distinguished Professor and the Dean of Sunway Business School at Sunway University, an ASU-Cintana Alliance Global Partner Affiliate Faculty at Arizona State University, and an Adjunct Professor at Sungkyunkwan University and Swinburne University of Technology, where he served as Dean, Head of School, Professor, and the University Council at the Sarawak campus. He has served as the Editor in Chief of *Global Business and Organizational Excellence*; Deputy Editor of *Journal of Global Marketing*; Associate Editor of *Journal of Business Research*, *Journal of Consumer Behaviour*, and *Journal of Strategic Marketing*; and Regional Editor of *The Service Industries Journal*. He has authored more than 100 manuscripts in journals ranked “A*” and “A” such as *Australasian Marketing Journal*, *European Journal of Marketing*, *Industrial Marketing Management*, *Journal of Business Research*, *Journal of Business and Industrial Marketing*, *Journal of Consumer Behaviour*, *Journal of Consumer Marketing*, *International Journal of Consumer Studies*, *Journal of Brand Management*, *Journal of Product and Brand Management*, *Journal of Retailing and Consumer Services*, *Journal of International Marketing*, *Journal of Strategic Marketing*, *Marketing Theory*, *Marketing Intelligence and Planning*, and *Psychology and Marketing*, among others.

He has also led high-level discussions at the *AppliedHE*, *Association to Advance Collegiate Schools of Business* (AACSB), *Association of MBAs* (AMBA), *Business Graduates Association* (BGA), *Quacquarelli Symonds* (QS), *Times Higher Education* (THE), *United Nations Educational, Scientific and Cultural Organization* (UNESCO) and *Principles of Responsible Management Education* (PRME), and *World Economic Forum* (WEF). Contact: @limwengmarc on Instagram and Twitter (X), LinkedIn, or his personal homepage at <https://www.wengmarc.com>.



Neha Chaudhuri is Assistant Professor of Information Management at Toulouse Business School, France. She holds a PhD from IIM Calcutta, India. She has completed her B.Tech in Computer Science and Engineering and M.Tech in Information Technology from the Indian Institute of Engineering Science and Technology, Shibpur, India. Her research interests are in AI for business, data analytics, deep learning, and online misinformation management. Her research has been published in journals like *Decision Support Systems* along with proceedings of the *IEEE* as well as in conferences including *HICSS* and *WeB*.



Divya Sharma is Assistant Professor of Information Management at Management Development Institute Gurgaon, India. She holds a PhD from IIM Calcutta, India. Her research focuses on the diverse impacts of emerging technologies on business and society. Her research has been published in *AIS Transaction on Human-Computer Interaction*, *Competition and Regulation in Network Industries*, *Journal of Global Information Management*, and *Journal of Information, Communication and Ethics in Society*, as well as Proceedings of *ACIS*, *ECIS*, and *ICIS*.

Acknowledgments

The authors convey their deepest and most sincere appreciation to Handling Editors-in-Chief Jay Kandampully (previous) and Linda Alkire (present), Co-Guest Editor Bieke Henkens, and the anonymous reviewers for their constructive and developmental feedback that helped improve the quality of the article.

Appendix

Table A1. Sample characteristics

Characteristic	Business developers (n: 15)	Users (n: 18)
Age range	25–45 years	18–60 years
Gender	Male: 8, Female: 7	Male: 8, Female: 10
Occupation	UX designers, developers and product managers	Homemakers, professionals, students
Prior experience with voice assistants	1–5 year(s)	0–3 year(s)
Prior experience with online shopping	3–10 years	1–8 year(s)
Source(s): Authors’ own compilation		

Table A2. Coding (with definitions)

First-order codes	Second-order concepts (and definitions)	Third-order categories (and definitions)
I'm unsure about using it for banking For a restaurant reservation and you know what you're going to order [I might just say] make my usual reservation and order my usual plate If it's a plane ticket, a lot of things can go wrong I'd ask Alexa to find the cheapest flight on Kayak Voice should be used only where it's apt in the purchase process It's fine until tasks like account creation or adding payment methods I'd only use it for platforms or brands I deeply trust and value If it's a luxury brand known for quality, I'd trust their service without prior experience I generally lean toward brands I've used before. Why risk something unknown? It should be simpler and faster than other channels, delivering the same results The process should mimic how you'd do it yourself on the app or website, but with a voice assistant guiding each step A hybrid approach works best. I'd use it as a supplementary tool The convenience of having things delivered home with minimal effort is appealing If it simplifies life or aids in urgent situations, that's valuable Speaking is more comfortable than typing, so I'd rather ask directly There's a fear of conversations being leaked, leading to potential blackmail There's always insecurity because you can't see what you're buying, just discussing it Trust issues arise. What if the voice assistant doesn't complete the transaction correctly? After successfully navigating it a few times, my trust would be stronger. It's like cultivating trust with an algorithm Once familiarized, it certainly streamlines the process, saving time and proving its efficiency Perhaps, introduce it for specific tasks. Once it proves reliable, I'd use it more If a friend recommends it, I might try it I use it mainly because others do. If many adopt it, there's probably a good reason I noticed many people using it and found it intriguing. That prompted me to try	<i>Service complexity</i> <i>The perceived complication or difficulty of using voice commerce for specific services, including those requiring detailed information or sensitive transactions</i> <i>Service consumption phase</i> <i>The specific stage in the service consumption process where voice commerce is utilized (e.g. pre-purchase, service consumption, post-purchase)</i> <i>Brand familiarity</i> <i>The extent to which consumers recognize and have prior experience with a brand, which influences their willingness to use voice commerce for purchasing that brand's products</i> <i>Multichannel integration</i> <i>The degree to which voice commerce is seamlessly integrated with other service channels (e.g. app, website), providing a consistent and cohesive customer experience</i> <i>Perceived relative advantage</i> <i>The extent to which voice commerce is viewed as offering benefits over existing methods, such as convenience, speed or reduced effort</i> <i>Perceived privacy risk</i> <i>The concerns about the potential for misuse or unauthorized access to personal data when using voice commerce</i> <i>User familiarity</i> <i>The level of comfort or ease a consumer has in using voice commerce based on prior experience and repeated interactions</i> <i>Social influence and normative pressures</i> <i>The influence of social norms and the behaviors of others on a consumer's willingness to adopt and use voice commerce</i>	<i>Service attributes</i> <i>The characteristics of the service being provided that influence consumer perceptions and behaviors in voice commerce</i> <i>Service provider attributes</i> <i>The characteristics of the service provider that shape consumer perceptions and behavior in voice commerce</i> <i>Consumer attributes</i> <i>The characteristics or perceptions of consumers that affect their behaviors toward voice commerce</i>

Source(s): Authors' own compilation and definitions

Note

1. Although we possess expertise and experience in e-commerce and technology adoption, we intentionally abstained from conducting an in-depth literature review pertaining to voice commerce at the outset. Noteworthy, the review elucidated in the preceding section was undertaken after our empirical data analysis. This practice aligns with the tenets of a grounded theory (Lim, 2025; Wiesche et al., 2017).

References

- Agarwal, R. and Karahanna, E. (2000), "Time flies when you're having fun: cognitive absorption and beliefs about information technology usage", *MIS Quarterly*, Vol. 24 No. 4, pp. 665-694, doi: [10.2307/3250951](https://doi.org/10.2307/3250951).
- Aw, E.C.-X., Tan, G. W.-H., Cham, T.-H., Raman, R. and Ooi, K.-B. (2022), "Alexa, what's on my shopping list? Transforming customer experience with digital voice assistants", *Technological Forecasting and Social Change*, Vol. 180, 121711, doi: [10.1016/j.techfore.2022.121711](https://doi.org/10.1016/j.techfore.2022.121711).
- Bahmani, N., Bhatnagar, A. and Gauri, D. (2022), "Hey, Alexa! What attributes of skills affect firm value?", *Journal of the Academy of Marketing Science*, Vol. 50 No. 6, pp. 1219-1235, doi: [10.1007/s11747-022-00851-0](https://doi.org/10.1007/s11747-022-00851-0).
- Baier, D., Rese, A., Röglinger, M., Baier, D., Rese, A. and Röglinger, M. (2018), "Conversational user interfaces for online shops? A categorization of use cases", *39th International Conference on Information Systems*, San Francisco, USA.
- Bawack, R.E., Wamba, S.F. and Carillo, K.D.A. (2021), "Exploring the role of personality, trust, and privacy in customer experience performance during voice shopping: evidence from SEM and fuzzy set qualitative comparative analysis", *International Journal of Information Management*, Vol. 58, 102309, doi: [10.1016/j.ijinfomgt.2021.102309](https://doi.org/10.1016/j.ijinfomgt.2021.102309).
- Balakrishnan, J., Dwivedi, Y.K., Hughes, L. and Boy, F. (2024), "Enablers and inhibitors of AI-powered voice assistants: a dual-factor approach by integrating the status quo bias and technology acceptance model", *Information Systems Frontiers*, Vol. 26 No. 3, pp. 921-942, doi: [10.1007/s10796-021-10203-y](https://doi.org/10.1007/s10796-021-10203-y).
- Beeler, L., Zablah, A.R. and Rapp, A. (2022), "Ability is in the eye of the beholder: how context and individual factors shape consumer perceptions of digital assistant ability", *Journal of Business Research*, Vol. 148, pp. 33-46, doi: [10.1016/j.jbusres.2022.04.045](https://doi.org/10.1016/j.jbusres.2022.04.045).
- Beriche, A., Benavent, C. and Constantinides, E. (2022), "Who are voice users? The contributions of decision – making conflict theory", *Journal of Consumer Marketing*, Vol. 39 No. 7, pp. 800-813, doi: [10.1108/JCM-04-2021-4584](https://doi.org/10.1108/JCM-04-2021-4584).
- Bérubé, C., Nißen, M., Vinay, R., Geiger, A., Budig, T., Bhandari, A., Pe Benito, C.R., Ibarcena, N., Pistolese, O., Li, P., Sawad, A.B., Fleisch, E., Stettler, C., Hemsley, B., Berkovsky, S., Kowatsch, T. and Kocaballi, A.B. (2024), "Proactive behavior in voice assistants: a systematic review and conceptual model", *Computers in Human Behavior Reports*, Vol. 14, 100411, doi: [10.1016/j.chbr.2024.100411](https://doi.org/10.1016/j.chbr.2024.100411).
- Bolton, T., Dargahi, T., Belguith, S., Al-Rakhani, M.S. and Sodhro, A.H. (2021), "On the security and privacy challenges of virtual assistants", *Sensors*, Vol. 21 No. 7, p. 2312, doi: [10.3390/s21072312](https://doi.org/10.3390/s21072312).
- Braun, V. and Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101, doi: [10.1191/1478088706qp063oa](https://doi.org/10.1191/1478088706qp063oa).
- Buhalis, D. and Moldavska, I. (2022), "Voice assistants in hospitality: using artificial intelligence for customer service", *Journal of Hospitality and Tourism Technology*, Vol. 13 No. 3, pp. 386-403, doi: [10.1108/JHTT-03-2021-0104](https://doi.org/10.1108/JHTT-03-2021-0104).
- Cao, D., Sun, Y., Goh, E., Wang, R. and Kuiavska, K. (2022), "Adoption of smart voice assistants technology among Airbnb guests: a revised self-efficacy-based value adoption model (SVAM)", *International Journal of Hospitality Management*, Vol. 101, 103124, doi: [10.1016/j.ijhm.2021.103124](https://doi.org/10.1016/j.ijhm.2021.103124).

- Chang, S.E. and Jang, Y.T. (2009), "Assessing customer satisfaction in a v-commerce environment", *Journal of Organizational Computing and Electronic Commerce*, Vol. 19 No. 1, pp. 30-49, doi: [10.1080/10919390802605083](https://doi.org/10.1080/10919390802605083).
- Charmaz, K. (2006), *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*, Sage Publications, Thousand Oaks, CA.
- Chattaraman, V., Kwon, W.-S., Gilbert, J.E. and Ross, K. (2019), "Should AI-Based, conversational digital assistants employ social- or task-oriented interaction style? A task-competency and reciprocity perspective for older adults", *Computers in Human Behavior*, Vol. 90, pp. 315-330, doi: [10.1016/j.chb.2018.08.048](https://doi.org/10.1016/j.chb.2018.08.048).
- Chatterjee, D., Grewal, R. and Sambamurthy, V. (2002), "Shaping up for e-commerce: institutional enablers of the organizational assimilation of web technologies", *MIS Quarterly*, Vol. 26 No. 2, pp. 65-89, doi: [10.2307/4132321](https://doi.org/10.2307/4132321).
- Chevalier, S. (2023), *E-Commerce Transactions Value via Voice Assistants Worldwide in 2021 and 2023*, Statista, available at: <https://www.statista.com/statistics/1256695/ecommerce-voice-assistant-transactions/>
- Chung, H., Iorga, M., Voas, J. and Lee, S. (2017), "Alexa, can I trust you?", *Computer*, Vol. 50 No. 9, pp. 100-104, doi: [10.1109/MC.2017.3571053](https://doi.org/10.1109/MC.2017.3571053).
- Clark, M.S. and Mils, J. (1993), "The difference between communal and exchange relationships: what it is and is not", *Personality and Social Psychology Bulletin*, Vol. 19 No. 6, pp. 684-691, doi: [10.1177/0146167293196003](https://doi.org/10.1177/0146167293196003).
- Corbin, J. and Strauss, A. (2008), *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 3rd ed., Sage Publications, Thousand Oaks, CA.
- Crail, C. and Bottorf, C. (2022), "2023 E-commerce trends", *Forbes*, available at: <https://www.forbes.com/advisor/business/2023-ecommerce-trends/>
- Dash, A., Chakraborty, A., Ghosh, S., Mukherjee, A. and Gummadi, K.P. (2022), "Alexa, in you, I trust! Fairness and interpretability issues in e-commerce search through smart speakers", *Proceedings of the ACM Web Conference 2022*, pp. 3695-3705, doi: [10.1145/3485447.3512265](https://doi.org/10.1145/3485447.3512265).
- Datta, P. (2011), "A preliminary study of ecommerce adoption in developing countries: ecommerce adoption in developing countries", *Information Systems Journal*, Vol. 21 No. 1, pp. 3-32, doi: [10.1111/j.1365-2575.2009.00344.x](https://doi.org/10.1111/j.1365-2575.2009.00344.x).
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003, doi: [10.1287/mnsc.35.8.982](https://doi.org/10.1287/mnsc.35.8.982).
- de Oliveira, G.G., Lizarelli, F.L., Teixeira, J.G. and de Sousa Mendes, G.H. (2023), "Curb your enthusiasm: examining the customer experience with Alexa and its marketing outcomes", *Journal of Retailing and Consumer Services*, Vol. 71, 103220, doi: [10.1016/j.jretconser.2022.103220](https://doi.org/10.1016/j.jretconser.2022.103220).
- Dellaert, B.G.C., Shu, S.B., Arentze, T.A., Baker, T., Diehl, K., Donkers, B., Fast, N.J., Häubl, G., Johnson, H., Karmarkar, U.R., Oppewal, H., Schmitt, B.H., Schroeder, J., Spiller, S.A. and Steffel, M. (2020), "Consumer decisions with artificially intelligent voice assistants", *Marketing Letters*, Vol. 31 No. 4, pp. 335-347, doi: [10.1007/s11002-020-09537-5](https://doi.org/10.1007/s11002-020-09537-5).
- Elshan, E., Zierau, N., Engel, C., Janson, A. and Leimeister, J.M. (2022), "Understanding the design elements affecting user acceptance of intelligent agents: past, present and future", *Information Systems Frontiers*, Vol. 24 No. 3, pp. 699-730, doi: [10.1007/s10796-021-10230-9](https://doi.org/10.1007/s10796-021-10230-9).
- Fan, A., Lu, Z. and Mao, Z.E. (2022), "To talk or to touch: unraveling consumer responses to two types of hotel in-room technology", *International Journal of Hospitality Management*, Vol. 101, 103112, doi: [10.1016/j.ijhm.2021.103112](https://doi.org/10.1016/j.ijhm.2021.103112).
- Fernandes, T. and Oliveira, E. (2021), "Understanding consumers' acceptance of automated technologies in service encounters: drivers of digital voice assistants adoption", *Journal of Business Research*, Vol. 122, pp. 180-191, doi: [10.1016/j.jbusres.2020.08.058](https://doi.org/10.1016/j.jbusres.2020.08.058).

- Flavián, C., Akdim, K. and Casaló, L.V. (2023), "Effects of voice assistant recommendations on consumer behavior", *Psychology and Marketing*, Vol. 40 No. 2, pp. 328-346, doi: [10.1002/mar.21765](https://doi.org/10.1002/mar.21765).
- Galanxhi-Janaqi, H. and Nah, F. (2004), "U-commerce: emerging trends and research issues", *Industrial Management and Data Systems*, Vol. 104 No. 9, pp. 744-755, doi: [10.1108/02635570410567739](https://doi.org/10.1108/02635570410567739).
- Gilbert, N. and Stoneman, P. (2015), *Researching Social Life*, Sage Publications, Thousand Oaks, CA.
- Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking qualitative rigor in inductive research: notes on the Gioia methodology", *Organizational Research Methods*, Vol. 16 No. 1, pp. 15-31, doi: [10.1177/1094428112452151](https://doi.org/10.1177/1094428112452151).
- Glaser, B.G. and Strauss, A.L. (2017), *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Routledge, New York.
- Grewal, D., Guha, A., Schweiger, E., Ludwig, S. and Wetzels, M. (2022), "How communications by AI-enabled voice assistants impact the customer journey", *Journal of Service Management*, Vol. 33 Nos 4/5, pp. 705-720, doi: [10.1108/JOSM-11-2021-0452](https://doi.org/10.1108/JOSM-11-2021-0452).
- Guzman, A.L. (2019), "Voices in and of the machine: source orientation toward mobile virtual assistants", *Computers in Human Behavior*, Vol. 90, pp. 343-350, doi: [10.1016/j.chb.2018.08.009](https://doi.org/10.1016/j.chb.2018.08.009).
- Hasan, R., Shams, R. and Rahman, M. (2021), "Consumer trust and perceived risk for voice-controlled artificial intelligence: the case of Siri", *Journal of Business Research*, Vol. 131, pp. 591-597, doi: [10.1016/j.jbusres.2020.12.012](https://doi.org/10.1016/j.jbusres.2020.12.012).
- Hayes, P. and Wagner, J. (2018), "Prepare for the voice revolution", PwC, available at: <https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/voice-assistants.html>
- Hearst, M.A. (2011), "'Natural' search user interfaces", *Communications of the ACM*, Vol. 54 No. 11, pp. 60-67, doi: [10.1145/2018396.2018414](https://doi.org/10.1145/2018396.2018414).
- Hernández-Ortega, B., Aldas-Manzano, J. and Ferreira, I. (2022), "Relational cohesion between users and smart voice assistants", *Journal of Services Marketing*, Vol. 36 No. 5, pp. 725-740, doi: [10.1108/JSM-07-2020-0286](https://doi.org/10.1108/JSM-07-2020-0286).
- Howard, J.A. and Sheth, J.N. (1969), *The Theory of Buyer Behavior*, John Wiley & Sons, New York.
- Hoy, M.B. (2018), "Alexa, Siri, Cortana, and more: an introduction to voice assistants", *Medical Reference Services Quarterly*, Vol. 37 No. 1, pp. 81-88, doi: [10.1080/02763869.2018.1404391](https://doi.org/10.1080/02763869.2018.1404391).
- Hsiao, W.-H. and Chang, T.-S. (2019), "Exploring the opportunity of digital voice assistants in the logistics and transportation industry", *Journal of Enterprise Information Management*, Vol. 32 No. 6, pp. 1034-1050, doi: [10.1108/JEIM-12-2018-0271](https://doi.org/10.1108/JEIM-12-2018-0271).
- Jiménez-Barreto, J., Rubio, N., Mura, P., Sthapit, E. and Campo, S. (2023), "'Ask Google Assistant where to travel' tourists' interactive experiences with smart speakers: an assemblage theory approach", *Journal of Travel Research*, Vol. 62 No. 4, pp. 734-752, doi: [10.1177/00472875221094073](https://doi.org/10.1177/00472875221094073).
- Kang, W. and Shao, B. (2023), "The impact of voice assistants' intelligent attributes on consumer well-being: findings from PLS-SEM and fsQCA", *Journal of Retailing and Consumer Services*, Vol. 70, 103130, doi: [10.1016/j.jretconser.2022.103130](https://doi.org/10.1016/j.jretconser.2022.103130).
- Kautish, P., Purohit, S., Filieri, R. and Dwivedi, Y.K. (2023), "Examining the role of consumer motivations to use voice assistants for fashion shopping: the mediating role of awe experience and eWOM", *Technological Forecasting and Social Change*, Vol. 190, 122407, doi: [10.1016/j.techfore.2023.122407](https://doi.org/10.1016/j.techfore.2023.122407).
- Kendall, M., Murray, S.A., Carduff, E., Worth, A., Harris, F., Lloyd, A., Cavers, D., Grant, L., Boyd, K. and Sheikh, A. (2009), "Use of multiperspective qualitative interviews to understand patients' and carers' beliefs, experiences, and needs", *BMJ*, Vol. 339 No. oct14 3, b4122, doi: [10.1136/bmj.b4122](https://doi.org/10.1136/bmj.b4122).

- Kendall, L., Chaudhuri, B. and Bhalla, A. (2020), "Understanding technology as situated practice: everyday use of voice user interfaces among diverse groups of users in urban India", *Information Systems Frontiers*, Vol. 22 No. 3, pp. 585-605, doi: [10.1007/s10796-020-10015-6](https://doi.org/10.1007/s10796-020-10015-6).
- Kim, D., Park, K., Park, Y., Ju, J. and Ahn, J. (2018), "Alexa, tell me more: the effect of advertisements on memory accuracy from smart speakers", *PACIS 2018 Proceedings*, p. 204, available at: <https://aisel.aisnet.org/pacis2018/204>
- King, D., Auschaitrakul, S. and Lin, C.-W.J. (2022), "Search modality effects: merely changing product search modality alters purchase intentions", *Journal of the Academy of Marketing Science*, Vol. 50 No. 6, pp. 1236-1256, doi: [10.1007/s11747-021-00820-z](https://doi.org/10.1007/s11747-021-00820-z).
- Kock, N. (2004), "The psychobiological model: towards a new theory of computer-mediated communication based on Darwinian evolution", *Organization Science*, Vol. 15 No. 3, pp. 327-348, doi: [10.1287/orsc.1040.0071](https://doi.org/10.1287/orsc.1040.0071).
- Krämer, N.C., Bente, G., Eschenburg, F. and Troitzsch, H. (2009), "Embodied conversational agents: research prospects for social psychology and an exemplary study", *Social Psychology*, Vol. 40 No. 1, pp. 26-36, doi: [10.1027/1864-9335.40.1.26](https://doi.org/10.1027/1864-9335.40.1.26).
- Kraus, D. (2019), *Factors Influencing Customer Satisfaction: Differences between E-Commerce and Voice Commerce*, GRIN Verlag, Germany.
- Kraus, D., Reibenspiess, V. and Eckhardt, A. (2019), "How voice can change customer satisfaction: a comparative analysis between e-commerce and voice commerce", *14th International Conference on Wirtschaftsinformatik*.
- Kumar, S., Lim, W.M., Pandey, N. and Christopher Westland, J. (2021), "20 years of electronic commerce research", *Electronic Commerce Research*, Vol. 21, pp. 1-40, doi: [10.1007/s10660-021-09464-1](https://doi.org/10.1007/s10660-021-09464-1).
- LaMorte, W.W. (2019), *The Theory of Planned Behavior*, Boston University School of Public Health, available at: <https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchange/theories/BehavioralChangeTheories3.html>
- Larios-Hernandez, G.J. (2024), "Alibaba in Mexico: adapting the digital villages model to Latin America", *The Information Society*, Vol. 40 No. 2, pp. 120-135, doi: [10.1080/01972243.2024.2315878](https://doi.org/10.1080/01972243.2024.2315878).
- Larivière, B., Bowen, D., Andreassen, T.W., Kunz, W., Sirianni, N.J., Voss, C., Wunderlich, N.V. and De Keyser, A. (2017), "'Service Encounter 2.0': an investigation into the roles of technology, employees and customers", *Journal of Business Research*, Vol. 79, pp. 238-246, doi: [10.1016/j.jbusres.2017.03.008](https://doi.org/10.1016/j.jbusres.2017.03.008).
- Le Bigot, L., Jamet, E. and Rouet, J.-F. (2004), "Searching information with a natural language dialogue system: a comparison of spoken vs. written modalities", *Applied Ergonomics*, Vol. 35 No. 6, pp. 557-564, doi: [10.1016/j.apergo.2004.06.001](https://doi.org/10.1016/j.apergo.2004.06.001).
- Le Bigot, L., Rouet, J.-F. and Jamet, E. (2007), "Effects of speech- and text-based interaction modes in natural language human-computer dialogue", *Human Factors*, Vol. 49 No. 6, pp. 1045-1053, doi: [10.1518/001872007X249901](https://doi.org/10.1518/001872007X249901).
- Lee, K. (2004), "Presence, explicated", *Communication Theory*, Vol. 14 No. 1, pp. 27-50, doi: [10.1111/j.1468-2885.2004.tb00302.x](https://doi.org/10.1111/j.1468-2885.2004.tb00302.x).
- Lee, K., Lee, K.Y. and Sheehan, L. (2020), "Hey Alexa! A magic spell of social glue?: sharing a smart voice assistant speaker and its impact on users' perception of group harmony", *Information Systems Frontiers*, Vol. 22 No. 3, pp. 563-583, doi: [10.1007/s10796-019-09975-1](https://doi.org/10.1007/s10796-019-09975-1).
- Lee, S., Oh, J. and Moon, W.-K. (2022), "Adopting voice assistants in online shopping: examining the role of social presence, performance risk, and machine heuristic", *International Journal of Human-Computer Interaction*, Vol. 39 No. 14, pp. 1-15, doi: [10.1080/10447318.2022.2089813](https://doi.org/10.1080/10447318.2022.2089813).
- Lemon, K.N. and Verhoef, P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of Marketing*, Vol. 80 No. 6, pp. 69-96, doi: [10.1509/jm.15.0420](https://doi.org/10.1509/jm.15.0420).
- Lim, W.M. (2025), "What is qualitative research? An overview and guidelines", *Australasian Marketing Journal*, Vol. 33 No. 2, pp. 199-229, doi: [10.1177/14413582241264619](https://doi.org/10.1177/14413582241264619).

- Lim, W.M., Kumar, S., Verma, S. and Chaturvedi, R. (2022), "Alexa, what do we know about conversational commerce? Insights from a systematic literature review", *Psychology and Marketing*, Vol. 39 No. 6, pp. 1129-1155, doi: [10.1002/mar.21654](https://doi.org/10.1002/mar.21654).
- Lim, W.M., Kumar, S., Pandey, N., Verma, D. and Kumar, D. (2023), "Evolution and trends in consumer behaviour: insights from Journal of Consumer Behaviour", *Journal of Consumer Behaviour*, Vol. 22 No. 1, pp. 217-232, doi: [10.1002/cb.2118](https://doi.org/10.1002/cb.2118).
- Lovelock, C.H. (1983), "Classifying services to gain strategic marketing insights", *Journal of Marketing*, Vol. 47 No. 3, pp. 9-20, doi: [10.1177/002224298304700303](https://doi.org/10.1177/002224298304700303).
- Lu, V.N., Wirtz, J., Kunz, W.H., Paluch, S., Gruber, T., Martins, A. and Patterson, P.G. (2020), "Service robots, customers and service employees: what can we learn from the academic literature and where are the gaps?", *Journal of Service Theory and Practice*, Vol. 30 No. 3, pp. 361-391, doi: [10.1108/JSTP-04-2019-0088](https://doi.org/10.1108/JSTP-04-2019-0088).
- Luo, X., Lim, W.M., Cheah, J.H., Lim, X.J. and Dwivedi, Y.K. (2024), "Live streaming commerce: a review and research agenda", *Journal of Computer Information Systems*, Vol. 65 No. 3, pp. 376-399, doi: [10.1080/08874417.2023.2290574](https://doi.org/10.1080/08874417.2023.2290574).
- MacInnis, D.J. (2011), "A framework for conceptual contributions in marketing", *Journal of Marketing*, Vol. 75 No. 4, pp. 136-154, doi: [10.1509/jmkg.75.4.136](https://doi.org/10.1509/jmkg.75.4.136).
- Mahr, D. and Huh, J. (2022), "Technologies in service communication: looking forward", *Journal of Service Management*, Vol. 33 Nos 4/5, pp. 648-656, doi: [10.1108/JOSM-03-2022-0075](https://doi.org/10.1108/JOSM-03-2022-0075).
- Maity, M. and Dass, M. (2014), "Consumer decision-making across modern and traditional channels: e-commerce, m-commerce, in-store", *Decision Support Systems*, Vol. 61, pp. 34-46, doi: [10.1016/j.dss.2014.01.008](https://doi.org/10.1016/j.dss.2014.01.008).
- Malodia, S., Ferraris, A., Sakashita, M., Dhir, A. and Gavurova, B. (2023), "Can Alexa serve customers better? AI-driven voice assistant service interactions", *Journal of Services Marketing*, Vol. 37 No. 1, pp. 25-39, doi: [10.1108/JSM-12-2021-0488](https://doi.org/10.1108/JSM-12-2021-0488).
- Malodia, S., Islam, N., Kaur, P. and Dhir, A. (2024), "Why do people use artificial intelligence (AI)-enabled voice assistants?", *IEEE Transactions on Engineering Management*, Vol. 71, pp. 491-505, doi: [10.1109/TEM.2021.3117884](https://doi.org/10.1109/TEM.2021.3117884).
- Mari, A. and Algesheimer, R. (2021), "The role of trusting beliefs in voice assistants during voice shopping", *Hawaii International Conference on System Sciences*, doi: [10.24251/HICSS.2021.495](https://doi.org/10.24251/HICSS.2021.495).
- Mariani, M.M., Hashemi, N. and Wirtz, J. (2023), "Artificial intelligence empowered conversational agents: a systematic literature review and research agenda", *Journal of Business Research*, Vol. 161, 113838, doi: [10.1016/j.jbusres.2023.113838](https://doi.org/10.1016/j.jbusres.2023.113838).
- Martínez-Domínguez, M. and Mora-Rivera, J. (2020), "Internet adoption and usage patterns in rural Mexico", *Technology in Society*, Vol. 60, 101226, doi: [10.1016/j.techsoc.2019.101226](https://doi.org/10.1016/j.techsoc.2019.101226).
- McLean, G., Osei-Frimpong, K. and Barhorst, J. (2021), "Alexa, do voice assistants influence consumer brand engagement? – Examining the role of AI powered voice assistants in influencing consumer brand engagement", *Journal of Business Research*, Vol. 124, pp. 312-328, doi: [10.1016/j.jbusres.2020.11.045](https://doi.org/10.1016/j.jbusres.2020.11.045).
- McTear, M., Callejas, Z. and Griol, D. (2016), "The dawn of the conversational interface", in McTear, M., Callejas, Z. and Griol, D. (Eds), *The Conversational Interface. Talking to Smart Devices*, Springer, Cham, pp. 11-24.
- Miles, M.B. and Huberman, A.M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, Sage Publications, Thousand Oaks, CA.
- Molesworth, M. and Suortti, J.-P. (2002), "Buying cars online: the adoption of the web for high-involvement, high-cost purchases", *Journal of Consumer Behaviour*, Vol. 2 No. 2, pp. 155-168, doi: [10.1002/cb.97](https://doi.org/10.1002/cb.97).
- Moriuchi, E. (2019), "Okay, Google!: an empirical study on voice assistants on consumer engagement and loyalty", *Psychology and Marketing*, Vol. 36 No. 5, pp. 489-501, doi: [10.1002/mar.21192](https://doi.org/10.1002/mar.21192).

- Nass, C. and Brave, S. (2005), *Wired for Speech: How Voice Activates and Advances the Human–Computer Relationship*, The MIT Press, Cambridge, MA.
- Novielli, N., de Rosis, F. and Mazzotta, I. (2010), “User attitude towards an embodied conversational agent: effects of the interaction mode”, *Journal of Pragmatics*, Vol. 42 No. 9, pp. 2385-2397, doi: [10.1016/j.pragma.2009.12.016](https://doi.org/10.1016/j.pragma.2009.12.016)Ocón.
- Palacios, J.J. (2003), “The development of e-commerce in Mexico: a business-led passing boom or a step toward the emergence of a digital economy?”, *The Information Society*, Vol. 19 No. 1, pp. 69-79, doi: [10.1080/01972240309479](https://doi.org/10.1080/01972240309479).
- Palma, M., del, C., Seeger, A.-M. and Heinzl, A. (2020), “Mitigating information overload in e-commerce interactions with conversational agents”, in *Information Systems and Neuroscience*, Springer, pp. 221-228.
- Park, K., Park, Y., Lee, J., Ahn, J.-H. and Kim, D. (2022), “Alexa, tell me more! The effectiveness of advertisements through smart speakers”, *International Journal of Electronic Commerce*, Vol. 26 No. 1, pp. 3-24, doi: [10.1080/10864415.2021.2010003](https://doi.org/10.1080/10864415.2021.2010003).
- Pathak, V. and Pathak, A. (2017), “Understanding perceived risk: a case study of green electronic consumer products”, *Management Insight*, Vol. 13 No. 1, pp. 33-37, doi: [10.21844/mijia.v13i01.8367](https://doi.org/10.21844/mijia.v13i01.8367).
- Phau, I. and Meng Poon, S. (2000), “Factors influencing the types of products and services purchased over the Internet”, *Internet Research*, Vol. 10 No. 2, pp. 102-113, doi: [10.1108/10662240010322894](https://doi.org/10.1108/10662240010322894).
- Qiu, L. and Benbasat, I. (2005), “Online consumer trust and live help interfaces: the effects of text-to-speech voice and three-dimensional avatars”, *International Journal of Human-Computer Interaction*, Vol. 19 No. 1, pp. 75-94, doi: [10.1207/s15327590ijhc1901_6](https://doi.org/10.1207/s15327590ijhc1901_6).
- Rabassa, V., Sabri, O. and Spaletta, C. (2022), “Conversational commerce: do biased choices offered by voice assistants’ technology constrain its appropriation?”, *Technological Forecasting and Social Change*, Vol. 174, 121292, doi: [10.1016/j.techfore.2021.121292](https://doi.org/10.1016/j.techfore.2021.121292).
- Ramadan, Z.B. (2021), “‘Alexafying’ shoppers: the examination of Amazon’s captive relationship strategy”, *Journal of Retailing and Consumer Services*, Vol. 62, 102610, doi: [10.1016/j.jretconser.2021.102610](https://doi.org/10.1016/j.jretconser.2021.102610).
- Reisenbichler, M., Reutterer, T., Schweidel, D.A. and Dan, D. (2022), “Frontiers: supporting content marketing with natural language generation”, *Marketing Science*, Vol. 41 No. 3, pp. 441-452, doi: [10.1287/mksc.2022.1354](https://doi.org/10.1287/mksc.2022.1354).
- Renz, A., Baldauf, M., Maier, E. and Alt, F. (2022), “Alexa, it’s me! An online survey on the user experience of smart speaker authentication”, in *Mensch Und Computer 2022*, pp. 14-24, doi: [10.1145/3543758.3543765](https://doi.org/10.1145/3543758.3543765).
- Robinson, S., Orsingher, C., Alkire, L., De Keyser, A., Giebelhausen, M., Papamichail, K.N., Shams, P. and Temerak, M.S. (2020), “Frontline encounters of the AI kind: an evolved service encounter framework”, *Journal of Business Research*, Vol. 116, pp. 366-376, doi: [10.1016/j.jbusres.2019.08.038](https://doi.org/10.1016/j.jbusres.2019.08.038).
- Rogers, E.M. (2003), *Diffusion of Innovations*, 5th ed., Simon & Schuster.
- Rzepka, C., Berger, B. and Hess, T. (2020), “Why another customer channel? Consumers’ perceived benefits and costs of voice commerce”, *Proceedings of the 53rd Hawaii International Conference on System Sciences*, pp. 4079-4088, available at: <http://hdl.handle.net/10125/64241>
- Rzepka, C., Berger, B. and Hess, T. (2022), “Voice assistant vs. chatbot – examining the fit between conversational agents’ interaction modalities and information search tasks”, *Information Systems Frontiers*, Vol. 24 No. 3, pp. 839-856, doi: [10.1007/s10796-021-10226-5](https://doi.org/10.1007/s10796-021-10226-5).
- Sabir, A., Lafontaine, E. and Das, A. (2022), “Hey Alexa, who am i talking to?: analyzing users’ perception and awareness regarding third-party alexa skills”, *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, pp. 1-15, doi: [10.1145/3491102.3517510](https://doi.org/10.1145/3491102.3517510).
- Saldaña, J. (2015), *The Coding Manual for Qualitative Researchers*, 3rd ed., Sage Publications, Thousand Oaks, CA.

- Schiffrin, D. (1984), "Jewish argument as sociability", *Language in Society*, Vol. 13 No. 3, pp. 311-335, doi: [10.1017/s0047404500010526](https://doi.org/10.1017/s0047404500010526).
- Sharma, M., Joshi, S., Luthra, S. and Kumar, A. (2024), "Impact of digital assistant attributes on millennials' purchasing intentions: a multi-group analysis using PLS-SEM, artificial neural network and fsQCA", *Information Systems Frontiers*, Vol. 26 No. 3, pp. 943-966, doi: [10.1007/s10796-022-10339-5](https://doi.org/10.1007/s10796-022-10339-5).
- Simms, K. (2019), "How voice assistants could change the way we shop", *Harvard Business Review*, available at: <https://hbr.org/2019/05/how-voice-assistants-could-change-the-way-we-shop>
- Tassiello, V., Tillotson, J.S. and Rome, A.S. (2021), "'Alexa, order me a pizza!': the mediating role of psychological power in the consumer-voice assistant interaction", *Psychology and Marketing*, Vol. 38 No. 7, pp. 1069-1080, doi: [10.1002/mar.21488](https://doi.org/10.1002/mar.21488).
- Thellman, S., Silvervarg, A., Gulz, A. and Ziemke, T. (2016), "Physical vs. virtual agent embodiment and effects on social interaction", in Traum, D., Swartout, W., Khooshabeh, P., Kopp, S., Scherer, S. and Leuski, A. (Eds), *Intelligent Virtual Agents*, Springer International Publishing, pp. 412-415, doi: [10.1007/978-3-319-47665-0_44](https://doi.org/10.1007/978-3-319-47665-0_44).
- Urquhart, C., Lehmann, H. and Myers, M.D. (2010), "Putting the "theory" back into grounded theory: guidelines for grounded theory studies in information systems", *Information Systems Journal*, Vol. 20 No. 4, pp. 357-381, doi: [10.1111/j.1365-2575.2009.00328.x](https://doi.org/10.1111/j.1365-2575.2009.00328.x).
- van Doorn, J., Lemon, K.N., Mittal, V., Nass, S., Pick, D., Pirmer, P. and Verhoef, P.C. (2010), "Customer engagement behavior: theoretical foundations and research directions", *Journal of Service Research*, Vol. 13 No. 3, pp. 253-266, doi: [10.1177/1094670510375599](https://doi.org/10.1177/1094670510375599).
- van Doorn, J., Mende, M., Noble, S.M., Hulland, J., Ostrom, A.L., Grewal, D. and Petersen, J.A. (2017), "Domo Arigato Mr. Roboto: emergence of automated social presence in organizational frontlines and customers' service experiences", *Journal of Service Research*, Vol. 20 No. 1, pp. 43-58, doi: [10.1177/1094670516679272](https://doi.org/10.1177/1094670516679272).
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, Vol. 27 No. 3, pp. 425-478, doi: [10.2307/30036540](https://doi.org/10.2307/30036540).
- Vijayarathy, L.R. (2002), "Product characteristics and internet shopping intentions", *Internet Research*, Vol. 12 No. 5, pp. 411-426, doi: [10.1108/10662240210447164](https://doi.org/10.1108/10662240210447164).
- Wiesche, M., Jurisch, M.C., Yetton, P.W. and Krcmar, H. (2017), "Grounded theory methodology in information systems research", *MIS Quarterly*, Vol. 41 No. 3, pp. 685-701, doi: [10.25300/misq/2017/41.3.02](https://doi.org/10.25300/misq/2017/41.3.02), available at: <https://www.jstor.org/stable/26635009>
- Wirtz, J., Patterson, P.G., Kunz, W.H., Gruber, T., Lu, V.N., Paluch, S. and Martins, A. (2018), "Brave new world: service robots in the frontline", *Journal of Service Management*, Vol. 29 No. 5, pp. 907-931, doi: [10.1108/JOSM-04-2018-0119](https://doi.org/10.1108/JOSM-04-2018-0119).
- Zaharia, S. and Würfel, M. (2021), "Voice commerce—studying the acceptance of smart speakers", in Ahram, T., Taiar, R., Langlois, K. and Choplin, A. (Eds), *Human Interaction, Emerging Technologies and Future Applications III*, Springer International Publishing, pp. 449-454, doi: [10.1007/978-3-030-55307-4_68](https://doi.org/10.1007/978-3-030-55307-4_68).
- Zierau, N., Hildebrand, C., Bergner, A., Busquet, F., Schmitt, A. and Leimeister, J.M. (2023), "Voice bots on the frontline: voice-based interfaces enhance flow-like consumer experiences & boost service outcomes", *Journal of the Academy of Marketing Science*, Vol. 51 No. 4, pp. 823-842, doi: [10.1007/s11747-022-00868-5](https://doi.org/10.1007/s11747-022-00868-5).

Corresponding author

Weng Marc Lim can be contacted at: lim@wengmarc.com