"Alexa! What is Voice Commerce?" Examining Consumer Behavior towards Voice Assistants

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[Abstract] Technological advancements and globalization have initiated worldwide development over the past few decades. However, COVID-19 has paused this development process and created a need for tremendous development and fulfilment of sustainable development goals by all nations. Nowadays, artificial intelligence plays a pivotal role in the economic, social, and technological development of any nation. Voice artificial intelligence has left the server room and entered the lives of billions of consumers worldwide to alter their interactions with brands and even establish a new marketing and retail channel: voice commerce. Voice assistants like Alexa, Siri, and Google Assistant understand the human voice and interpret it to perform the required action and response in a synthesized voice. Voice assistants are rapidly being adopted across various sectors like education, entertainment, hospitality and tourism, health, and even retail. The onset of voice commerce has upgraded consumers' e-commerce experience. With the unique characteristics and an increase in voice touch points, we cannot deny that voice is the future. Voice assistants have shifted consumer preferences and reshaped Consumer behavior towards shopping and marketing activities. As consumers are the king of any business, it is necessary to understand consumer behavior, consumer acceptance, usage, and trust of voice artificial intelligence. Though consumers trust voice assistants for their daily routine tasks like listening to music and calling someone, their trust in these devices while engaging in transactional activities like shopping is still a question for debate.

This study is an attempt to examine consumer acceptance and adoption of voice commerce. The data was collected from 400 respondents residing in India. Also, researchers have proposed a comprehensive model to examine the factors influencing the adoption of voice commerce. Researchers have applied structural equational modelling for data analysis. This study sheds light on how voice artificial intelligence may alter market dynamics and consumer behavior. It will be a valuable contribution in this field and provide valuable managerial insights for marketers regarding uplifting their games in this disruptive era.

[Keywords] perceived privacy risk, tam, trust, voice assistant, voice commerce

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Introduction

Technological advancements and scientific inventions have transformed the world radically. Now, innovations are the new normal. Also, artificial intelligence and smart technologies are working as catalysts in the development process and becoming ubiquitous in the lives of people by altering human-computer interactions, influencing basic human functioning (Sommer, 2015), evolving the

consumers' interaction with organizations and brands, and leading to radical organizational and social innovations (Mittal & Manocha, 2022).

The advent of voice assistants, such as Amazon Alexa, Samsung Bixby, Apple Siri, Microsoft Cortana, and Google Assistant has altered consumers' professional and personal lives by increasing consumer interactions with voice assistants exponentially (Roblek et al., 2019). Voice assistants are becoming an integral part of consumer lives (Al Shamsi et al., 2022) with users performing various day-to-day functions like calling, listening to music, setting alarms, and making purchases, or voice commerce (Ruby, 2023). Voice commerce is an extension of e-commerce channels where brands and marketers use voice assistants to interact with consumers. While e-commerce is defined as commerce conducted over electronic media, voice commerce is a subset of e-commerce, which provides customers with the additional facility of interacting with brands using voice assistants or basically voice technology (Kraus et al., 2019).

Voice assistants, which are either embedded in smartphones, automobiles, and television (Mittal & Manocha, 2022), or are built as smart speakers (Hoy, 2018; McLean & Osei-Frimpong, 2019) can understand human speech and process consumer requests accordingly. It allows consumers to interact and make connections with non-human agents: voice assistants (Al Shamsi et al., 2022). Consumers communicate via voice assistants to search (Al-Kaisi et al., 2021), compare, and even buy products (Kraus et al., 2019).

Statisticians estimate that by 2024, the global voice recognition market will cross $26 billion (Ruby, 2023), which paves the way for consumers to shift to voice commerce (Chopra & Chivukula, 2017) and explore new opportunities available (Kumar et al., 2021). With the voice technology market rising and gaining acceptance worldwide, it becomes necessary to understand consumer acceptance and adoption of a new evolving commerce channel: voice commerce, as little is known about what motivates or inhibits users to adopt voice commerce. The study aims to examine the factors influencing consumer adoption of voice commerce in developing nations like India.

First, while there are numerous studies conducted in this field, understanding what motivates the adoption of voice commerce is still in its infancy stage and requires extensive research efforts by researchers for a better understanding of the subject matter (Ostrom et al., 2019). Second, past literature has made efforts to develop an understanding of the adoption of voice assistants for educational, utilitarian, or hospitality purposes. The use of voice assistants for commerce purposes has still not been studied extensively which makes it necessary to bridge this gap as the world is going online. Third, while the role of factors like perceived enjoyment, perceived usefulness, perceived ease of use, social influence, perceived privacy risk, and trust has been studied in Western nations, there is still a need to examine their influence in Eastern nations like India. Fourth, past studies have focused on particular age groups for data collection, which doesn't give a wide picture of the overall adoption of voice commerce.

This study tries to bridge the aforementioned research gaps and is an effort to develop a holistic understanding for stakeholders about voice commerce. Therefore, this research develops a comprehensive conceptual model by extending the technology acceptance model (TAM) with perceived enjoyment, social influence, perceived privacy risk, and trust to examine factors influencing consumers to develop the behavioral intention to use voice commerce. The developed model was then validated based on data collected from 400 respondents from India using the PLS-SEM technique.

Review of Literature

Voice assistants are conversational agents generally used for basic day-to-day functions like making calls, listening to music, setting alarms, searching for information, and managing smart homes (Hoy, 2018; McLean & Osei-Frimpong, 2019); however, users are developing deeper connections with their voice assistants (Mari et al., 2020a). Though consumer trust in voice assistants is still in its infancy stage, consumers are initiating to make financial interactions and transactions using this technology (Vimalkumar et al., 2021). Voice assistants have thousands of skills and are in-built into numerous applications and websites as voice features. Websites and applications like Google, Google Maps, YouTube, Nykaa, Myntra, Amazon, blinkit, and Swiggy are certain examples of providing voice search features to their users.

E-commerce and Voice Commerce

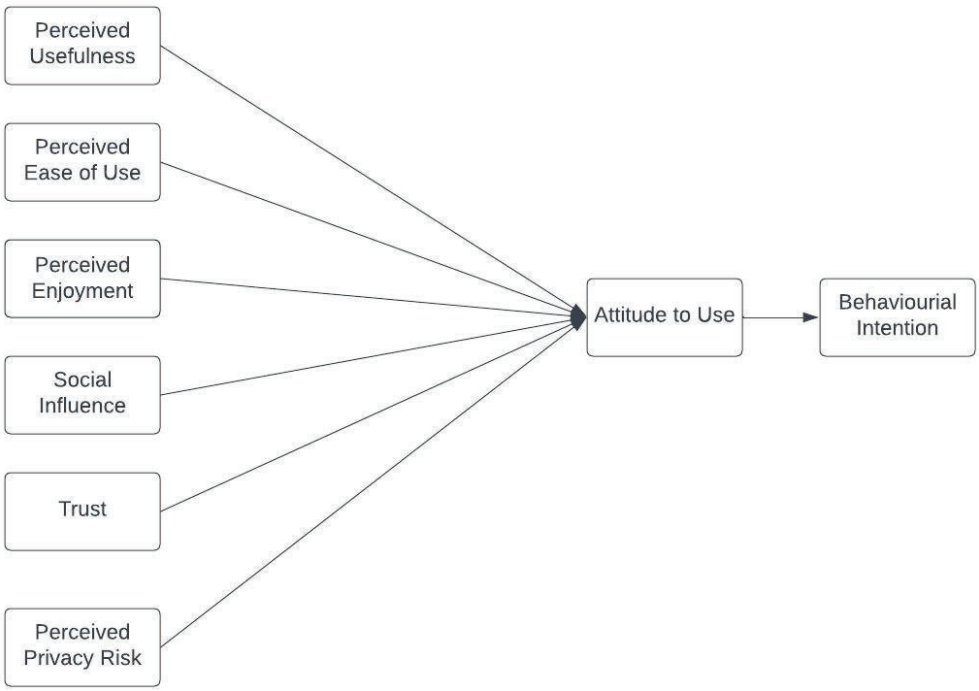
Past studies describe e-commerce as the use of the internet to perform financial transactions. It is basically performing commercial interactions or shopping via laptops and computers using the internet (Kwon & Sadeh, 2004). Transactions performed on mobile phones are basically referred to as Mobile or m-commerce (Cao et al., 2015), which is a subset of e-commerce only. Another subset of e-commerce is voice commerce is performed using natural language processing via voice assistants (Mari, 2019; Mari et al., 2020) like Alexa, Siri, Cortana, and Bixby.

Conceptual Development

Due to the growing acceptance of voice assistants worldwide by users and rising e-commerce channels, researchers have been extensively interested in this field. Thus, it is necessary to study and analyze the existing literature and its trends to gain insights into past findings, discussions, and conclusions. While going through past literature, researchers identified certain factors that influence the attitude and behavioral intention of users toward voice commerce.

Perceived Usefulness

Perceived usefulness in the technology acceptance model (TAM) is defined as the degree of consumer expectation by which an individual perceives that using a particular technology will enhance the user's job performance (Davis, 1989). Perceived Usefulness can also be understood as the degree to which consumers believe that using the given technology or system will help them to accomplish tasks efficiently and effectively (Venkatesh et al., 2003).



Conceptual Model

For this study, it can also be described as the degree to which users of e-commerce perceive that using voice assistants or voice commerce will enable them to achieve improved performance in terms of searching and ordering products and enhance the overall quality of the shopping experience. Past studies have highlighted that users will develop a positive attitude toward voice technology if they perceive it to be useful and reliable (Al Shamsi et al., 2022; Renny et al., 2013). Researchers have found that perceived usefulness influences significantly in terms of online shopping (Indarsin & Ali, 2017).

H1: Perceived Usefulness influences the Attitude to use Voice Commerce significantly.

Perceived Ease of Use

Perceived ease of use is defined as the degree to which using a particular technology would be free of effort and the consumer's level of ease related to the adoption of given system or technology (Davis, 1989). Perceived ease of use helps to examine how effortlessly consumers can adopt and use a given technology. In this study, perceived ease of use is how effortlessly consumers can use voice assistants during online shopping and consumers' perception of the effort required to adopt voice commerce while searching and ordering products. Perceived ease of use has a significant positive influence on consumers' behavioral intention to use voice commerce. This is because the adoption of voice commerce by consumers for online shopping is likely to be influenced by how easy or complex it is to search for products/services and complete the purchase process using voice commerce, either through in-built voice assistants of applications/websites or dedicated home speakers. Past studies have highlighted a significant positive influence of perceived ease of use on attitude toward use (Moses et al., 2013; Zuelseptia et al., 2018).

H2: Perceived Ease of Use influences Attitude to use Voice Commerce significantly.

Perceived Enjoyment

Perceived enjoyment is defined as the degree to which consumer perceives that using a particular technology will be enjoyable aside from the performance benefits derived from using or adopting that given technology (Venkatesh et al., 2007). The construct helps to measure the level of enjoyment resulting from the use of technology like voice commerce in this study aside from any performance or effort advantages arising from the use of voice assistant during online shopping. In this study, perceived enjoyment can be described as the degree of enjoyment and fun consumers perceive from using voice commerce and ordering products using voice technology. When consumers have a positive perception of technology's being enjoyable or fun, they develop a positive attitude to using that technology (Rajan, 2020).

H3: Perceived Enjoyment influences the Attitude to use Voice Commerce significantly.

Social Influence

Social influence is defined as the degree by which a consumer's decision to adopt a particular technology is influenced and motivated by his/her relatives, friends, and family's opinions. Users tend to use and not use certain technologies based on others whose opinions matter in their personal and/or professional lives. Before proceeding with major decisions, people tend to consult their significant others and usually take decisions as per their recommendations only (Venkatesh et al., 2003). For this study, social influence refers to the degree to which consumers perceive that their significant others feel that they should accept and adopt voice commerce or not. Past studies have underlined a significant positive influence on attitude to use the given technology (Al Shamsi et al., 2022; Pitardi & Marriott, 2021).

H4: Social Influence influences the Attitude to use Voice Commerce significantly.

Trust

Trust is described as a psychological state arising from the positive expectations of the intentions or behavior of the other party that comprises the acceptance of vulnerability (Rousseau et al., 1998). This study describes trust as consumers' belief in voice commerce being secure, honest, accurate, and capable of protecting their personal, financial, confidential, and other sensitive information.

H5: Trust influences the Attitude to use Voice Commerce significantly.

Perceived Privacy Risk

Perceived privacy risk is the measure of people's perceptions of risk involved in accepting and adopting the given system and technology. With information technology and artificial intelligent systems capturing loads of consumer data, users tend to develop privacy risk perceptions associated with such technologies (Mittal & Manocha, 2022). In this study, perceived privacy risk is described as a measure of risk perceptions of consumers associated with adopting voice commerce, sharing their debit/credit card details, making financial transactions, and ordering products and services.

H6: Perceived Privacy Risk influences the Attitude to use Voice Commerce significantly.

Attitude to Use and Behavioral Intention

Attitude of use is described as a measure to develop positive feelings and ideas towards using a particular technology. Behavioral intention is described as the user's intent for continued use of that technology. In this study, attitude to use and behavioral intention is used as developing positive feelings towards the use of voice commerce and its continued use in the future, also.

H7: Attitude to Use influences Behavioral Intention towards Voice Commerce significantly.

Objectives

The study aims to explore the consumer adoption, consumer behavior, and usage patterns of Indian consumers to understand consumer behavioral intention to use voice commerce. The key objective of this study is to identify and examine the factors influencing behavioral intention to use voice commerce. The objectives of this study are as follows:

- To identify the factors that influence the consumer behavioral intention to use voice commerce.
- To examine the influence of the factors on consumer behavioral intention to use voice commerce.
- To develop a comprehensive model linking the identified factors and testing the same.

Methodological Tools Administered

The study is cross-sectional in nature. Researchers collected data using the snowball sampling technique from respondents from Delhi NCR with a sample size of 400 respondents using online questionnaire surveys from January 2023 to April 2023. To ensure the reliability and validity of the instrument, pre-testing of the instrument was done by consulting with experts in the subject matter. Again, pilot testing and refinement was done for further improvements of the instrument to ensure accurate results. The questionnaire included questions regarding different factors identified by the researchers using a Likert 5-point scale. Further data were analysed using SPSS and SmartPLS 4: Partial Least Squares Structural Equation Modelling (PLS-SEM). The PLS-SEM model was run using SmartPLS 4 (Ringle et al., 2022) in order to assess measurement and structural models.

The participants were introduced to the aim and objectives of the study. They were also informed about their voluntary participation and that the data would only be used for research purposes. The questionnaire consisted of 40 items that were used to measure 8 constructs in the conceptual model. The items were adopted from past studies and were refined to match the objectives of the study.

Table 1

Items' Description and their Resources

Constructs	Items	Item Description	References
Perceived Usefulness	PU1	"Using Voice Commerce enables me to accomplish shopping online more quickly."	(Canziani & MacSween, 2021; Pal et al., 2020)
	PU2	"Using a Voice Commerce improves my efficiency of online shopping"	
	PU3	"Using a Voice Commerce increases my productivity and performance at my home and workplace."	

	PU4	"Using a Voice Commerce makes my everyday life easier."	
	PU5	"Overall, I find using a Voice Commerce is useful to my life in general."	
Perceived Ease of Use	PEOU1	"Learning Voice Commerce is easy for me."	(Pal et al., 2020)
	PEOU2	"My interaction with is clear and understandable during Voice Commerce."	
	PEOU3	"I find a Voice Assistant easy to use for Voice Commerce."	
	PEOU4	"I think it is easy to use the Voice Assistant for Voice Commerce."	
	PEOU5	"Voice Commerce is easy and does not require a lot of my mental or physical effort."	
Perceived Enjoyment	PE1	"I find using Voice Commerce to be enjoyable."	(McLean & Osei-Frimpong, 2019; Pitardi & Marriott, 2021)
	PE2	"I find it interesting to use Voice Commerce."	
	PE3	"The actual process of using Voice Commerce is entertaining."	
	PE4	"The actual process of using Voice Commerce is truly a joy."	
	PE5	"I have fun using Voice Commerce."	
Social Influence	SI1	"People who are important to me think I should use a Voice Commerce."	(Al Shamsi et al., 2022; Fernandes & Oliveira, 2021)
	SI2	"People who are close to me recommend using a Voice Commerce."	
	SI3	"People who influence my behaviour think I should use a Voice	
	SI4	Commerce." "People whose opinions I value recommend that I use a	
	SI5	Voice Commerce." "I use Voice Commerce because many people are using Voice Commerce."	
Trust	TRUST1	"Voice Commerce is trustworthy."	(Al Shamsi et al., 2022; Pitardi & Marriott, 2021)
	TRUST2	"I think Commerce is reliable."	
	TRUST3	"I believe that Voice Assistants are honest."	
	TRUST4	"I believe that Voice Assistant provides true and accurate information during Voice Commerce."	
	TRUST5	"I believe that Voice Assistant provides unbiased information during Voice Commerce."	
Perceived Privacy Risk	PPR1	"I have my doubts over the confidentiality of my interactions during Voice Commerce."	(Al Shamsi et al., 2022; McLean & Osei-Frimpong, 2019)
	PPR2	"I am concerned to perform a financial transaction via a Voice	
	PPR3	Assistant during Voice Commerce.". "I am concerned that my personal details could be stolen	
	PPR4	and misused during Voice Commerce.". "I am afraid that Voice Assistant might collect my personal information without my acknowledgement during Voice	
	PPR5	Commerce.". "I am concerned about Voice Assistant leaking my personal information without my authorization."	

Attitude to Use	ATT1	"I think it is a good idea to use Voice Commerce."	(Pal et al., 2020; Zeng & Chen, 2022)
	ATT2	"I have positive feelings towards Voice Commerce."	
	ATT3	"I feel it is wise to use Voice Commerce."	
	ATT4	"The thought of using Voice Commerce is appealing to me."	
	ATT5	"Overall, my attitude toward using Voice Commerce is favourable".	
Behaviourial Intention to Use	BI1	"I intend to use Voice Commerce in future"	(Al Shamsi et al., 2022; McLean & Osei-Frimpong, 2019)
	BI2	"I plan to continue to use the Voice Commerce."	
	BI3	"I will recommend using Voice Commerce to my friends and/or family."	
	BI4	"I predict I would continue using Voice Commerce in future.	
	BI5	"I will keep myself updated with the latest voice Assistant technology."	

Results and Findings

The PLS-SEM model was run using SmartPLS 4 (Ringle et al., 2022**)** in order to assess measurement and structural models. The model consists of perceived usefulness (PU), perceived ease of use (PEOU), perceived enjoyment (PE), perceived privacy risk (PPR), social influence (SI), and trust (TRUST) as the exogenous variables affecting the attitude towards the use of voice commerce. Attitude, in turn, is hypothesized to affect the behavioral intention to use voice commerce.

Measurement Model

As the first step of the analysis, the Measurement Model was examined for internal consistency reliability and convergent validity and followed by an assessment of discriminant validity. The values of all three reliability measures i.e., Cronbach's Alpha, Rho_A and Composite Reliability were found to be higher than the recommended threshold of 0.7 (Hair et al., 2022), thus establishing the reliability of the constructs. The average variance extracted (AVE) of all the constructs were also found to be more than 0.5 establishing the convergent validity of the constructs (Chin et al., 1998). The results of reliability and convergent validity analysis are presented in Table 2.

Table 2

Reliability and Convergent Validity

	Cronbach's Alpha	**rho_A**	**Composite Reliability**	**Average Variance Extracted (AVE)**
Attitude	0.889	0.912	0.919	0.694
Behavioral Intention	0.834	0.839	0.878	0.591
Perceived Usefulness	0.844	0.899	0.883	0.603
Perceived Ease of Use	0.864	0.835	0.890	0.620
Perceived Enjoyment	0.865	0.879	0.901	0.647
Perceived Privacy Risk	0.868	0.888	0.902	0.649
Social Influence	0.913	0.920	0.934	0.741
Trust	0.868	0.869	0.870	0.578

Discriminant validity was assessed using the HTMT criterion (Henseler et al., 2015) and the results are given in Table 3. As all HTMT values are below 0.85, the discriminant validity of the constructs is established.

Table 3

Discriminant Validity - HTMT Ratio

	ATT	BI	PE	PEOU	PPR	PU	SI	TRUST
Attitude								
Behavioral Intention	0.085							
Perceived Enjoyment	0.080	0.124						
Perceived Ease of Use	0.072	0.303	0.053					
Perceived Privacy Risk	0.123	0.127	0.091	0.059				
Perceived Usefulness	0.117	0.050	0.069	0.074	0.086			
Social Influence	0.105	0.056	0.238	0.097	0.081	0.059		
Trust	0.067	0.221	0.068	0.394	0.077	0.104	0.056	

Structural Model Assessment

The Structural Model was assessed for the value and significance of path coefficients. For determining the significance of the coefficients, the Bootstrapping procedure was run with 5000 subsamples and results have been presented in Table A.

Table 4

Path Coefficients

Direct Effects			
Path	**Coefficient**	**T Statistics**	**p Values**
Attitude -> Behavioral Intention	0.176**	3.095	0.000
Perceived Usefulness -> Attitude	0.128*	2.28	0.023
Perceived Ease of Use -> Attitude	0.135*	2.493	0.012
Perceived Enjoyment -> Attitude	0.087	1.495	0.135
Perceived Privacy Risk -> Attitude	-0.097*	2.107	0.035
Social Influence -> Attitude	0.108*	2.042	0.041
Trust -> Attitude	0.146#	1.711	0.087

Note: * & ** show significant at 5% and 1% respectively # shows significant at 10%

All the path coefficients for Attitude as the dependent variable were found to be significant, lending support for all the hypothesized relationships in the model except that of perceived enjoyment. Also, trust as a variable affecting attitude was found to be significant only at 10%. The variables of perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), and trust (TRUST) were found to have a positive influence on Attitude towards the use of voice commerce while the variable perceived privacy risk was found to have a significant negative effect on the attitude towards use of voice commerce as hypothesized. The results also confirm a significant positive effect of attitude on behavioral intention.

Table 5

Explanatory Power, Predictive Power & Model Fit

Explanatory Power: R Square	**R Square**	**R Square Adjusted**
Attitude	0.65	0.62
Behavioral Intention	0.61	0.57
Predictive Power: Q^2		
Attitude	0.281	
Behavioral Intention	0.242	
Effect Size: f Square		
Attitude -> Behavioral Intention	0.38	
Perceived Usefulness -> Attitude	0.41	
Perceived Ease of Use -> Attitude	0.27	
Perceived Enjoyment -> Attitude	0.08	
Perceived Privacy Risk -> Attitude	0.11	
Social Influence -> Attitude	0.09	
Trust -> Attitude	0.18	
Model Fit		
SRMR	0.64	

Table 5 presents the results of quality criteria used to determine the explanatory and predictive power of the model along with Model Fit. Model Fit assessment was carried out using the estimation of the standardized root mean square residual (SRMR) value. As the SRMR value for the estimated model was found to be 0.064, which is below 0.08, the model exhibits a good fit (Hair et al., 2022).

The R^2 and adjusted R^2 values of the endogenous variables of behavioral intention and attitude are above 0.6, which exhibits good explanatory power of the model. In terms of individual variable effect size on attitude as the dependent variable, perceived usefulness has a large effect, perceived ease of use and trust have a medium effect, and perceived enjoyment, perceived privacy risk, and social influence have a small effect as per the guidelines of 0.02, 0.15, and 0.35 for small, medium, and large effects respectively (Cohen, 1988). Attitude has a high effect size on Behavioral Intention.

The PLS model used for this study was also assessed for predictive accuracy using the Q^2 value based on the PLSPredict procedure (Sarstedt et al., 2014). Q^2 values of latent variables were found to be above 0.25 for the model, depicting medium predictive power of the PLS model of the study; it is suggested that values higher than 0, 0.25 and 0.50 depict small, medium, and large predictive relevance of the PLS-path model (Hair et al. 2019).

Discussion and Conclusion

The first objective of this study was the identification of the factors that influence consumer behavioral intention to use voice commerce. Researchers identified from past literature and a survey questionnaire certain factor that influence consumer behavioral intention to use voice commerce. Researchers also aimed to examine the influence of the identified factors thereafter. The variables perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), and trust (TRUST) were found to have a positive influence on attitude towards the use of voice commerce; the variable perceived privacy risk was found to have a significant negative effect on the attitude towards use of voice commerce.

However, unlike previous studies, researchers underlined that perceived enjoyment doesn't significantly influence attitude to use voice commerce. The third objective was to develop a comprehensive research model and validate it with empirical investigation. For this, a survey was conducted that provided support to certain hypotheses and showed that attitude to use has a positive influence on consumers' behavioral intention towards voice commerce. The developed model was validated by the researchers based on data collected from 400 respondents across India using the PLS-SEM technique. Most consumers develop a positive attitude to use due to convenience, ease of use, efficiency, and social influence provided by voice assistants. As in past studies, it was found that still there is a need to develop trust relationships between consumers and voice assistants to enhance the use of voice technology, especially for transactional purposes.

When product developers and marketers will ensure customers about the security and privacy of their personal and financial information, it will encourage customers to adopt voice assistants not only for utilitarian and entertainment purposes, but for voice commerce. Also, measures should be taken to improve the voice speech interface to improve the efficiency and speed of voice commerce transactions. Users tend to adopt new technologies that are efficient and help them to improve their current performance (Mari et al., 2020). Product developers need to make the whole process entertaining, quick, and less cumbersome to attract a larger audience. Apart from providing managerial implications, this study adds knowledge to academic literature by improving the relationships between the factors studied. It aids to bridge the theoretical gap existing in this field of research.

Limitations and Future Research

Though this study provides some valuable insights regarding consumer adoption of voice assistants and voice commerce in developing nations, there are several limitations that offer opportunities for future research. First, data was collected from the respondents from Delhi NCR, which narrows the scope of generalization of results for other geographical regions. Thus, this study is based on a limited geographical region. Future studies in other metropolitan or rural regions could be a great addition to this field of research. Second, this study identifies perceived usefulness, perceived ease of use, perceived enjoyment, social influence, perceived privacy risk, and trust as factors influencing attitude and behavioral intention. Future studies may identify and empirically validate certain other factors, such as anthropomorphism, to discuss the trends in

adoption of voice commerce by consumers across the globe. Third, this study used voice assistant in general and doesn't focus on a single brand or application to generate better success rates among various voice assistant applications or e-commerce platforms. Future studies may study consumer awareness and consumer behavior towards single brands or e-commerce websites/applications using voice assistants. Comparative studies in this field may also provide some interesting insights and can be beneficial for marketers and product developers. Fourth, as this study is cross-sectional in nature, it limits the understanding of change in consumer behavior with time and experience. Longitudinal studies dealing with change in experience and usage may bridge certain gaps prevalent in this field of research.

Last, this study limits its findings and conclusions to voice commerce, which involves transactional interactions by the customers. People do hesitate to share their personal and financial information but may readily adopt voice assistants or similar technology for other daily activities, like calling and listening to songs. Future researchers may focus on all other applications that voice assistants provide and then even draw conclusions using comparative measures between transactional and non-transactional consumer interactions with voice technology. Again, this study uses quantitative measures to draw conclusions. Future researchers may collect data through interviews and observations to provide qualitative insights, as well.

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