



Hey Alexa, Make a Phone Call! The Impact of AI Voice Assistants on Consumer Perception & Behaviour

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DOI - 10.5281/zenodo.15532433

Abstract:

Hey Alexa, make a phone call!" Voice assistants like Google Assistant, Siri, and Alexa have changed the interaction of consumers with technology and mostly young consumers enjoy using voice assistants. As voice assistant adoption rates have increased there is a lack of understanding of consumer perception and their behaviour towards voice assistants specifically in the Indian context. Therefore, this study tries to filled this gap by examining consumer perception and the purpose behind the continuous use of voice assistants among individuals. A quantitative research approach with stratified random sampling technique is used and data were collected from 150 respondents in the Dehradun region. Further, data was analysed with the help of SPSS software using percentage analysis. The study examined intriguing results that majority of consumers prefer convenience offered by voice assistants. Some respondents use these AI technologies regularly, while others worry about privacy and security. Some may think consumers mostly utilise voice assistants on smartphones (Ok Google, Hey Siri) and smart speakers (Hey Alexa) but that's not always the case. Hence, the findings of study can assist product developers and marketers to meet consumers' needs by offering customised services, privacy concerns, and multilingual support giving them a competitive edge.

Keywords- *Artificial Intelligence, Consumer Perception, Consumer Behaviour, Voice Assistant.*

Introduction:

"Have you ever used the phrase 'OK Google' to activate Google Assistant on your smart devices or any other voice assistants to manage your daily tasks? Have you ever paused to wonder how this artificial intelligence technology is transforming your life in ways you never imagined?" In recent years, artificial intelligence technologies have been one of the fastest-booming technologies in today's world and have primarily changed the entire modern life of humans, such as how they live, work and communicate with each other. COVID-19 caused a tremendous shift from the traditional environment to an online

environment and boosted exposure to innovative technologies (Barman, 2022; Shirmila & R, 2022). The rapid advancement of artificial intelligence has created a debate and excitement about its potential to transform entire industries. It is already broadly used in everything from smartphones to self-driving cars. Artificial intelligence has been stealing the show by adopting voice-based artificial intelligence (Mittal & Manocha, 2022) which has seen remarkable growth and is quickly adopted by millions of individuals around the world (Guzman, 2019; McLean & Osei-Frimpong, 2019).

In accordance with the latest report published by Market Research Future, it is anticipated that the market for voice assistants would grow by USD 42.8 billion by the year 2032 and demonstrate a compound yearly growth rate (CAGR) of 9.9% during the period of 2024 - 2032. Another report by Google 2020 revealed that 27% of the online population at the global level use voice assistants on their mobile devices. The report Adobe Analytics Survey projected the common search activities with the help of voice assistants by users on their smart speakers include music (70%), weather forecast (64%), entertaining queries (53%), online searches (47%), news update (46%) and direction request (34%).

The most popular voice-based artificial intelligence technologies among Indians are Amazon's Alexa and Google's Google Assistant (Gemini AI). Many researchers have found that talking assistants are widely available in consumer segment and are being rapidly adopted by consumers. This may be due to the fact that consumers are more likely to be engaged in personalisation conversation comparable to those between humans (McLean et al., 2020). Such robotic and personalised conversations on electronic devices may fulfill the particular needs of consumers; on the other hand, brands can take advantage of this by enhancing their service efficiency (Glas et al., 2017). Sometimes, consumers hesitate due to trust issues and privacy concerns to use talking assistants which involve sharing bank details or other payment methods like shopping online.

A growing number of consumers all across the world are becoming habitual to using talking assistants (McLean et al., 2020). However, there is a limited understanding of how consumers perceive and behave towards artificial intelligence technology that is based on voice-based assistants. As a result, the purpose of this study is to fill the aforementioned gap by

conducting an analysis of consumer perception and behaviour towards voice-based artificial intelligence among citizens of India.

Voice Assistants:

Have you ever activated the Google Assistant on your devices just by saying 'Ok Google' and asked about her age? She always replies, *"I was launched in 2016, so technically, I'm pretty young. But I've learned so much! I hope I'm wise beyond my years"*. When you activate the Alexa and ask the same question, sometimes she replies, *"She is 5"* and some other time replies, *"finished her 5th trip around the sun and now she is working on another one."* However, when you ask *"Hey Siri, what is your age?"* question to 'Siri' voice assistant embedded into Apple's, then s/he says, *"Well, I am no Spring Chicken. Or, Winter Bee. Or Summer Squid, or Autumnal Aardvark..."*.

Voice assistants, also known as talking assistants are a type of artificial intelligence technology (Poushneh, 2020) which is the conversational assistants embedded into smartphones, smart speakers, smart watches, smart cars, smart TVs and laptops which provide entertainment allowing users to do multiple tasks simultaneously (Mittal & Manocha, 2022). Voice assistants have transformed the lifestyle of consumers by modernising their daily activities. They offer personalised experiences from online shopping and entertainment to managing smart home devices by understanding consumer preference and behaviour. These artificial intelligence technologies provide users instant access to information, making phone calls, ordering food, listening to music, etc. They also enable a hands-free experience and facilitate multitasking, thereby saving users time and effort (Hoy, 2018). Voice assistants also enabled seamless integration with e-commerce platforms (Lopatovska &

Williams, 2018). This shift has not only boosted consumer efficiency but also influenced their decision-making process.

Table 1:

The following table shows the percentage of questions that voice assistants understood and answered correctly.

VOICE ASSISTANTS	UNDERSTOOD QUESTIONS	ANSWERED CORRECTLY
GOOGLE ASSISTANT	100%	92.9%
SIRI	99.8%	83.1%
ALEXA	99.9%	79.8%

Source: [Statista](#).

Literature Review:

A study on the growing integration of voice and text-based assistants into humans' daily lives and associated concerns regarding privacy, trust and security highlights the overlap between these perceptions and promotes the need for developing trustworthy artificial intelligence systems that address user concerns (Leschanowsky et al., 2024). Emotional and performance aspects are the two significant predictors that affect whether people prefer to use voice assistants or not, therefore, revealed that users who are less creative are highly influenced by quality value, while experienced users more affected by social value (Molinillo et al., 2023). Young adults are also influenced by motivation and trust, product features, social influence and effort expectancy, whereas individuals who are middle-aged and older are influenced by motivation and trust, facilitating conditions and performance expectancy (Zhong et al., 2022). The impact of customer trust, interaction, perceived risk and novelty value on brand loyalty for artificial intelligence-based smart gadgets with a particular emphasis on Apple's Siri revealed that consumer trust and interaction with artificial intelligence-based supported devices

positively influence brand loyalty, while perceived risk negatively impacts brand loyalty (Hasan et al., 2021). The seven personality traits that are expressed by the digital assistants Cortona from Microsoft, Google Assistant from Google, and Alexa from Amazon have an impact on the consumer's attitude and behaviour that voice assistants portrayed functional intelligence, creativity and sincerity which significantly improved consumers' perceived control and focused attention during interactions. This in turn, encouraged exploratory behaviour in consumers which ultimately leads to increased satisfaction in consumer and a higher willingness to continue the usage of voice assistants (Poushneh, 2020).

Objectives of Study:

The main aim of this study is to gain a deeper insights of consumer perception and investigate the reasons behind the continued use of talking assistants among individuals. Therefore, the main objectives of the research are:

1. To investigate the consumer perception towards voice-based assistants among consumers in India.
2. To analyse the purpose of Indian consumers using voice-based assistants.

Research Methodology:

This study is based on quantitative research. The researcher used a descriptive survey research design to analyse the consumer perception and behaviour of Indian consumers towards voice assistants and analyse the purpose of using voice assistants among Indian consumers. The data was collected with the help of a stratified random sampling technique from 150 respondents from the Dehradun region. The questionnaire included questions related to consumer perception and the purpose behind the continued usage of voice assistants among individuals. Additionally, data analysis was conducted using SPSS

software, where percentage analysis was applied.

Findings of Study:

The study was conducted in the Dehradun region among 150 respondents, providing valuable insights into their demographic and socioeconomic profiles. 40% of the total respondents are aged between 21-30 years and the majority of total respondents are male (70%). Regarding education, 39.3% of individuals are pursuing or have completed their undergraduate studies, while 36% hold postgraduate

qualifications. Students accounted for the most significant group with 39.3%, followed by self-employed individuals (24.7%) and working professionals (24%). When the researcher examined the income level of individuals, it was found that over half of the respondents, i.e., 54%, earn less than ₹10,000 monthly and 20% fall in the ₹25,001-₹50,000 income level. These results highlighted a young, male-dominated respondent group primarily consisting of students with diverse income and education levels.

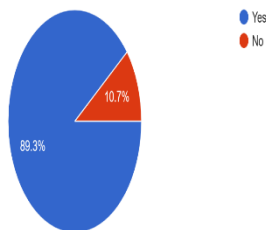
S. No.	Particulars	Component	Respondents (in number)	Respondents (in %)
1.	Age	Below 20	38	25.3%
		21-30	60	40%
		31-40	32	21.3%
		41-50	14	9.3%
		51-60	4	2.7%
		60 Above	2	1.3%
2.	Gender	Male	105	70%
		Female	45	30%
3.	Qualification	Below senior secondary education	12	8%
		Higher secondary education	17	11.3%
		Under graduation	59	39.3%
		Post graduation	54	36%
		Other	8	5.3%
4.	Occupation	Student	59	39.3%
		Self-employed	37	24.7%
		Working professional	36	24%
		Homemaker	16	10.7%
		Other	2	1.3%
5.	Monthly income	Less than ₹10,000	81	54%
		₹10,001 - ₹25,000	17	11.3%
		₹25,001 - ₹50,000	30	20%
		₹50,001 - ₹1,00,000	15	10%
		Above ₹1,00,000	7	4.7%

However, findings highlight that marketers and product developers should align their marketing strategies with consumer needs and financial capacities which helps them earn a competitive advantage, promote wider adoption and enhance the utility of talking assistants for diverse consumer segments.

Discussion and Conclusion:

Chart 1: Consumer perception towards voice assistants

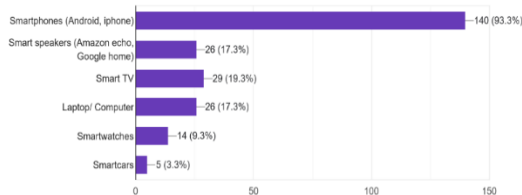
Do you enjoy using voice assistants like Siri, Alexa and Google assistant?
150 responses



An attempt was made to examine the consumer perception towards voice assistants AI technology among consumers in India. It was found that 89.3% of respondents enjoyed using voice assistants like Hey Siri, Alexa, Ok Google and Hey Cortona. However, it can be concluded that most respondents perceived voice assistant positively. However, companies still need to make voice assistants more personalised, accurate and capable of understanding many languages and accents among consumers. The findings highlight that marketers and product developers should provide a digital literacy and user-friendly interface of voice assistants among old-aged individuals and individuals with lower qualification levels because these individuals may have lack of awareness and confidence in such tools. Marketers should also provide free or low-cost versions of voice assistants which can help low-income individuals.

Chart 2: Platforms mostly used by respondents for voice assistants

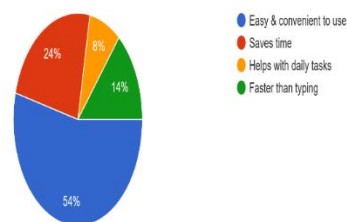
On which platforms do you mostly use voice assistants?
150 responses



The researcher examined that most respondents, i.e., 93.3% use their smartphones for voice assistants. This dominance can be attributed to the easy accessibility of Androids and iPhones as well as the seamless interaction with Siri and Google Assistant etc, in their smartphones. The growing popularity of Smart TVs, accounting for 19.3% of respondents using this platform may be due to the growing trend of voice-activated controls for entertainment purposes. Similarly, Laptops/computers and Smart speakers like Amazon Echo and Google Home account for 17.3% of respondents respectively. Smart speakers are favoured by users for hands-free convenience in homes for daily tasks like setting reminders, listening to music, etc., and users favour laptops/computers because they conduct instant information searches through human vocals faster than typing manually. While 9.3% of respondents use voice assistants in their smartwatches because they are compact and easy to carry specifically useful for fitness tracking. However, smart cars have the lowest usage platform for voice assistants among individuals, likely because they are more expensive. In order to improve user engagement and adoption across platforms, manufacturers and developers should focus on enhancing accuracy, speed and address the data privacy concerns that can attract a broader consumer segment.

Chart 3: Purpose of using voice assistants by respondents

Why do you like using voice assistants?
150 responses



The researcher examined consumers' key purposes for using voice assistance, such as 'Ok Google,' 'Hey Siri,' etc. A majority of respondents, 54%, indicated that the simplicity of conversing with these talking tools was their primary purpose. This implies that individuals prefer hands-free and effortless experience in their devices which are embedded with talking assistants. Moreover, 24% of participants selected time-saving as an additional reason for using voice assistants indicating that voice assistants help consumers in managing their busy schedules more flexibly by using their vocals. Other vital purposes of respondents that cater to the use of voice assistants are faster searches through human voices compared to manual typing (14%) and help with daily tasks (8%) like making a phone call, listening to music, setting up daily schedule reminders, and other personalised works. These findings draw attention to the importance of voice assistants for enhancing productivity and simplifying routine tasks. However, the lower percentage of voice assistant users leveraging them for task management suggests room for functionality and user engagement improvement. To tackle this issue, developers could enhance task-specific features and offer greater personalisation.

Limitations and Future Direction:

The study has certain limitations. Firstly, this study is geographically limited to the Dehradun region, limiting its generalisability to other areas. Thus, future research can explore other regions or conduct a comparative analysis across different regions. Secondly, this study does not focus on a single brand but is based on multiple brands delivering voice assistant services to consumers. So, future research can examine consumer perception and their behaviour towards a single brand or may conduct a comparative study between Amazon, Apple, and Google delivering

voice assistant tools. Lastly, this study relies on quantitative data which may not capture the more profound understanding of consumer emotions. Therefore, for future research, a mixed method can be used to understand consumer perception and their behaviour towards voice assistants comprehensively.

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