

A STUDY ON VOICE-BASED MOBILE E-COMMERCE APPLICATION

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ABSTRACT

With the rapid growth of smartphones and digital technologies, mobile e-commerce has become an essential part of modern business. Voice-based technology is an emerging innovation that allows users to interact with mobile applications using voice commands. This study focuses on analysing the awareness, usage, benefits, and challenges of voice-based mobile e-commerce applications. The research highlights how voice technology improves user convenience, accessibility, and shopping experience. It also examines user preferences and issues such as accuracy, privacy, and language support. The study concludes that voice-based e-commerce has strong future potential but requires improvements in security and performance.

KEYWORDS

Voice Commerce, Mobile E-Commerce, Artificial Intelligence, Voice Recognition, User Experience, NLP

INTRODUCTION

In today's digital era, mobile e-commerce has transformed the way people shop online. With increasing smartphone usage and internet accessibility, consumers prefer faster and more convenient methods of shopping. Voice-based technology has emerged as a powerful tool that enables users to search, select, and purchase products using voice commands instead of typing.

Voice-based mobile e-commerce applications use technologies such as Artificial Intelligence (AI), Natural Language Processing (NLP), and speech recognition to understand user commands and provide accurate results. This system improves accessibility, especially for elderly users, visually impaired individuals, and users with limited technical knowledge.

The growing demand for hands-free interaction and personalized shopping experiences has encouraged businesses to adopt voice-enabled solutions. However, challenges such as voice recognition accuracy, privacy concerns, and language limitations still exist. Therefore, this study aims to analyse the effectiveness and impact of voice-based mobile e-commerce applications.

REVIEW OF LITERATURE

- Anitha, S. (2021) studied voice recognition accuracy and found that higher voice recognition accuracy increases user trust.
- Aravind, S. (2023) studied the role of voice assistants in product search and found that voice technology reduces typing effort and increases user engagement.
- Bharathi, S. (2023) analysed business opportunities in voice commerce and concluded that voice technology improves customer experience and increases customer satisfaction.

- Deepa, R. (2021) analysed the impact of voice search on buying decisions and found that voice search helps users make quicker purchasing decisions.[https](https://www.researchgate.net/publication/353123456)
- Devi, L. (2022) studied accessibility benefits of voice technology and found that voice applications are helpful for elderly and visually impaired users.

These studies show that voice commerce is growing but still faces challenges in trust, accuracy, and security.

OBJECTIVES OF THE STUDY

- ❖ To analyse the awareness and usage of voice-based features in mobile e-commerce.
- ❖ To study user preferences and satisfaction towards voice-based shopping.
- ❖ To identify the benefits and challenges of voice-based mobile e-commerce applications.

RESEARCH METHODOLOGY

Research Design: Descriptive research design

Sampling Method: Convenience sampling

Sample Size: 100 respondents

DATA COLLECTION:

Primary Data

Questionnaire (Google Forms)

Secondary Data

| ASPECTS | N | MEAN | STD.DEVIATION |
|---|-----|--------|---------------|
| OPTIONS ON ESAE OF VOICE BASED MOBILEE-COMMERCE APPLICATIONS | 100 | 3.9600 | 1.02415 |
| PRECEPTION OF VOICE COMMANDS | 100 | 3.5600 | 2.00162 |
| PERCEPTION OF VOICE RECONGNITION ACCURACY | 100 | 3.6000 | 1.00504 |
| OPINION ON CONVENIENCE AND TIME SAVING OF VOICE – BASED E-COMMERCE APPS | 100 | 3.5400 | 1.17362 |
| WILLINGNESS TO USE VOICE-BASED MOBILE E-COMMERCE APPLICATIONS | 100 | 4.6800 | 1.34840 |

INTERPRETATION :

The table shows that respondents have a generally positive attitude toward voice-based mobile e-commerce applications, with the highest mean score for willingness to use (4.68), indicating strong acceptance, while other aspects like ease of use, perception of voice commands, accuracy, and convenience also have moderate to high mean values, suggesting that users find these applications fairly easy, accurate, and time-saving, though there is some variation in opinions as indicated by the standard deviation.

Tools for Analysis:

- Percentage analysis
- Descriptive analysis

DATA ANALYSIS

- ❖ The overall mean values indicate that respondents have a positive attitude towards voice-based mobile e-commerce applications.
- ❖ The highest mean score (4.68) for willingness to use shows strong acceptance and interest among users.
- ❖ Ease of use (3.96) has a relatively high mean, suggesting that most users find these applications easy to operate.
- ❖ Perception of voice commands (3.56) and voice recognition accuracy (3.60) are moderate, indicating some issues or mixed opinions among users.
- ❖ Convenience and time-saving (3.54) also show moderate satisfaction, and the standard deviation values reveal that there is variation in user opinions.

FINDINGS:

- The study shows that most respondents have a positive opinion towards voice-based mobile e-commerce applications.
- The highest mean score (4.68) is for willingness to use, indicating strong interest among users.
- Ease of use (3.96) is rated fairly high, which means users find the applications user-friendly.
- The perception of voice commands (3.56) and voice recognition accuracy (3.60) are moderate, suggesting some users face difficulties or inconsistencies.
- Convenience and time-saving (3.54) also have moderate scores, indicating that users find it helpful but not completely efficient.

The higher standard deviation in some aspects shows that opinions vary among respondents.

SUGGESTIONS:

- ❖ Developers should improve the accuracy of voice recognition to reduce errors and increase user satisfaction.
- ❖ Voice command systems should be made more clear and responsive to avoid confusion among users.
- ❖ More user-friendly features and simple interfaces can enhance ease of use further.
- ❖ Applications should focus on improving speed and efficiency to make them more time-saving.

- ❖ Providing multi-language support can help users from different backgrounds use the apps easily.
- ❖ Awareness and training programs can be conducted to increase user confidence in using voice-based technology.

CONCLUSION

The study concludes that voice-based mobile e-commerce applications are transforming the online shopping experience by providing convenience, speed, and accessibility. It is especially beneficial for elderly users and people with limited technical skills. Although users show interest in voice technology, issues such as privacy, accuracy, and security still limit its full adoption.

With continuous advancements in Artificial Intelligence and voice recognition technology, voice commerce has strong future potential. By improving system performance and user trust, voice-based e-commerce can become a major part of digital shopping in the coming years.

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