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An Analysis of Consumer Behavior Toward Mobile Shopping Applications: A Field Study

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Introduction

The adoption of mobile technologies and AI has dramatically shifted the relationships consumers have with digital marketplaces. Mobile shopping apps, along with smart assistants, now form an integral part of consumers' shopping routines, providing tailored services and real-time support. With the advent of conversational commerce and voice-operated devices such as Amazon's Alexa and Google Assistant, gaining insight into the drivers motivating consumers to adopt these technologies is imperative for any business looking to compete in the digital economy (Balakrishnan & Dwivedi, 2024; Aw et al., 2022)

There is existing literature on psychological, technological, and contextual factors that define consumer behavior in mobile and voice-assisted shopping contexts. For example, The Technology Acceptance Model (TAM) considers perceived ease of use and usefulness as major indicators of user adoption (Davis, 1989; Bagozzi, 2007), while other studies shift focus to trust and privacy or even anthropomorphism as major determinants (Gefen et al., 2003; Blut et al., 2021). Furthermore, digital voice assistants are considered more than task automation tools. They are now viewed as essential strategic touchpoints in the consumer journey that shape not only purchase decisions but also foster brand loyalty and impact consumer satisfaction (Grewal et al., 2022; Gelbrich et al., 2021)

Examples like Amazon's 2024 introduction of Rufus, a generative AI based conversational shopping assistant, marked a new advancement in the use of AI within customer experience (Amazon, 2024). These examples indicate a need to understand the tools placed within reach of consumers and how their perceived value shapes usage behavior.

Other studies mention perceived coolness, social influence, and emotional engagement as determinants of smart assistant adoption (Ashfaq et al., 2021; Fernandes & Oliveira, 2021)

As a case study, this research focuses on mobile commerce apps and shopping voice assistants to examine customer engagement and interaction. It draws upon motivation theories such as the Technology Acceptance Model (TAM) along with the S-O-R (Stimulus-Organism-Response) model to analyze motivation as a blend of attitudes, expectation, evaluation, and perception within a user's smart commerce ecosystem (Elgammal et al., 2025; Al-Fraihat et al., 2023).

In addition, the work is complemented by more recent literature that highlights the added complexity of consumer valuation in the context of mobile and voice commerce (Schultz & Kaiser, 2025)

Problem Statement

With mobile shopping apps and voice assistants becoming increasingly commonplace in today's shopping landscape, their adoption and continued usage has not been consistent across demographics or geographic regions. Even when adoption barriers like the user experience, convenience, and personalization are addressed, and technologies promise added convenience, users struggle to embrace them due to privacy issues, trust, technological intricacies, lack of value, or several other reasons. Furthermore, frameworks such as the Technology Acceptance Model, or TAM, and Stimulus-Organism-Response, or SOR, do lack insight regarding the blend of mobile commerce alongside voice technologies.

In addition to these concerns, the recent introduction of AI powered assistants, such as Rufus by Amazon, raises more questions as to how consumers assess and interact with sophisticated shopping interfaces. Existing literature has not sufficiently considered the interplay of social and technological factors and psychology---specifically trust and perceived usefulness---within the intents of behaviors in mobile and conversational commerce.

This is why the study focuses on the following problem:

How do voice shopping assistant and mobile shopping applications interact, and what factors in consumer behavior are essential to these applications' interaction behavior? How do these elements interrelate to influence users' their behavioral adoption and usage?

Significance of the Study

This study is significant for more than one reason both in theory and practice. From a theory standpoint, it adds to the growing literature on mobile consumer shopping applications by analyzing voice shopping assistants, one of the newer technological innovations in the e-commerce sector. While past research has focused on these technologies individually, limited studies have looked at how their combined use impacts consumer decisions, perceptions, and behaviors.

Using the Technology Acceptance Model (TAM) and SOR (Stimulus-Organism-Response) frameworks, this study complements the existing knowledge on consumer interactions with smart shopping technologies.

Practically, this study provides businesses, mobile shopping application developers, and marketers concrete information that will assist them in improving the design, features, marketing, and overall experience of AI shopping assistants guided by the findings from this research. Organizations can develop better business tailored strategies through understanding the major determinants of acceptance like trust, emotional involvement, perceived usefulness, social engagement, and collective deemed policies targeted towards enhanced user experience, organizational satisfaction, and visceral loyal participation. Through the study, other expectations from the

consumers together with reasons that slow down the shift to advanced technologies in emerging markets will also be explored.

In conclusion, this study not only fills a gap in the literature but also contributes to the design of seamless, safe, and more engaging digital shopping experiences relevant to the transforming habits and behaviors of consumers.

Research Objectives

The scope of this study revolves around investigating the determinants of consumer attitude toward shopping on mobile applications and the use of digital voice assistants. In particular, this study will:

Identify the key psychological, technological, as well as social factors impacting the consumer adoption for shopping applications and AI-driven voice assistants.

Analyze the relationships between usefulness, ease of use, trust and user attitudes toward smart shopping technologies.

Explore the impact of emotional engagement, perceived value, and social impact on consumers' intention behavior to use mobile and conversational commerce.

Implement and analyze relevant theoretical frameworks (for example TAM and SOR) concerning mobile and voice-assisted shopping.

Formulate actionable strategies for businesses and application developers focused on enhancing user engagement, satisfaction, and loyalty within online shopping platforms.

Research Questions

Which primary drivers shape shopper engagement with mobile apps for shopping and voice-activated shopping assistants?

In what ways do usefulness, ease of use, and trust impact shopping technologies attitude and intention among consumers of different demographics?

How significant are emotional engagement and perceived value with regard to the adoption of mobile and voice assisted commerce?

In what manner do social factors impact consumer decision-making and preferences in mobile and conversational commerce?

How well do the Technology Acceptance Model (TAM) and the Stimulus-Organism-Response (SOR) models explain ecommerce consumer behavior?

Research Hypotheses

Drawing from the literature as well as the research objectives, the following hypotheses are formulated:

H1: The perception of usefulness mobile shopping applications and voice assistants offer will significantly enhance consumers' intention to use them.

H2: A positive perception of ease of use significantly influences how consumers form attitudes toward the adoption of smart shopping technologies.

H3: Users' trust towards mobile applications and voice assistants greatly influences their behavioral intention to use these technologies.

H4: The likelihood of continued usage is influenced positively by emotional engagement with the shopping platform.

H5: Technological features such as usability and personalization influence user satisfaction through perceived value.

H6: Social impact substantially affects consumers' decisions regarding the adoption of mobile and voice shopping assistants.

H7: Use of both Technology Acceptance Model (TAM) and the Stimulus-Organism-Response (SOR) framework provides strong predictive power for consumer behavior in mobile and conversational commerce contexts.

Literature Review

Davis (1989) introduced the Technology Acceptance Model (TAM) to explain user adoption of new technologies with two constructs: perceived usefulness and perceived ease of use. Later, in 2007, Bagozzi extended this model advocating for a more holistic approach that included additional motivational and social factors.

In the case of online trust, Gefen, Karahanna, and Straub (2003) developed an integrated model of TAM and trust theory, proving that trust is a strong determinant of a consumer's willingness to participate in online shopping activities.

Assarut and Eiamkanchanalai (2015) studying the adoption of mobile commerce found that personal attributes as well as values related to consumption significantly impact behavioral intentions toward shopping via mobile devices. In the same line of thinking, Elgammal et al. (2025) used the Stimulus-Organism-Response (SOR) framework and argued that mobile commerce ubiquity directly enhances user engagement as long as product reputation and brand trust mediate the effect.

Gross (2017) looked in detail at shopping through mobile devices, focusing on the relationship between technological comfort, usability, and continued engagement among the digitally active population.

Concerning digital voice assistants, Aw et al. (2022) noted that products like Alexa improve customer experience greatly by providing immediate assistance, resulting in better brand engagement. In relation to smart speaker adoption, Ashfaq, Yun, and Yu (2021) noted that perceived coolness and emotional value are strong predictors of user attitude.

Fernandes and Oliveira (2021) further noted that automation of service encounters using voice assistants enhance customer

satisfaction for users who appreciate high intelligence and responsiveness of a system.

In more recent work, Schultz and Kaiser (2025) explored mobile and conversational commerce analyzing consumer value dimensions alongside mobile and conversational commerce, stressing the importance of interactivity and customization and perceived control as key elements informing customers' value.

Also considering the adoption of smart voice assistants from a complexity theory perspective, Al-Fraihat, Alzaidi, and Joy (2023) proposed that multi-dimensional non-linear behavioral patterns drive the adoption, especially where shopping tasks are high on cognitive complexity.

The practical example of recent academic work, especially concerning natural language processing and real-time personalization, is the 2024 Amazon release of Rufus, an AI conversational assistant, which reflects the theoretical insights discussed (Amazon, 2024).

At long last, Blut, Wunderlich, and Brock (2024) performed a meta-analysis, revealing that customer satisfaction, frequency of usage, and loyalty after interactions are significantly enhanced by anthropomorphism, intelligence, and task-fit of virtual assistants.

Theoretical Foundations of the Study

This study relies on two key models which are widely used to underpin the behavioral dimensions of technology adoption: Technology Acceptance Model (TAM) and the Stimulus Organism Response (SOR) framework.

Technology Acceptance Model (TAM)

One of the most notable models for forecasting and explaining user behavior in information systems remains the Technology Acceptance Model, introduced by Davis in 1989. It argues that a user's intention to accept and use a technology is driven by two factors; its perceived usefulness (PU) and perceived ease of use (PEOU)

TAM has been adjusted to mobile shopping and voice assistants and used in multiple studies (Bagozzi, 2007; Gefen et al., 2003; Fernandes & Oliveira, 2021) to analyze how users embrace smarter interfaces based on their functionality and ease of use.

Stimulus-Organism-Response (SOR) Framework

Originating from environmental psychology, SOR explains how designed external stimulus (app features or a voice assistant's responsiveness) impacts internal organism processes (trust, emotions, and other mental evaluations) that subsequently result in behavior outcomes (purchase intention, usage intention(Elgammal et al. (2025) utilized this framework in relation to mobile commerce and noted that the ubiquity and functionalities offered by

smart platforms act as triggers that impact trust and brand perception, which in turn results in user engagement.

Taken together, these two models offer a comprehensive theoretical framework for this study.

TAM elucidates the mental assessment process of accepting and adopting smart technologies, whereas SOR offers a wider behavioral scope that includes the emotions, context, and the psyche of consumers that inform their actions.

These frameworks will assist in the construction of the research model, formulation of the hypotheses, and analysis of the empirical results.

Methodology

Approach to the Research

This study uses a quantitative research approach since it seeks to assess and quantify the relationships between pivotal factors influencing consumers' mobile shopping applications and voice assistants' use. The study has a descriptive and correlational design, which is appropriate for perception, attitude, and behavioral intention studies.

Data collection tool: questionnaire

Primary data will be collected through a streamlined structured questionnaire derived from validated measurement models from earlier research, which will have multiple sections.

Demographics: age, gender, educational level, smartphone usage, etc.

Technological factors: perceived usefulness and ease of use

Trust, emotional engagement, perceived value, and social influence

Behavioral intention and actual usage

Responses will be captured on a 5-point Likert scale from “Strongly Disagree” to “Strongly Agree”.

Sample Method and Population

The population of interest is individuals who use mobile shopping applications and/or voice assistants such as Alexa, Google Assistant, and shopping chatbots. Non-probability convenience sampling will be utilized for the online questionnaire targeting university students, young professionals, and frequent shoppers.

The minimum sample size will be computed using G*Power 3.1 (Faul et al., 2007) to ensure sufficient statistical power for the analysis conducted.

Techniques for Analysis of Data

The chosen measurement model will dictate whether SmartPLS or SPSS (Statistical Package for the Social Sciences) will be used for analysis. The analysis is going to cover:

Descriptive statistics

Reliability and validity testing e.g. Cronbach's alpha and composite reliability

Exploratory or confirmatory factor analysis

Regression analysis or structural equation modeling hypothesis tests.

Ethical considerations

No identifying details will be collected. All participants will be told the purpose of the research and are free to choose whether to participate, and how much to share. Respondents' answers will remain confidential.

Research Instruments

In this study, the main data collection tool is a structured questionnaire which targets specific concerns regarding consumer behavior towards mobile shopping applications and voice assistants. The questionnaire was formulated after reviewing pertinent literature and was modified from previously tested measurement scales to ensure content validity and reliability.

1. Questionnaire Structure:

The questionnaire is subdivided into the following sections:

Section A: Demographic Information

This section comprises items pertaining to the respondent's age, gender, education level, frequency of technology usage, and knowledge regarding mobile shopping or voice assistants.

Section B: Technology-Related Variables

Perceived Usefulness (PU) – modified from Davis (1989)

Perceived Ease of Use (PEOU) – Davis (1989); Davis & Granić(2024)

Section C: Psychological and Emotional Factors

Trust – modified from Gefen et al. (2003)

Emotional Engagement – Fernandes & Oliveira (2021)

Perceived Value – Ashfaq et al. (2021); Schultz & Kaiser (2025)

Section D: Social Influence

Incorporates elements from Aw et al. (2022) and Al-Fraihat et al. (2023)

Section E: Behavioral Intention and Usage

Based on the TAM and SOR models, this measures an individual's likelihood of adopting mobile shopping applications or voice-activated assistants.

2. Measurement Scale

For Sections B to E, all items will be evaluated using a 5-point Likert scale which includes:

1 - Strongly Disagree

2 - Disagree

3 - Neutral

4 - Agree

5 - Strongly Agree

Study Limitations

The purpose of this study is to examine consumer attitudes towards shopping applications and voice shopping assistants. There are some notable limitations, however, that require attention:

Geographic Limitation:

This research is scoped to a certain geographical area such as a country or city. For this reason, the results may not be applicable to consumers from different cultures or economic settings.

Sampling Method:

This research will use a non-probability convenience sampling method which runs the risk of creating sampling bias. The findings only represent the perspectives of the individuals who opted to take the survey and have internet access.

Self-Reported Data:

The accuracy of responses in this study is contingent on self-reported data which has the potential to be impacted by social desirability bias or recall inaccuracies. Participants have the tendency to exaggerate or diminish their true behaviors or attitudes.

Focus on Technologies:

Only mobile shopping applications and voice shopping assistants are the focus of this research. Other smart technologies or shopping

platforms, such as augmented or virtual assistants in retail stores, are beyond the objectives of this study.

Temporal Limitations:

Data collection will occur during a specific time window. Consumer behaviors change rapidly, particularly within the digital sphere. Eventually, attitudes and behaviors may change as a result of new trends or technologies.

Theoretical Scope:

For this research, the primary basis is the Technology Acceptance Model (TAM) and the Stimulus-Organism-Response (SOR) model. These models are robust and foundational, yet they do not encompass everything that can potentially influence consumer behavior.

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