

A STUDY ON MOBILE APP DEVELOPMENT FOR E-COMMERCE IN COIMBATORE CITY

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Abstract: The study explores the development and impact of mobile applications in the e-commerce domain. It highlights how mobile apps have become a vital component of modern business strategies due to their role in enhancing user engagement, offering convenience, and driving revenue. The research focuses on the essential features, technologies, and challenges involved in creating successful e-commerce mobile apps. Key areas covered include user experience design, performance optimization, security and data privacy, and platform compatibility. The study utilizes a mixed-method research approach, gathering data through questionnaires and analyzing it using statistical tools such as percentage analysis, Like-rt scales, and chi-square tests. The findings emphasize the growing adoption of mobile e-commerce in India, identify user preferences, and suggest strategies to improve app functionality and consumer trust. Ultimately, the research underlines the potential of mobile apps to revolutionize e-commerce by aligning technology with user needs.

Keywords: Mobile App Development, E-Commerce, Mobile Commerce (M-Commerce), Security and Data Privacy, Android, iOS, Order Tracking.

I. INTRODUCTION

Mobile app development is the process of designing, building, testing, and deploying software applications for mobile devices, such as smart-phones and tablets. With the rapid growth of mobile technology, mobile apps have become an essential part of our daily lives, transforming the way we communicate, work, and play. Mobile app development involves various stages, including planning, design, development, testing, and deployment. Developers use various programming languages, such as Java, Swift, and Kotlin, and development frameworks, such as React Native and Flutter, to build mobile apps. Mobile apps can be categorized into native apps, hybrid apps, and web apps, each with its own advantages and disadvantages. Native apps are developed specifically for a particular mobile operating system, while hybrid apps combine elements of native and web apps. Web apps, on the other hand, are accessed through a web browser. Mobile app development offers numerous benefits, including increased reach, improved user experience, enhanced brand loyalty, and revenue growth. However, it also presents several challenges, including technical complexities, security concerns, and competition. Despite these challenges, mobile app development continues to evolve, with emerging trends like artificial intelligence, machine learning, and augmented reality transforming the mobile app landscape. As mobile technology advances, mobile app development will play a crucial role in shaping the future of business, entertainment, and communication. By understanding the principles and processes of mobile app development, individuals and organizations can create innovative and effective mobile apps that meet the evolving needs of their users. Whether it's a game, a productivity tool, or a social media platform, mobile apps have the power to transform the way we live, work, and interact with each other.

STATEMENT OF PROBLEM

Despite the promising potential of mobile applications in e-commerce, businesses often face significant challenges in their development and implementation. One of the key problems is ensuring that the mobile app provides a seamless, user-friendly experience across various devices and platforms. Technical issues such as slow load times, poor app performance, and security concerns often hinder the success of an e-commerce mobile application.

OBJECTIVES OF THE STUDY

1. To identify the key features and functionalities of a successful e-commerce mobile app □
2. To study the various mobile app development platforms and technologies
3. To know the challenges and limitations of mobile app development for development

II. RESEARCH METHODOLOGY**RESEARCH AREA**

The research is conducted in Coimbatore.

RESEARCH PERIOD

The research is conducted over a period of 4 months.

NUMBER OF SAMPLES

Sample size taken for the study is 107.

RESEARCH TOOLS

For this study

1. Simple Percentage analysis

$$\text{PERCENTAGE} = \frac{\text{Number of respondents}}{\text{Total respondents}} \times 100$$

2. Likert scale analysis

$$\text{LIKERT SCALE} = \frac{\sum fx}{\text{Number of respondents}}$$

III. REVIEW OF LITERATURE

1. **Zhou, T. (2011)** - Zhou examined how and why users decide to adopt mobile commerce (m-commerce) applications, which allow users to make purchases, access services, or perform transactions through mobile devices. This refers to how easy and user-friendly individuals find a particular m-commerce application. The easier it is for users to navigate and use, the more likely they are to adopt it. This concept stems from the Technology Acceptance Model (TAM), which suggests that perceived ease of use is a major factor in technology adoption. Trust is critical in the context of mobile commerce.
2. **Kim, D., & Benbasat, I. (2003)** - They explored how consumers decide whether to trust an online store or mobile shopping platform when making purchases. Trust is a fundamental factor in online transactions because the consumer is often unable to physically inspect products or meet the seller.
3. **Chaffey, D. (2015)** - Chaffey, D. (2015) refers to a publication by Dave Chaffey, a renowned expert in digital marketing, who explored mobile commerce (m-commerce) trends and the significance of usability in mobile app design for customer engagement. In this context, Chaffey's work discusses how mobile commerce has evolved, identifying key trends such as the increasing use of smartphones for online shopping, mobile payments, and app-based services.
4. **Gupta, S., & Arora, S. (2017)** - Gupta, S., & Arora, S. (2017) refers to a study that examined the impact of personalized recommendations and push notifications on the success of mobile apps, particularly in the context of e-commerce and user engagement. In their research, Gupta and Arora explored how these two features—personalization and push notifications—affect user behavior, satisfaction, and overall app performance.
5. **Wang, Y., & Emurian, H. H. (2005)** - Wang, Y., & Emurian, H. H. (2005) refers to a study that discussed the cultural and psychological considerations in designing mobile e-commerce apps. Their work emphasized how these factors influence user behavior, decision-making, and the overall success of mobile commerce platforms. The study highlighted the importance of understanding the cultural background of users when designing mobile e-commerce apps. Different cultures have varying preferences, values, and behaviors that can impact how users interact with technology.

DATA ANALYSIS, INTERPRETATION & INFERENCE

TABLE 1 USING A E-COMMERCE

SCALE	NO.OF.RESPONSES	PERCENTAGE	LIKERT SCALE ANALYSIS
1	24	25.8	24
2	22	23.6	44
3	29	31.1	87
4	18	19.3	72
TOTAL	93	106.5	227

INTERPRETATION

Table 1 shows that, the 25.8% of the respondents Less than one year as 1, 23.6% as 2, 31.1% as 3, 19.3% . It indicates that, score of 72 suggests that most respondents

TABLE 2 E-COMMERCE BUSINESS DOMAIN

SCALE	NO.OF.RESPONSES	PERCENTAGE	LIKERT SCALE ANALYSIS
1	36	38.7	36
2	17	18.2	34
3	27	29.03	81
4	13	13.9	52
TOTAL	93	100	203

INTREPRETATION:

The above table show that 36(38.7%) of respondents are Broadness Consumer choice and 17(18.3%) of the respondents are the Hastens business business and 33(35.5%) of the respondents are the Encourages price transparency and 14(15.1%) of the respondents are the Do not know

TABLE 3 DO YOU USE E-COMMERCE

SCALE	NO.OF.RESPONSES	PERCENTAGE	LIKERT SCALE ANALYSIS
1	41	44.06	41
2	22	23.6	44
3	30	32.2	90
TOTAL	93	100	175

INTREPRETATION:

The above table show that 41(44.06%) of respondents are For Personal Use and 22(23.6%) of the respondents are the for Business and 30(32.2%) of the respondents are the For Both Personal Use and Business Use.

TABLE 4 FEATURES WITHIN AN E-COMMERCE APP

SCALE	NO.OF.RESPONSES	PERCENTAGE	LIKERT SCALE ANALYSIS
1	10	10.8	10
2	51	54.6	102
3	32	34.4	96
TOTAL	93	100	208

INTREPRETATION:

The above table show that 10(10.8%) of respondents are Yes and 51(54.6%) of the respondents are the No and 32(34.4%) of the respondents are the Maybe

TABLE 5 MOBILE PHONE IN A DAY

SCALE	NO.OF.RESPONSES	PERCENTAGE	LIKERT SCALE ANALYSIS
1	17	18.2	17
2	39	41.9	78
3	25	26.8	75
4	11	11.8	44
TOTAL	93	100	214

INTREPRETATION:

The above table show that 17(18.2%) of respondents are Less than 1 hour and 39(41.9%) of the respondents are the 1-3 hours and 25(26.8%) of the respondents are the 3-5 hours and 11(11.8%) of the respondents.

RECOMMENDATIONS

- **Capitalize on Optimism:** This favorable perception should be leveraged by introducing innovative features, expanding service offerings, and strengthening customer engagement strategies. By aligning with consumer confidence, companies can build stronger brand loyalty and encourage early adoption of new technologies. Promoting forward-thinking initiatives and highlighting future-ready solutions can position e-commerce platforms as leaders in a rapidly evolving digital market.
- **Improve Mobile UX:** Enhancing mobile user experience (UX) is crucial for retaining users and driving engagement in today's mobile-first world. To achieve this, prioritize intuitive navigation by employing familiar patterns like tab bars and hamburger menus, ensuring users can effortlessly find what they need. Optimize touch interactions by designing larger touch targets and providing immediate feedback through subtle animations or haptic responses. Simplify content presentation to suit smaller screens, using concise text and ample whitespace to avoid clutter.

IV. CONCLUSION

The study highlights the pivotal role that mobile applications play in the growth and transformation of the e-commerce industry, especially within the context of Coimbatore. Through the analysis of user responses and statistical data, it becomes evident that mobile apps are no longer a luxury but a necessity for businesses seeking to engage with tech-savvy consumers. The research findings reveal that while users appreciate the convenience and personalization offered by e-commerce apps, challenges such as performance issues, lack of certain features, and security concerns persist.

Most respondents use e-commerce apps for both personal and business purposes, emphasizing their wide applicability. Features such as user-friendly design, secure payment options, and efficient navigation emerged as critical factors in user satisfaction. Moreover, the study indicates that the majority of users spend significant time on mobile devices, making the mobile platform an ideal medium for e-commerce expansion.

Despite the technical and design-related hurdles, mobile app development holds immense potential in enhancing consumer trust, loyalty, and sales. To fully harness this potential, developers and businesses must prioritize user experience, cross-platform functionality, and robust security measures.

In conclusion, mobile apps are reshaping the e-commerce landscape in India. By aligning technological innovation with user expectations, businesses can drive growth, gain competitive advantage, and deliver value to customers more effectively.

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